

BULETIN MAGNET BUMI

TAHUN 2021



BADAN METEOROLOGI KLIMATOLOGI DAN GEOFISIKA

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BULETIN MAGNET BUMI 2021

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KATA PENGANTAR

Stasiun Geofisika Manado, adalah salah satu dari enam UPT BMKG (Badan Meteorologi Klimatologi dan Geofisika) yang melakukan pengamatan variasi medan magnet bumi. Pengamatan ini mulai dilakukan pada tahun 1991 di Pos Pengamatan Magnet Bumi di kota Tondano, Kabupaten Minahasa Sulawesi Utara.

Pos pengamatan magnet bumi ini terdaftar pada *World Data Centre for Geomagnetism (Edinburgh)* dengan nama stasiun TONDANO dan kode IAGA TND. Terdapat tiga peralatan yang dioperasikan yaitu Proton Processor Magnetometer (PPM) POS-1 dan Variometer DTU SPACE FGE K2 untuk variasi harian, sementara untuk pengamatan absolut menggunakan *Declination Inclination Magnetometer (DIM) Bartington Wild T1*.

Buletin magnet bumi diterbitkan sebagai rangkuman kegiatan pengamatan medan magnet bumi yang dilakukan sepanjang tahun 2021. Buletin ini berisi data pengukuran absolut, variasi harian dan bulanan dari medan magnet bumi, serta analisa bulanan A-indeks dan K-indeks yang mengindikasikan terjadinya gangguan terhadap medan magnet bumi.

Ucapan terima kasih disampaikan kepada semua pihak yang telah bersama-sama bekerja sampai buletin ini dapat diterbitkan.

Kami berharap buletin ini dapat berguna dan secara umum memberikan sumbangsih untuk kemajuan pengamatan magnet bumi di Indonesia.

Manado, Januari 2022

Kepala Stasiun Geofisika Manado,

Tony Agus Wijaya, S.Si.
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DAFTAR ISTILAH

- Atmosfer : ruang di sekitar bumi yang batas bawahnya adalah permukaan bumi dan batas atasnya tidak tentu.
- Magnet bumi : merupakan medan magnet yang dihasilkan oleh bumi, dimana kutub Utara magnet bumi berada di kutub selatan geografis bumi dan kutub Selatan magnet bumi berada di kutub utara geografis bumi.
- Komponen X, Y dan Z : komponen pengukuran medan magnet bumi, dimana:
- X = medan magnet bumi komponen horizontal yang searah dengan arah utara geografis (berarah Timur-Barat geografis bumi).
 $X = H \cos D$.
- Y = medan magnet bumi komponen horizontal yang searah dengan arah timur geografis (berarah Utara-Selatan geografis bumi).
 $Y = H \sin D = X \tan D$.
- Z = medan magnet bumi komponen vertikal.
 $Z = F \sin I = H \tan I$.
- H : Resultan pengukuran medan magnet bumi dari komponen X dan Y .
 $H = \sqrt{x^2 + y^2}$, dan merupakan medan magnet bumi komponen horizontal
- D : sudut Deklinasi dari medan magnet bumi dengan formula
 $D = \arctan (Y/X)$.
- I : sudut Inklinasi medan magnet bumi dengan formula
 $I = \arctan (Z/H)$.
- F a : medan magnet bumi total
 $F = \sqrt{x^2 + y^2 + z^2}$,
- nT : satuan besaran medan magnet bumi dengan satuan nano Tesla (nT).
- K-indeks : sebuah indeks lokal kuasi-logaritmik dalam periode 3 jam dari aktivitas magnetik bumi
- A-indeks : nilai maksimum yang terjadi dalam rentang waktu 24 jam, dimana diperoleh dengan menghitung rata2 dari 8 titik amplitude (a-indeks)
- a-indeks : konversi linier dari K-indeks dalam periode 3 jam

I. PENDAHULUAN

A. Medan Magnet Bumi

Bumi memiliki medan magnetik yang menyelubungi bumi dan membentuk lapisan pelindung. Lapisan ini dinamakan Magnetosfer. Magnetosfer berfungsi untuk melindungi bumi dari partikel dari matahari yang berbahaya karena memiliki energi tinggi dan berguna untuk melindungi atmosfer agar tidak terganggu oleh angin matahari. Medan magnetik yang terukur di bumi disebut medan magnet bumi (medan geomagnetik). Medan geomagnetik merupakan superposisi medan magnet yang berasal dari medan magnet utama, medan magnet eksternal dan medan magnet anomali. Medan geomagnet di setiap titik permukaan bumi berbentuk vektor, yaitu memiliki arah dan besaran. Komponen-komponen vektor pada medan geomagnet yaitu komponen X, Y, Z, H, F, I, D.

Intensitas medan magnet bumi yang terukur di suatu titik mengalami perubahan secara signifikan terhadap waktu. Waktu perubahan intensitas medan magnet dapat terjadi dalam hitungan detik hingga jutaan tahun, secara periodik maupun acak. Variasi terhadap waktu ini dapat dikategorikan menjadi variasi jangka panjang atau variasi jangka pendek. Variasi jangka panjang (*secular variation*) memiliki rentang waktu 5 tahun atau lebih, perubahan ini disebabkan karena variasi medan magnet utama bumi akibat perubahan posisi kutub magnet. Sedangkan variasi harian disebabkan akibat variasi medan magnet luar yang dipengaruhi oleh radiasi matahari. Selain kedua variasi tersebut, medan magnet bumi juga dapat berubah sementara akibat adanya badai magnetik.

B. Stasiun Magnet Bumi Tondano

Nama Stasiun	: Stasiun Geofisika Manado
Nama observatorium	: TONDANO
Kode Stasiun	: TND
Alamat observatorium	: Jl. Papakelan, Kelurahan Kendis, Kecamatan Tondano Timur, Kabupaten Minahasa, Provinsi Sulawesi Utara.
Lintang Geografis	: 1.295 Lintang Utara / <i>North</i>
Bujur Geografis	: 124,925 Bujur Timur / <i>East</i>
Ketinggian	: 704 meter
Waktu lokal	: UTC + 8
Peralatan	:
Variometer	- <i>DTU Space FGE K2</i> , untuk data HEZ Resolusi digital : 0.1 nT <i>Sampling rate</i> : 1 detik

- *Quantum Magnetometry Laboratory* - POS-1 Proton
Precision Magnetometer (PPM)
 Resolusi digital : 0.5 nT
Sampling rate : 10 detik

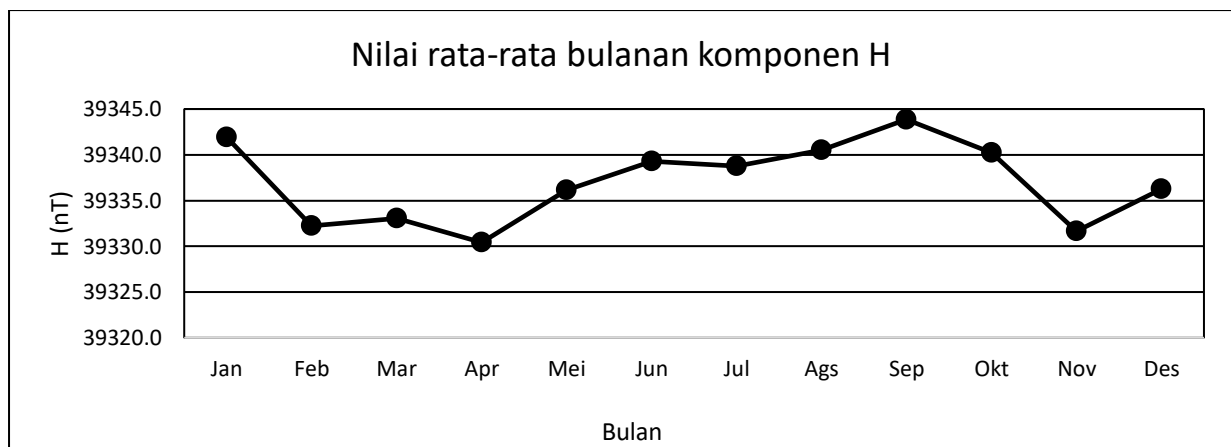
Absolut: - *Declination Inclination Magnetometer (DIM) Theodolite*
 Bartington Wild K1

II. TABEL DAN GRAFIK NILAI RATA-RATA VARIASI HARIAN KOMPONEN MAGNETIK DI TAHUN 2021

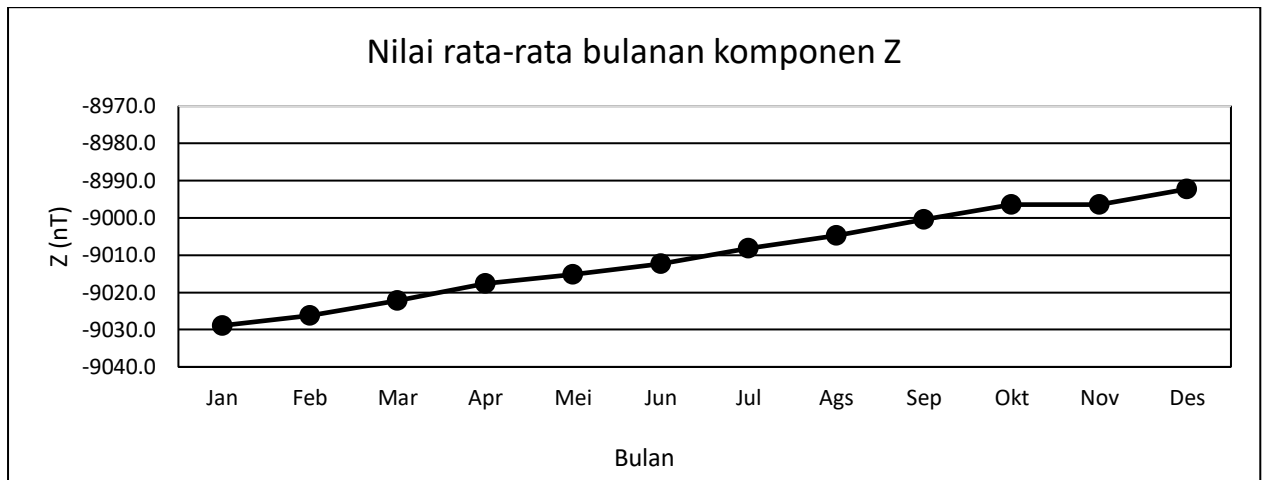
A. Nilai Rata-rata Bulanan Variasi Harian Setiap Komponen

Tabel 1 Nilai rata-rata bulanan variasi harian setiap komponen magnetik di tahun 2021

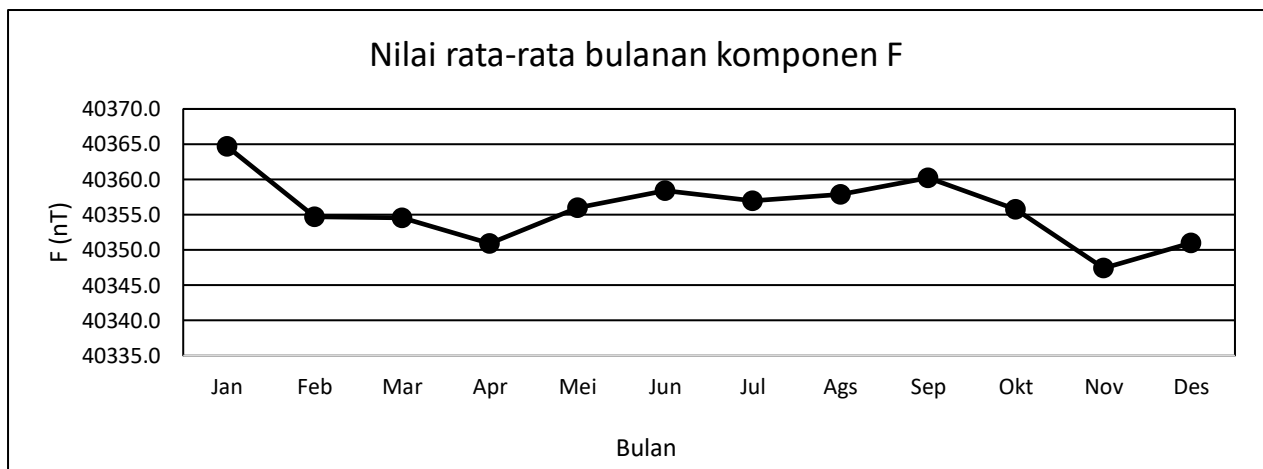
Bulan	H (nT)	Z (nT)	F (nT)	X (nT)	Y (nT)	D (menit)	I (derajat)
Jan	39341.9	-9028.9	40364.7	39340.1	374.8	32.8	-12.93092
Feb	39332.3	-9026.3	40354.7	39330.5	369.5	32.3	-12.93036
Mar	39333.1	-9022.2	40354.5	39331.4	363.6	31.8	-12.92440
Apr	39330.4	-9017.6	40350.9	39328.8	359.3	31.4	-12.91888
Mei	39336.2	-9015.1	40356.0	39334.6	354.2	31.0	-12.91370
Jun	39339.3	-9012.3	40358.4	39337.7	349.0	30.5	-12.90883
Jul	39338.7	-9008.1	40356.9	39337.2	344.0	30.1	-12.90314
Ags	39340.5	-9004.7	40357.9	39339.0	338.3	29.6	-12.89789
Sep	39343.9	-9000.5	40360.2	39342.4	334.2	29.2	-12.89101
Okt	39340.2	-8996.4	40355.8	39338.8	331.5	29.0	-12.88644
Nov	39331.7	-8996.4	40347.4	39330.3	325.2	28.4	-12.88919
Des	39336.3	-8992.3	40351.0	39335.0	319.7	28.0	-12.88198



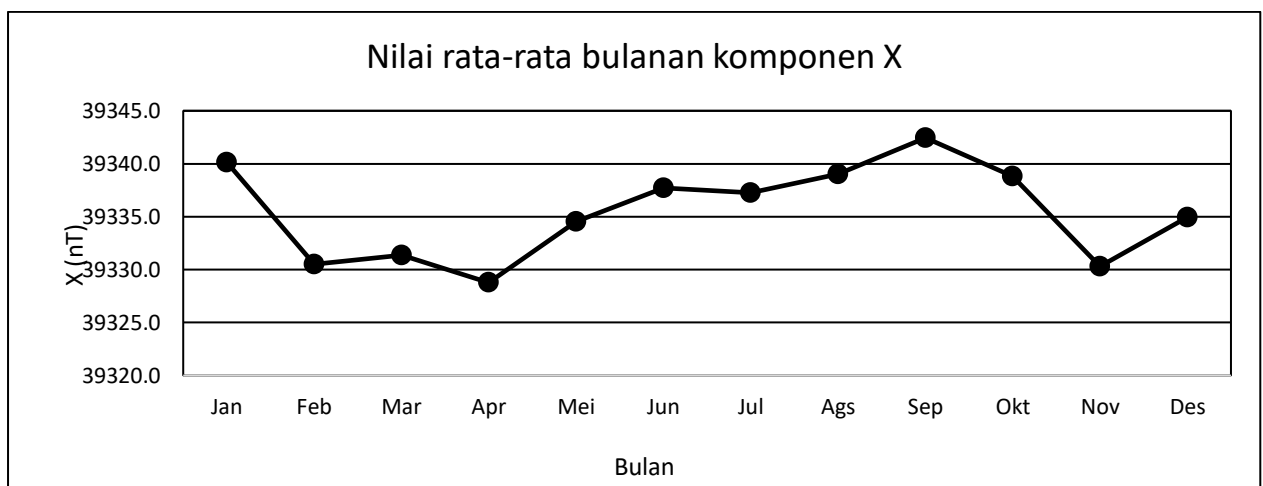
Gambar 1 Grafik nilai rata-rata bulanan variasi harian komponen H - *horizontal*



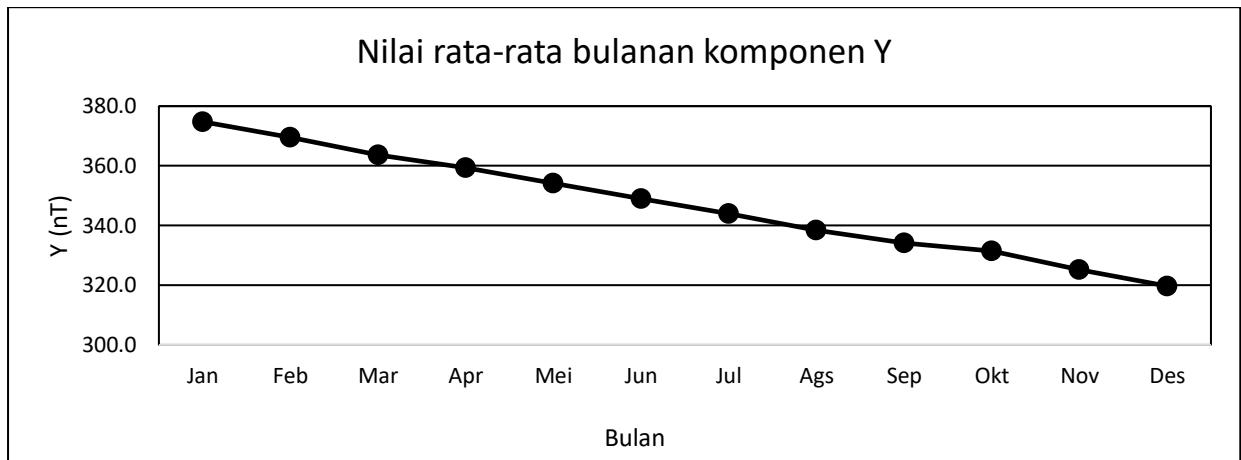
Gambar 2 Grafik nilai rata-rata bulanan variasi harian komponen Z - *vertical*



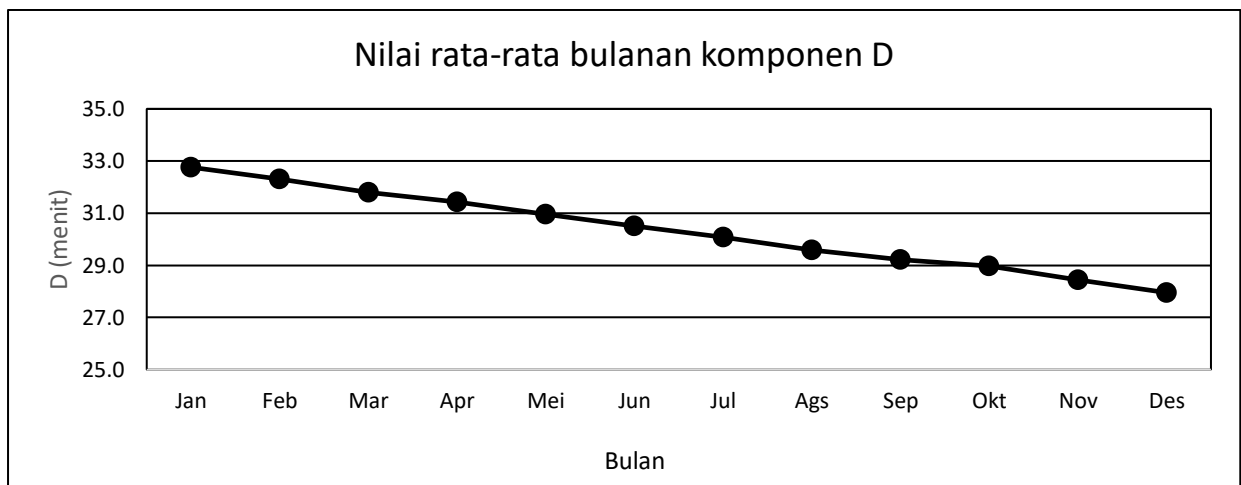
Gambar 3 Grafik nilai rata-rata bulanan variasi harian komponen F - *total*



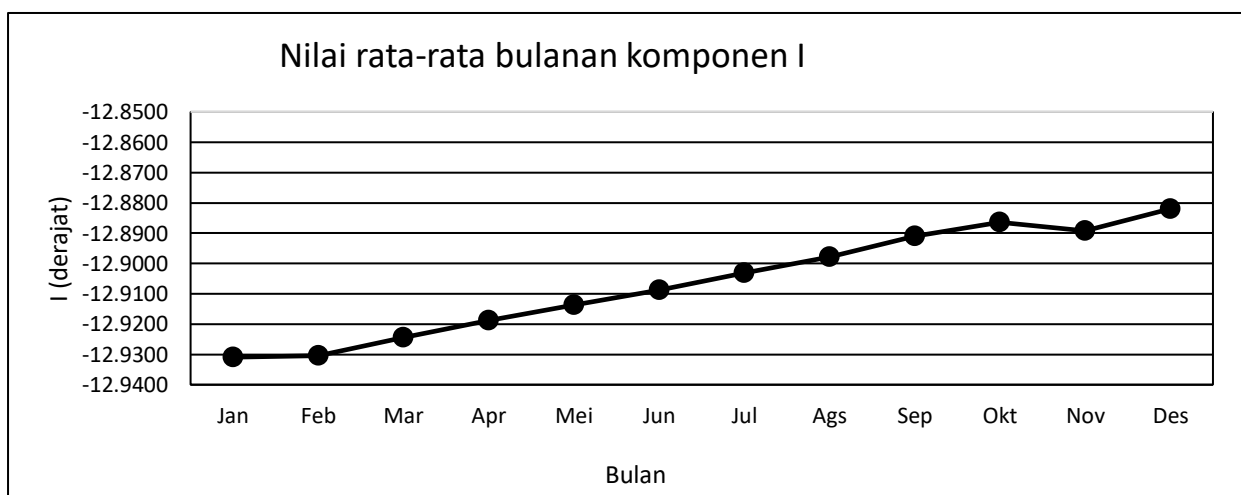
Gambar 4 Grafik nilai rata-rata bulanan variasi harian komponen X - *north*



Gambar 5 Grafik nilai rata-rata bulanan variasi harian komponen Y - *east*



Gambar 6 Grafik nilai rata-rata bulanan variasi harian komponen D - *declination*

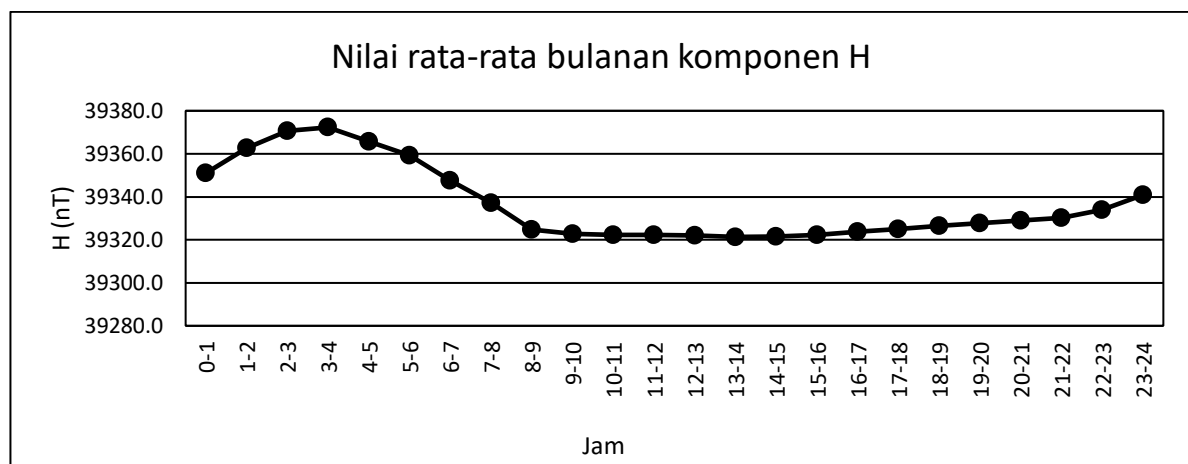


Gambar 7 Grafik nilai rata-rata bulanan variasi harian komponen I - *inclination*

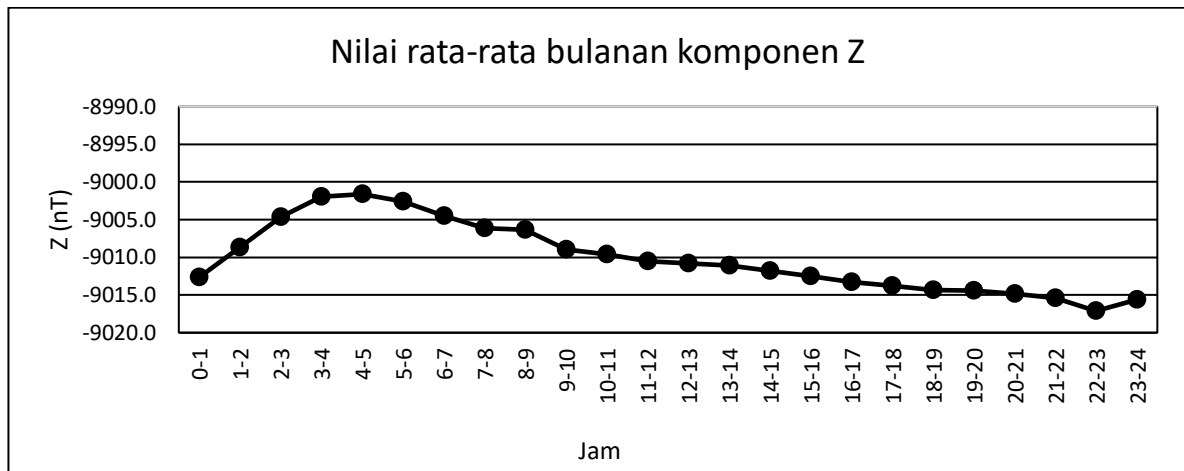
B. Nilai Rata-rata Tahunan Variasi Harian Per Jam Untuk Setiap Komponen

Tabel 2 Tabel nilai rata-rata tahunan variasi harian per jam di tahun 2021

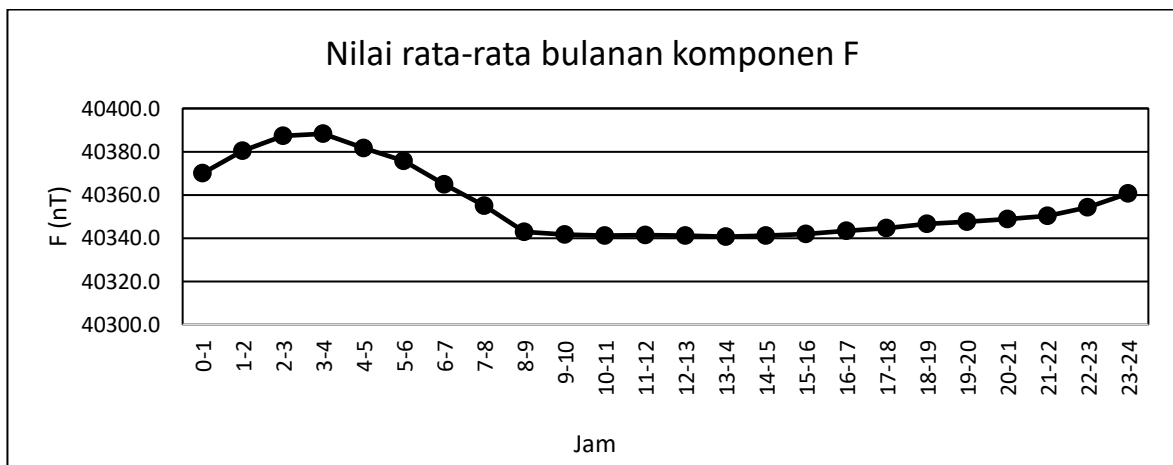
Bulan	H (nT)	Z (nT)	F (nT)	X (nT)	Y (nT)	D (menit)	I (derajat)
0-1	39351.1	-9012.6	40370.0	39349.7	340.2	29.736	-12.9055
1-2	39362.7	-9008.7	40380.4	39361.2	337.7	29.505	-12.8964
2-3	39370.7	-9004.6	40387.3	39369.3	337.4	29.475	-12.8882
3-4	39372.3	-9002.0	40388.3	39370.8	339.5	29.657	-12.8840
4-5	39365.6	-9001.6	40381.7	39364.1	341.9	29.878	-12.8857
5-6	39359.2	-9002.6	40375.6	39357.6	346.0	30.236	-12.8890
6-7	39347.7	-9004.5	40364.9	39346.1	349.9	30.587	-12.8953
7-8	39337.1	-9006.1	40354.9	39335.5	353.0	30.863	-12.9010
8-9	39324.8	-9006.4	40343.0	39323.2	355.7	31.112	-12.9052
9-10	39322.8	-9008.9	40341.6	39321.2	354.8	31.029	-12.9094
10-11	39322.3	-9009.6	40341.2	39320.7	351.7	30.763	-12.9105
11-12	39322.2	-9010.5	40341.4	39320.7	350.0	30.614	-12.9117
12-13	39321.9	-9010.8	40341.1	39320.4	348.8	30.503	-12.9122
13-14	39321.3	-9011.1	40340.6	39319.8	347.6	30.400	-12.9128
14-15	39321.6	-9011.8	40341.1	39320.1	346.8	30.331	-12.9137
15-16	39322.4	-9012.5	40342.0	39320.9	346.5	30.310	-12.9144
16-17	39323.7	-9013.3	40343.4	39322.2	346.8	30.327	-12.9151
17-18	39324.9	-9013.8	40344.7	39323.4	347.1	30.353	-12.9154
18-19	39326.6	-9014.3	40346.5	39325.1	347.4	30.382	-12.9156
19-20	39327.8	-9014.4	40347.7	39326.3	347.4	30.379	-12.9153
20-21	39328.9	-9014.8	40348.9	39327.4	347.6	30.401	-12.9156
21-22	39330.3	-9015.4	40350.3	39328.7	348.3	30.459	-12.9160
22-23	39334.0	-9017.1	40354.3	39332.4	349.6	30.565	-12.9171
23-24	39340.8	-9015.6	40360.6	39339.3	344.8	30.142	-12.9129



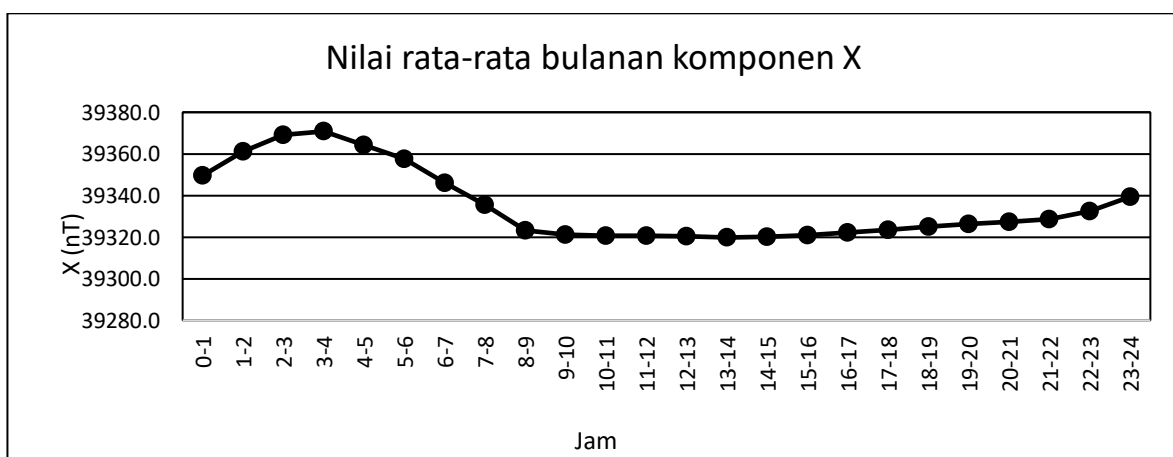
Gambar 8 Nilai rata-rata harian komponen H - horizontal



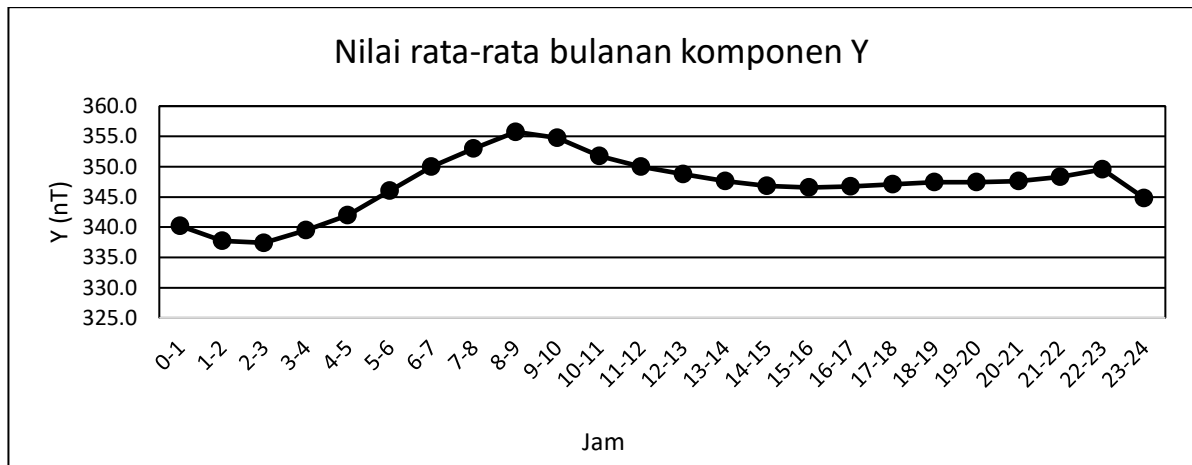
Gambar 9 Nilai rata-rata harian komponen Z - *vertical*



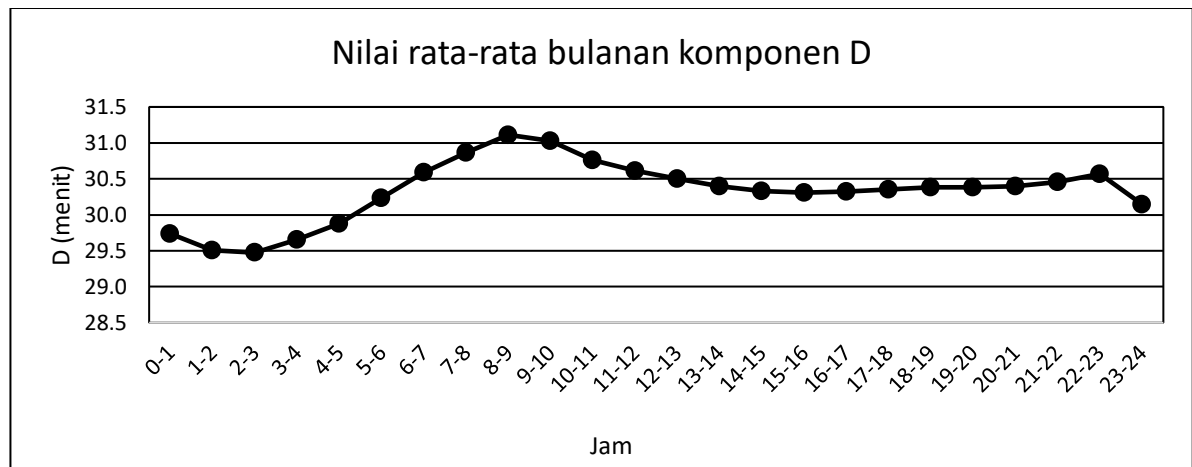
Gambar 10 Nilai rata-rata harian komponen F - *total*



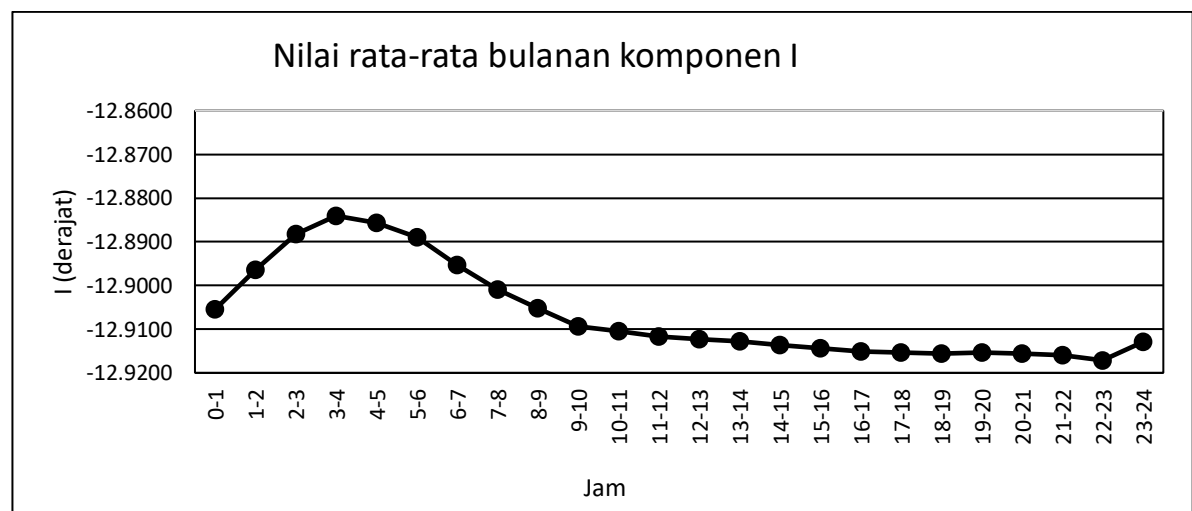
Gambar 11 Nilai rata-rata harian komponen X - *north*



Gambar 12 Nilai rata-rata harian komponen Y - east



Gambar 13 Nilai rata-rata harian komponen D - declination



Gambar 14 Nilai rata-rata harian komponen I - inclination

III. NILAI PENGAMATAN ABSOLUT MEDAN MAGNET BUMI

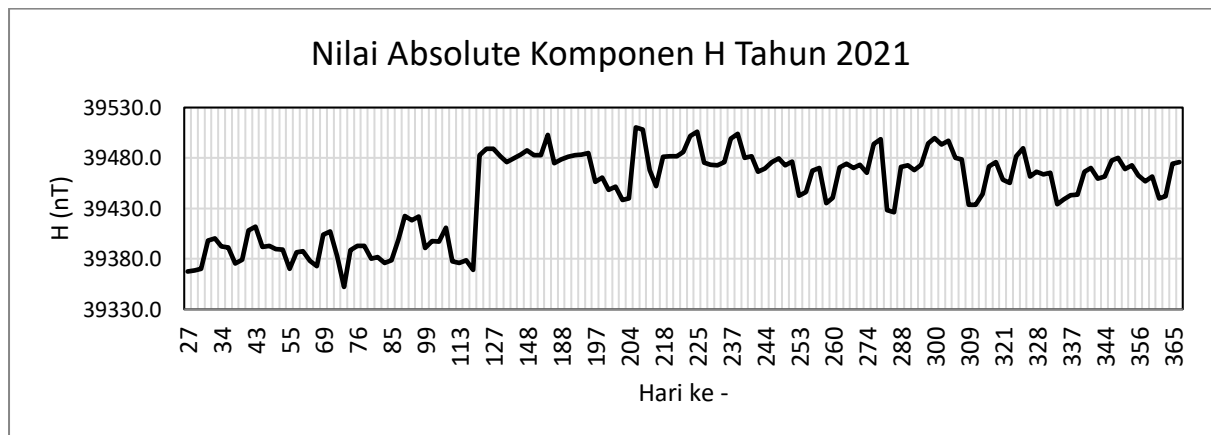
Tabel 3 Nilai pengamatan absolut medan magnet bumi tahun 2021

Hari ke-	Jam D (UTC)	D(deg)	jam I (UTC)	I (deg)	H (nT)	Z (nT)	F (nT)	X (nT)	Y (nT)
27	01:22:00	-0.2325	01:30:00	-12.8373	39367.6	-8971.1	40376.8	39367.3	-159.749
27	01:37:00	-0.2349	01:45:00	-12.8367	39368.6	-8970.8	40377.8	39368.3	-161.402
27	01:51:00	-0.2357	01:57:00	-12.8323	39370.3	-8968.1	40378.8	39370.0	-161.959
29	01:56:00	-0.2319	02:06:00	-12.8383	39398.4	-8978.8	40408.6	39398.1	-159.461
29	02:14:00	-0.2319	02:24:00	-12.8346	39400.4	-8976.6	40410.0	39400.1	-159.469
34	00:48:00	-0.2303	00:55:00	-12.8354	39392.1	-8975.3	40401.6	39391.8	-158.336
34	01:05:00	-0.2329	01:12:00	-12.8344	39391.5	-8974.4	40400.9	39391.2	-160.121
36	00:11:00	-0.2161	00:19:00	-12.8554	39375.5	-8986.0	40387.9	39375.2	-148.511
36	00:23:00	-0.2178	00:30:00	-12.8533	39379.2	-8985.3	40391.3	39378.9	-149.693
43	00:26:00	-0.2478	00:34:00	-12.8356	39408.2	-8979.1	40418.2	39407.8	-170.437
43	00:42:00	-0.2474	00:50:00	-12.8329	39411.7	-8977.9	40421.3	39411.3	-170.177
48	00:44:00	-0.2203	00:55:00	-12.8442	39391.6	-8981.5	40402.6	39391.3	-151.459
48	01:00:00	-0.2249	01:09:00	-12.8425	39393.1	-8980.6	40403.8	39392.8	-154.627
50	01:00:00	-0.2186	01:05:00	-12.8529	39389.7	-8987.4	40402.0	39389.4	-150.283
50	01:10:00	-0.2190	01:15:00	-12.8533	39389.1	-8987.5	40401.4	39388.8	-150.555
55	00:54:00	-0.2390	01:06:00	-12.8500	39370.3	-8980.8	40381.6	39370.0	-164.226
57	00:45:00	-0.2297	00:55:00	-12.8473	39386.7	-8982.6	40398.0	39386.4	-157.902
57	01:03:00	-0.2274	01:09:00	-12.8479	39387.8	-8983.3	40399.2	39387.5	-156.325
62	01:37:00	-0.2494	01:43:00	-12.8413	39378.1	-8976.3	40388.2	39377.7	-171.406
62	01:49:00	-0.2453	01:54:00	-12.8446	39373.0	-8977.6	40383.5	39372.6	-168.567
69	01:13:00	-0.2153	01:22:00	-12.8413	39404.1	-8982.2	40414.9	39403.8	-148.068
69	01:30:00	-0.2157	01:37:00	-12.8408	39407.3	-8982.7	40418.1	39407.0	-148.355
71	00:22:00	-0.2436	00:28:00	-12.8333	39383.0	-8971.7	40391.9	39382.6	-167.441
72	00:35:00	-0.2446	00:40:00	-12.8342	39352.2	-8965.3	40360.6	39351.8	-167.997
76	00:41:00	-0.2603	00:50:00	-12.8333	39388.8	-8973.0	40397.9	39388.4	-178.946
76	01:00:00	-0.2578	01:08:00	-12.8317	39393.1	-8972.8	40402.1	39392.7	-177.247
78	00:27:00	-0.2353	00:37:00	-12.8454	39392.8	-8982.7	40403.9	39392.5	-161.776
83	01:11:00	-0.2386	01:17:00	-12.8500	39380.4	-8983.1	40391.9	39380.1	-163.994
83	01:23:00	-0.2378	01:29:00	-12.8442	39381.6	-8979.2	40392.2	39381.3	-163.449
85	00:37:00	-0.2294	00:42:00	-12.8329	39376.2	-8969.8	40384.9	39375.9	-157.653
85	00:47:00	-0.2315	00:51:00	-12.8342	39378.7	-8971.3	40387.8	39378.4	-159.107
90	00:33:00	-0.2211	00:40:00	-12.8358	39399.3	-8977.2	40409.1	39399.0	-152.038
92	01:31:00	-0.2115	01:41:00	-12.8387	39422.4	-8984.6	40433.2	39422.1	-145.522
97	01:41:00	-0.2261	01:49:00	-12.8329	39418.5	-8979.5	40428.3	39418.2	-155.552
97	01:56:00	-0.2265	02:02:00	-12.8296	39422.0	-8977.9	40431.3	39421.7	-155.841
99	00:18:00	-0.2169	00:26:00	-12.8438	39390.6	-8981.0	40401.4	39390.3	-149.117
99	00:34:00	-0.2165	00:46:00	-12.8404	39397.5	-8980.1	40408.0	39397.2	-148.869
104	01:23:00	-0.2382	01:28:00	-12.8430	39397.2	-8981.9	40408.1	39396.9	-163.788
106	00:56:00	-0.2474	01:10:00	-12.8183	39410.9	-8967.2	40418.2	39410.5	-170.174
111	00:50:00	-0.2474	00:58:00	-12.8350	39377.5	-8971.7	40386.6	39377.1	-170.029

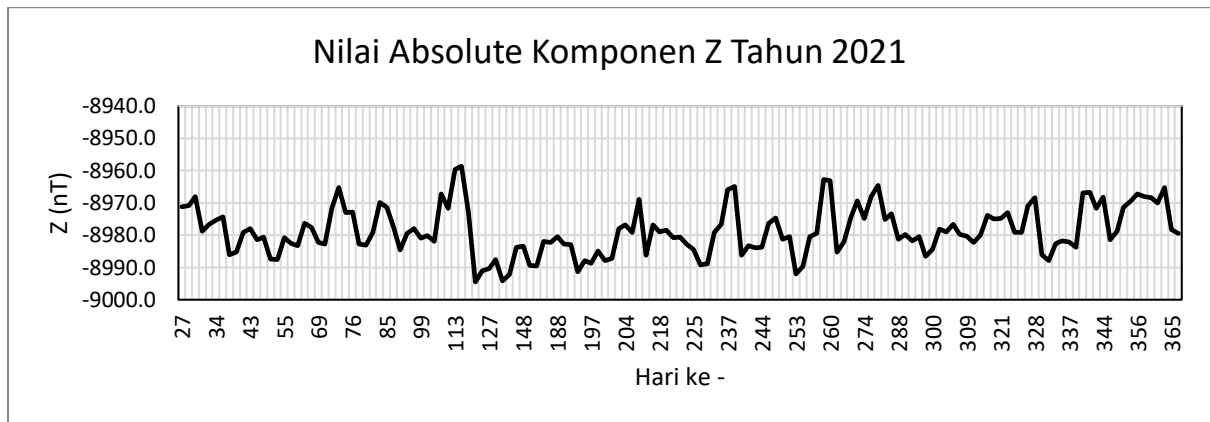
113	01:07:00	-0.2469	01:17:00	-12.8187	39376.1	-8959.6	40382.6	39375.7	-169.680
113	01:26:00	-0.2482	01:36:00	-12.8167	39378.6	-8958.6	40384.8	39378.2	-170.584
118	01:32:00	-0.2396	01:43:00	-12.8392	39369.2	-8972.8	40378.7	39368.9	-164.634
125	00:44:00	-0.2511	00:56:00	-12.8333	39483.0	-8994.5	40494.6	39482.6	-173.035
127	01:13:00	-0.2428	01:22:00	-12.8267	39489.0	-8991.0	40499.6	39488.6	-167.340
127	01:26:00	-0.2440	01:34:00	-12.8258	39489.1	-8990.4	40499.6	39488.7	-168.168
139	01:36:00	-0.2511	01:43:00	-12.8242	39481.8	-8987.6	40491.8	39481.4	-173.029
146	00:17:00	-0.2407	00:23:00	-12.8350	39476.1	-8994.1	40487.7	39475.8	-165.839
146	00:32:00	-0.2457	00:39:00	-12.8312	39479.6	-8992.2	40490.7	39479.2	-169.299
148	01:08:00	-0.2282	01:17:00	-12.8183	39483.4	-8983.7	40492.6	39483.1	-157.256
148	01:26:00	-0.2307	01:35:00	-12.8167	39487.4	-8983.4	40496.3	39487.1	-158.995
183	01:41:00	-0.2337	01:50:00	-12.8262	39482.6	-8989.3	40493.0	39482.3	-161.043
183	01:58:00	-0.2375	02:03:00	-12.8267	39482.9	-8989.6	40493.3	39482.6	-163.662
186	01:41:00	-0.2594	01:59:00	-12.8097	39503.1	-8981.9	40511.4	39502.7	-178.845
188	00:59:00	-0.2400	01:10:00	-12.8190	39475.1	-8982.3	40484.1	39474.8	-165.352
188	01:22:00	-0.2454	01:35:00	-12.8153	39478.8	-8980.4	40487.3	39478.4	-169.089
190	00:55:00	-0.2457	01:06:00	-12.8178	39481.2	-8982.8	40490.2	39480.8	-169.306
190	01:12:00	-0.2458	01:21:00	-12.8175	39482.6	-8982.9	40491.6	39482.2	-169.381
195	00:26:00	-0.2329	00:37:00	-12.8289	39483.4	-8991.3	40494.2	39483.1	-160.495
195	00:45:00	-0.2354	00:50:00	-12.8237	39484.8	-8987.9	40494.8	39484.5	-162.223
197	00:27:00	-0.2329	00:37:00	-12.8338	39456.5	-8988.7	40467.4	39456.2	-160.385
197	00:47:00	-0.2366	00:59:00	-12.8272	39460.4	-8984.9	40470.4	39460.1	-162.949
202	00:22:00	-0.2537	00:32:00	-12.8350	39448.6	-8987.9	40459.6	39448.2	-174.674
202	00:38:00	-0.2548	00:44:00	-12.8333	39451.7	-8987.3	40462.4	39451.3	-175.445
204	00:53:00	-0.2691	00:57:00	-12.8246	39438.4	-8978.0	40447.4	39438.0	-185.229
204	01:02:00	-0.2721	01:06:00	-12.8225	39439.7	-8976.8	40448.3	39439.3	-187.300
209	01:19:00	-0.2612	01:25:00	-12.8038	39510.3	-8979.2	40517.8	39509.9	-180.119
209	01:32:00	-0.2650	01:39:00	-12.7900	39508.4	-8968.8	40513.6	39508.0	-182.731
211	01:05:00	-0.2516	01:10:00	-12.8267	39468.1	-8986.3	40478.2	39467.7	-173.314
216	00:16:00	-0.2696	00:31:00	-12.8186	39452.2	-8976.8	40460.6	39451.8	-185.638
218	00:34:00	-0.2571	00:42:00	-12.8125	39481.0	-8978.9	40489.1	39480.6	-177.160
218	00:48:00	-0.2625	00:55:00	-12.8117	39481.6	-8978.5	40489.6	39481.2	-180.884
223	01:18:00	-0.2815	01:27:00	-12.8147	39481.9	-8980.7	40490.4	39481.4	-193.978
223	01:35:00	-0.2872	01:44:00	-12.8132	39486.1	-8980.6	40494.5	39485.6	-197.927
225	00:52:00	-0.2550	00:59:00	-12.8115	39501.7	-8982.9	40510.2	39501.3	-175.805
225	01:08:00	-0.2575	01:16:00	-12.8121	39506.2	-8984.4	40514.9	39505.8	-177.549
230	00:33:00	-0.2611	00:42:00	-12.8285	39475.5	-8989.2	40486.0	39475.1	-179.891
230	00:48:00	-0.2641	00:52:00	-12.8287	39473.3	-8988.9	40483.9	39472.9	-181.948
232	00:41:00	-0.2708	00:47:00	-12.8154	39472.6	-8979.1	40481.0	39472.2	-186.561
232	00:55:00	-0.2746	01:01:00	-12.8108	39476.1	-8976.6	40483.8	39475.6	-189.195
237	01:14:00	-0.2698	01:23:00	-12.7888	39499.3	-8965.9	40504.1	39498.9	-185.998
237	01:32:00	-0.2733	01:42:00	-12.7860	39504.0	-8964.9	40508.4	39503.6	-188.433
239	00:27:00	-0.2454	00:36:00	-12.8229	39480.0	-8986.2	40489.8	39479.6	-169.094
239	00:42:00	-0.2477	00:49:00	-12.8183	39481.7	-8983.3	40490.8	39481.3	-170.686

244	00:36:00	-0.2635	00:42:00	-12.8240	39466.2	-8983.9	40475.8	39465.8	-181.502
244	00:46:00	-0.2654	00:51:00	-12.8229	39469.3	-8983.8	40478.8	39468.9	-182.825
246	01:20:00	-0.2804	01:27:00	-12.8104	39476.0	-8976.3	40483.7	39475.5	-193.191
246	01:33:00	-0.2854	01:38:00	-12.8071	39479.6	-8974.7	40486.9	39479.1	-196.654
251	00:22:00	-0.2625	00:32:00	-12.8185	39472.5	-8981.3	40481.4	39472.1	-180.842
251	00:41:00	-0.2654	00:50:00	-12.8161	39476.5	-8980.5	40485.1	39476.1	-182.859
253	00:25:00	-0.2398	00:34:00	-12.8427	39442.6	-8992.1	40454.6	39442.3	-165.079
253	00:40:00	-0.2437	00:45:00	-12.8383	39446.3	-8989.7	40457.7	39445.9	-167.779
258	00:27:00	-0.2804	00:39:00	-12.8189	39467.5	-8980.5	40476.3	39467.0	-193.149
258	00:47:00	-0.2823	00:55:00	-12.8165	39470.2	-8979.4	40478.7	39469.7	-194.471
260	00:31:00	-0.2756	00:37:00	-12.8046	39435.4	-8962.8	40441.1	39434.9	-189.689
260	00:43:00	-0.2800	00:49:00	-12.8033	39440.6	-8963.1	40446.2	39440.1	-192.742
265	00:11:00	-0.2806	00:18:00	-12.8246	39470.7	-8985.3	40480.6	39470.2	-193.303
265	00:25:00	-0.2913	00:35:00	-12.8189	39474.5	-8982.1	40483.5	39474.0	-200.693
267	00:38:00	-0.2682	00:50:00	-12.8098	39470.1	-8974.5	40477.5	39469.7	-184.758
267	00:56:00	-0.2708	01:02:00	-12.8017	39473.3	-8969.3	40479.5	39472.9	-186.564
274	00:35:00	-0.2923	00:45:00	-12.8118	39465.3	-8974.9	40473.0	39464.8	-201.335
279	01:06:00	-0.3000	01:16:00	-12.7933	39494.0	-8968.0	40499.4	39493.5	-206.789
279	01:23:00	-0.2914	01:30:00	-12.7871	39498.9	-8964.6	40503.4	39498.4	-200.886
286	07:55:00	-0.2521	08:07:00	-12.8239	39428.1	-8975.1	40436.7	39427.7	-173.482
286	08:17:00	-0.2647	08:27:00	-12.8221	39426.2	-8973.4	40434.5	39425.8	-182.144
288	00:21:00	-0.2837	00:29:00	-12.8187	39471.4	-8981.3	40480.3	39470.9	-195.442
288	00:36:00	-0.2858	00:41:00	-12.8162	39472.9	-8979.8	40481.4	39472.4	-196.896
293	00:37:00	-0.3025	00:44:00	-12.8204	39468.1	-8981.7	40477.2	39467.5	-208.376
293	00:51:00	-0.3056	00:58:00	-12.8171	39473.0	-8980.4	40481.6	39472.4	-210.537
300	01:10:00	-0.2854	01:19:00	-12.8187	39494.5	-8986.5	40504.0	39494.0	-196.728
300	01:29:00	-0.2883	01:36:00	-12.8142	39499.7	-8984.4	40508.6	39499.2	-198.753
302	00:45:00	-0.3169	00:55:00	-12.8076	39493.2	-8978.2	40500.9	39492.6	-218.434
302	01:02:00	-0.3155	01:08:00	-12.8075	39497.3	-8979.0	40505.0	39496.7	-217.491
307	01:37:00	-0.2900	01:45:00	-12.8096	39480.2	-8976.6	40487.9	39479.7	-199.826
307	01:50:00	-0.2916	01:56:00	-12.8146	39478.4	-8979.8	40486.8	39477.9	-200.920
309	00:14:00	-0.3052	00:20:00	-12.8292	39433.5	-8980.2	40443.1	39432.9	-210.051
309	00:25:00	-0.3046	00:30:00	-12.8321	39433.6	-8982.3	40443.7	39433.0	-209.639
314	00:16:00	-0.2754	00:24:00	-12.8254	39444.4	-8980.0	40453.7	39443.9	-189.594
316	00:39:00	-0.2736	00:46:00	-12.8085	39471.8	-8973.9	40479.1	39471.3	-188.486
316	00:52:00	-0.2716	00:57:00	-12.8087	39475.9	-8975.0	40483.3	39475.5	-187.127
321	00:33:00	-0.3091	00:37:00	-12.8137	39458.7	-8974.8	40466.5	39458.1	-212.871
321	00:44:00	-0.3116	00:49:00	-12.8125	39455.2	-8973.0	40462.7	39454.6	-214.574
323	01:21:00	-0.2911	01:31:00	-12.8126	39481.8	-8979.2	40490.0	39481.3	-200.592
323	01:41:00	-0.2909	01:52:00	-12.8102	39489.6	-8979.2	40497.6	39489.1	-200.494
328	00:34:00	-0.2968	00:43:00	-12.8075	39461.4	-8970.9	40468.3	39460.9	-204.415
328	00:50:00	-0.2991	00:57:00	-12.8025	39466.3	-8968.3	40472.4	39465.8	-206.024
330	00:16:00	-0.2821	00:24:00	-12.8278	39463.9	-8986.1	40474.1	39463.4	-194.303
330	00:29:00	-0.2821	00:35:00	-12.8298	39465.2	-8987.9	40475.7	39464.7	-194.309

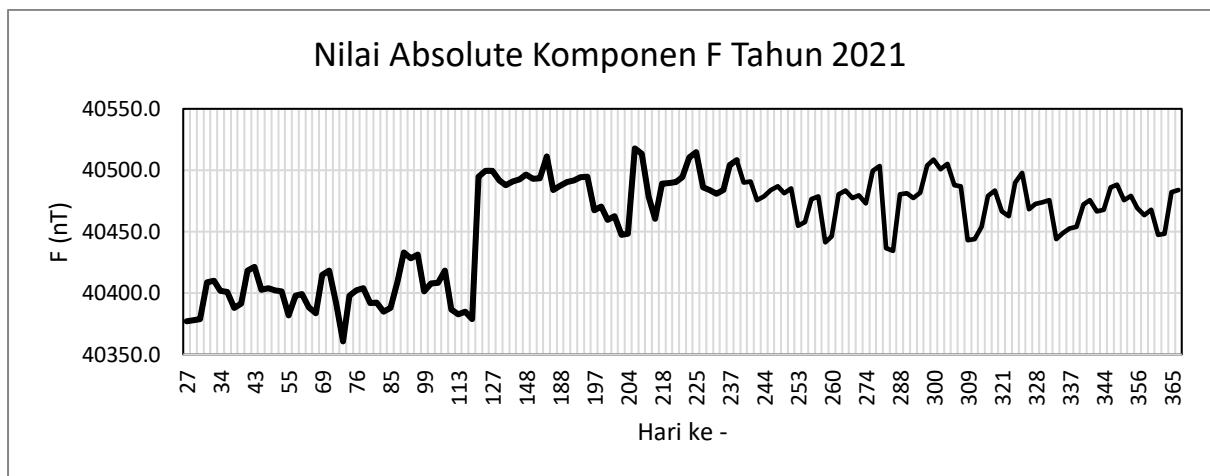
335	00:32:00	-0.2876	00:40:00	-12.8324	39434.0	-8982.6	40444.1	39433.5	-197.941
335	00:47:00	-0.3014	00:54:00	-12.8296	39438.8	-8981.7	40448.6	39438.3	-207.464
337	00:21:00	-0.3116	00:29:00	-12.8289	39442.9	-8982.1	40452.6	39442.3	-214.507
337	00:34:00	-0.3137	00:38:00	-12.8308	39443.7	-8983.7	40453.8	39443.1	-215.957
342	00:21:00	-0.3116	00:27:00	-12.8004	39466.3	-8966.8	40472.1	39465.7	-214.634
342	00:34:00	-0.3141	00:42:00	-12.7990	39470.1	-8966.7	40475.8	39469.5	-216.377
344	00:17:00	-0.3071	00:23:00	-12.8092	39459.3	-8971.6	40466.3	39458.7	-211.497
344	00:30:00	-0.3073	00:36:00	-12.8037	39461.7	-8968.2	40467.9	39461.1	-211.648
349	00:16:00	-0.3021	00:25:00	-12.8172	39477.4	-8981.5	40486.2	39476.9	-208.149
349	00:34:00	-0.3041	00:44:00	-12.8125	39480.3	-8978.8	40488.4	39479.7	-209.543
351	00:25:00	-0.3216	00:32:00	-12.8057	39469.1	-8971.3	40475.8	39468.5	-221.538
351	00:38:00	-0.3208	00:44:00	-12.8021	39472.7	-8969.5	40479.0	39472.1	-221.007
356	00:14:00	-0.3025	00:44:00	-12.8021	39462.8	-8967.2	40468.9	39462.3	-208.348
358	00:43:00	-0.3021	00:50:00	-12.8050	39457.1	-8968.0	40463.4	39456.6	-208.042
358	00:58:00	-0.2989	01:03:00	-12.8042	39461.4	-8968.4	40467.7	39460.9	-205.861
363	00:28:00	-0.2929	00:36:00	-12.8131	39440.1	-8970.1	40447.3	39439.6	-201.620
363	00:43:00	-0.2906	00:49:00	-12.8058	39442.2	-8965.3	40448.2	39441.7	-200.047
365	00:14:00	-0.2950	00:21:00	-12.8137	39474.1	-8978.3	40482.3	39473.6	-203.240
365	00:27:00	-0.2908	00:33:00	-12.8150	39475.7	-8979.5	40484.1	39475.2	-200.355



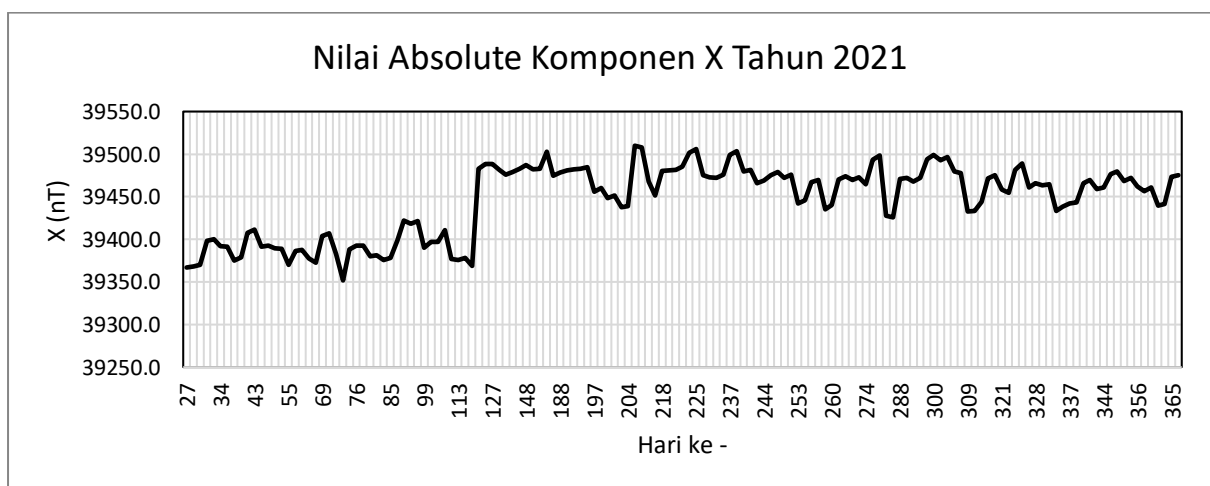
Gambar 15 Grafik nilai absolut komponen H - *horizontal* tahun 2021



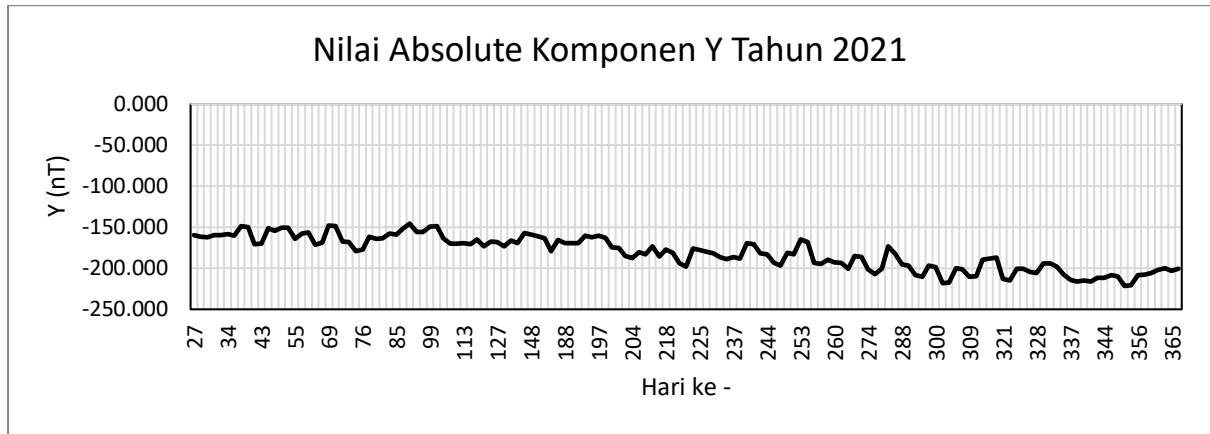
Gambar 16 Grafik nilai absolut komponen Z - *vertical* tahun 2021



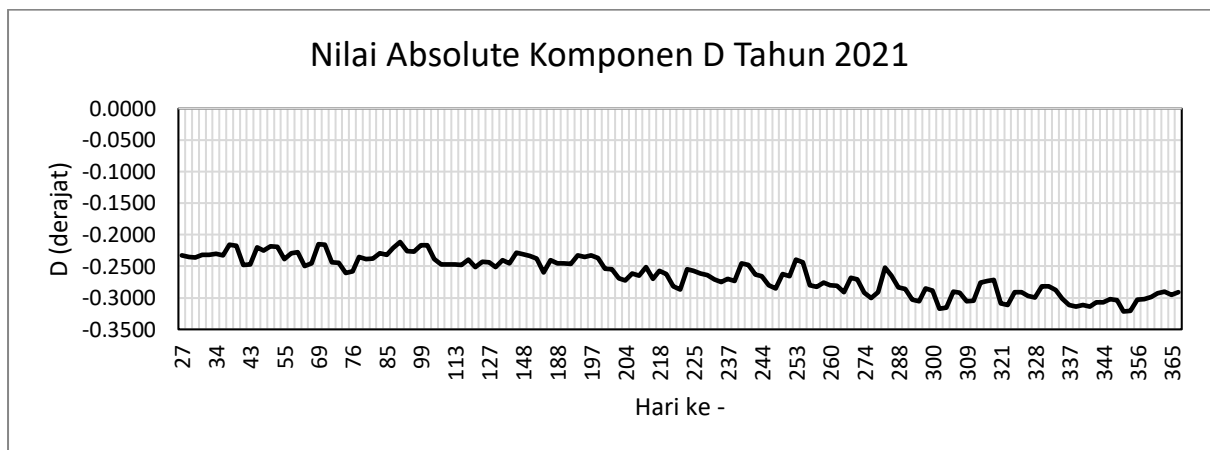
Gambar 17 Grafik nilai absolut komponen F - *total* tahun 2021



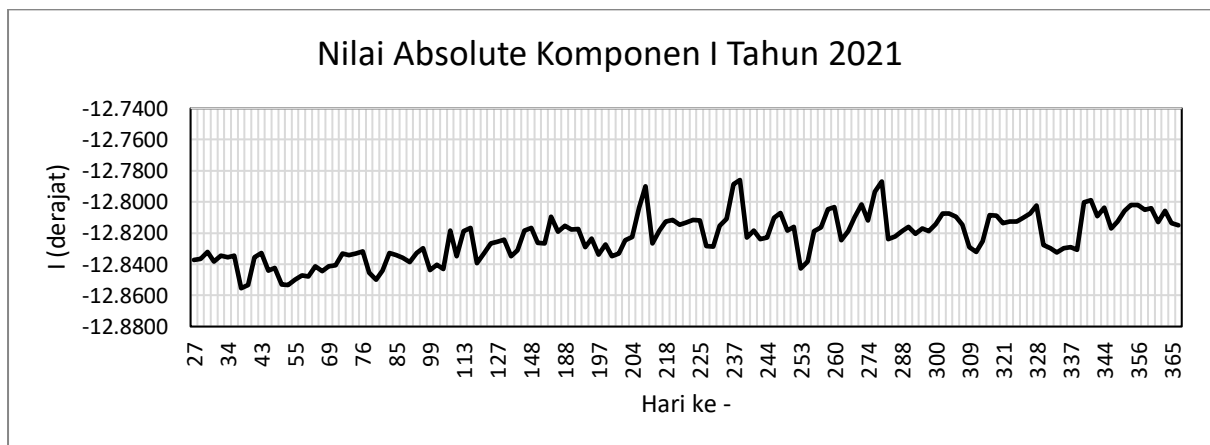
Gambar 18 Grafik nilai absolut komponen X - *north* tahun 2021



Gambar 19 Grafik nilai absolut komponen Y - east tahun 2021



Gambar 20 Grafik nilai absolut komponen D - *declination* tahun 2021



Gambar 21 Grafik nilai absolut komponen I - *inclination* tahun 2021

IV. NILAI VARIASI HARIAN DAN GANGGUAN BADAI MAGNET

A. Januari 2021

1. Nilai variasi harian bulan Januari 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39356.2	39371.6	39379.2	39380.3	39379.8	39371.4	39356.9	39343.0	39334.2	39332.5	39333.9	39335.1	39335.0	39334.8	39333.2	39331.4	39333.8	39333.8	39333.7	39335.3	39333.7	39332.9	39340.1	39348.6	39345.8
2	39358.0	39368.8	39372.4	39374.4	39370.7	39364.8	39355.3	39345.6	39340.0	39337.5	39337.4	39337.8	39339.1	39338.7	39338.2	39337.8	39338.1	39338.0	39338.6	39338.0	39338.8	39339.7	39349.0	39359.6	39348.2
3	39373.0	39388.1	39391.5	39383.7	39370.3	39357.9	39344.5	39334.6	39333.0	39336.5	39339.7	39338.5	39337.8	39337.2	39337.9	39338.9	39340.4	39338.4	39338.9	39339.9	39339.5	39340.9	39348.6	39358.8	39349.5
4	39368.9	39380.7	39390.6	39391.2	39379.1	39362.3	39347.4	39337.5	39333.7	39332.6	39333.9	39334.7	39335.2	39335.3	39335.8	39335.6	39337.3	39338.7	39340.7	39342.3	39343.0	39346.4	39356.6	39365.5	39350.2
5	39373.6	39385.4	39385.5	39386.4	39376.6	39360.7	39348.1	39341.4	39341.0	39343.2	39343.7	39350.8	39357.4	39345.7	39324.8	39319.6	39323.5	39331.1	39331.7	39332.5	39332.4	39337.5	39348.8	39355.0	39349.0
6	39361.6	39376.4	39383.2	39383.4	39358.6	39345.3	39341.6	39332.5	39317.2	39317.7	39320.0	39326.7	39322.6	39316.5	39315.2	39317.2	39322.8	39327.4	39328.6	39325.6	39324.9	39326.7	39332.9	39347.1	39336.3
7	39360.4	39373.6	39378.0	39370.5	39359.8	39353.6	39345.4	39332.6	39322.6	39324.1	39326.7	39327.2	39327.4	39326.2	39327.1	39330.1	39331.1	39331.7	39333.0	39329.7	39328.0	39328.4	39332.6	39339.2	39339.1
8	39347.4	39359.1	39369.5	39373.7	39374.2	39368.3	39356.4	39342.1	39335.3	39334.6	39333.7	39334.0	39334.8	39334.4	39332.2	39331.2	39332.2	39333.7	39335.6	39336.1	39335.9	39336.4	39336.9	39338.2	39343.6
9	39345.9	39359.4	39370.4	39369.7	39362.7	39357.8	39350.1	39341.0	39335.5	39333.3	39334.7	39335.7	39336.2	39334.8	39332.9	39332.7	39333.8	39335.4	39336.0	39335.4	39335.9	39335.8	39337.3	39340.1	39342.6
10	39346.5	39359.8	39372.2	39377.2	39375.5	39366.9	39354.9	39343.6	39341.3	39339.3	39339.1	39336.0	39332.4	39332.2	39331.7	39332.0	39330.1	39329.8	39331.0	39334.3	39336.8	39337.2	39334.8	39334.8	39343.7
11	39339.7	39352.7	39365.4	39370.5	39366.2	39361.6	39352.7	39342.0	39337.0	39344.0	39353.8	39355.5	39353.2	39346.9	39328.0	39293.5	39293.4	39304.7	39305.2	39309.7	39318.3	39318.5	39313.0	39308.4	39334.7
12	39309.4	39318.0	39332.2	39335.3	39337.8	39333.4	39330.0	39324.8	39319.9	39316.7	39313.7	39315.5	39315.0	39313.6	39315.4	39316.0	39318.0	39321.0	39322.2	39324.0	39326.3	39328.4	39332.4	39339.7	39323.3
13	39353.2	39366.0	39374.7	39373.9	39362.0	39351.4	39343.8	39329.6	39322.0	39317.5	39311.7	39310.0	39310.2	39308.2	39310.2	39314.6	39317.3	39318.0	39318.8	39321.0	39325.9	39329.0	39334.1	39343.3	39331.9
14	39356.3	39366.5	39373.6	39374.6	39366.5	39361.4	39355.1	39344.5	39337.6	39335.8	39335.3	39333.5	39332.9	39333.3	39332.5	39333.4	39333.0	39335.3	39336.7	39337.2	39336.7	39340.5	39344.7	39349.0	39345.2
15	39355.0	39367.4	39378.6	39377.7	39366.6	39361.4	39354.0	39343.3	39336.3	39335.8	39337.4	39337.3	39337.0	39336.4	39335.2	39335.5	39341.5	39335.3	39333.8	39336.9	39339.1	39340.1	39341.9	39348.1	39346.3
16	39357.4	39372.4	39387.8	39386.0	39375.9	39367.0	39356.3	39356.3	39342.4	39339.2	39338.7	39339.3	39336.2	39335.5	39334.2	39332.9	39332.7	39330.6	39334.6	39333.5	39333.8	39333.9	39336.5	39344.0	39347.4
17	39356.0	39372.1	39384.4	39387.1	39373.8	39362.6	39352.6	39352.6	39338.3	39337.3	39336.8	39335.2	39335.0	39334.6	39333.6	39333.9	39335.6	39336.3	39337.8	39337.9	39338.8	39340.1	39339.4	39346.7	39347.4
18	39360.1	39372.8	39383.1	39386.7	39377.3	39377.3	39367.7	39354.2	39340.6	39339.0	39340.7	39340.0	39339.8	39339.9	39341.7	39341.8	39340.2	39341.5	39339.9	39339.6	39339.0	39334.4	39334.6	39342.1	39350.6
19	39354.1	39372.1	39379.4	39380.3	39368.3	39368.3	39360.1	39352.4	39334.7	39334.4	39335.6	39333.5	39325.2	39329.5	39333.5	39333.4	39332.5	39332.5	39334.1	39335.2	39336.4	39340.4	39341.1	39340.8	39345.3
20	39352.7	39374.1	39396.9	39402.7	39396.5	39396.5	39384.0	39365.7	39329.5	39327.9	39325.4	39325.7	39328.5	39326.3	39332.0	39333.1	39332.3	39332.9	39337.9	39335.8	39338.4	39338.6	39337.4	39340.0	39349.6
21	39348.4	39359.6	39373.0	39374.2	39367.7	39367.7	39363.8	39354.9	39343.5	39345.7	39340.6	39340.6	39339.6	39338.7	39337.8	39335.7	39338.0	39340.7	39341.1	39341.5	39341.2	39342.1	39343.1	39346.6	39348.6
22	39354.4	39369.5	39387.9	39394.1	39392.5	39392.5	39386.4	39371.7	39351.5	39348.0	39346.5	39345.8	39346.5	39344.3	39342.5	39343.8	39342.3	39342.6	39342.3	39342.3	39346.2	39345.2	39346.1	39350.6	39357.3
23	39360.4	39369.1	39378.8	39380.8	39374.7	39374.7	39365.0	39354.8	39344.5	39337.9	39332.0	39333.3	39335.1	39336.1	39336.6	39338.1	39338.7	39336.5	39339.3	39344.1	39345.2	39341.7	39336.0	39344.1	39349.1
24	39348.6	39360.2	39371.1	39376.3	39371.5	39371.5	39361.2	39354.5	39338.0	39339.4	39336.4	39334.0	39335.5	39336.6	39344.7	39345.8	39347.3	39346.0	39346.1	39345.0	39340.8	39337.7	39332.6	39335.8	39348.2
25	39344.2	39352.2	39364.3	39369.6	39365.8	39365.8	39364.7	39358.8	39307.3	39292.8	39289.8	39295.7	39306.3	39305.6	39304.7	39305.2	39305.9	39309.3	39316.3	39319.9	39323.7	39323.8	39325.7	39318.3	39326.5
26	39320.6	39333.7	39337.2	39339.3	39330.4	39330.4	39324.6	39317.6	39307.9	39305.7	39304.4	39303.2	39312.1	39306.6	39310.6	39313.9	39315.2	39316.7	39321.1	39319.4	39317.9	39319.0	39318.1	39316.1	39318.4
27	39319.9	39329.9	39332.8	39328.3	39327.4	39327.4	39326.4	39327.1	39326.2	39320.0	39315.0	39309.7	39311.0	39312.4	39314.6	39312.6	39316.1	39316.9	39317.2	39323.1	39325.4	39326.9	39329.8	39328.1	39321.9
28	39335.0	39338.2	39344.6	39349.8	39346.8	39346.8	39341.9	39333.7	39323.0	39321.8	39321.8	39321.5	39322.2	39322.5	39321.7	39321.8	39323.3	39324.3	39325.3	39325.9	39327.7	39328.5	39331.0	39339.5	39330.8
29	39349.3	39357.8	39363.4	39363.9	39360.0	39360.0	39354.3	39345.7	39329.2	39327.1	39327.4	39327.2	39327.0	39326.1	39325.6	39325.9	39323.8	39324.5	39325.4	39326.1	39328.0	39330.1	39332.0	39339.9	39337.5
30	39352.7	39365.3	39373.7	39370.9	39366.2	39366.2	39356.6	39346.7	39333.3	39332.4	39329.6	39329.1	39328.1	39325.7	39325.7	39326.1	39328.2	39328.7	39328.6	39330.4	39332.2	39333.5	39335.9	39345.9	39341.3
31	39356.8	39369.6	39380.8	39386.1	39381.2	39371.3	39358.7	39346.9	39338.6	39337.0	39338.5	39337.9	39338.5	39338.9	39339.7	39339.3	39339.0	39339.6	39340.3	39341.2	39341.7	39342.3	39345.1	39353.1	39350.1
HOURLY MEANS	39350.8	39363.3	39372.8	39374.2	39367.2	39362.1	39353.6	39344.3	39332.7	39331.2	39330.8	39331.0	39331.4	39330.1	39329.3	39328.5	39329.6	39330.7	39331.9	39332.9	39333.9	39334.7	39337.0	39342.2	39341.9

Tabel 5 Nilai variasi harian komponen Z - *vertical* (nT) Januari 2021

Tondano Magnetic Observatory

Januari 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-9024.7	-9022.8	-9015.3	-9008.4	-9013.5	-9016.6	-9019.3	-9024.9	-9024.9	-9028.2	-9029.5	-9029.8	-9030.1	-9030.1	-9030.1	-9030.8	-9032.3	-9033.0	-9033.2	-9033.9	-9032.0	-9031.9	-9030.7	-9029.9	-9026.5
2	-9027.6	-9021.2	-9013.3	-9016.6	-9025.1	-9027.3	-9034.1	-9036.7	-9036.7	-9032.3	-9033.1	-9032.0	-9031.0	-9030.4	-9030.5	-9031.3	-9031.4	-9032.1	-9032.7	-9032.5	-9032.9	-9031.1	-9033.1	-9038.3	-9030.1
3	-9043.7	-9037.7	-9030.5	-9025.9	-9026.1	-9028.0	-9024.2	-9024.7	-9024.7	-9032.5	-9034.4	-9032.2	-9032.1	-9031.1	-9031.3	-9031.4	-9032.2	-9031.8	-9032.3	-9032.3	-9031.7	-9031.0	-9028.5	-9029.5	-9030.8
4	-9030.2	-9026.4	-9024.3	-9024.0	-9025.0	-9026.8	-9028.7	-9031.3	-9031.3	-9031.2	-9034.0	-9033.4	-9032.6	-9031.3	-9031.0	-9030.9	-9032.4	-9033.1	-9033.2	-9032.2	-9032.0	-9030.6	-9029.1	-9032.5	-9030.3
5	-9035.8	-9034.6	-9031.0	-9028.7	-9026.2	-9029.4	-9032.1	-9031.2	-9031.2	-9031.4	-9032.3	-9034.2	-9033.5	-9030.9	-9027.8	-9030.3	-9034.5	-9034.8	-9032.9	-9032.1	-9032.1	-9031.8	-9030.7	-9031.2	-9031.7
6	-9036.2	-9033.6	-9021.9	-9012.4	-9017.2	-9022.7	-9032.3	-9034.6	-9034.6	-9034.2	-9035.4	-9034.5	-9034.2	-9032.7	-9035.1	-9036.7	-9038.9	-9036.3	-9033.9	-9033.8	-9033.5	-9032.2	-9031.4	-9033.0	-9031.7
7	-9033.8	-9034.8	-9031.5	-9031.0	-9026.5	-9025.5	-9030.5	-9031.7	-9031.7	-9030.8	-9031.6	-9030.5	-9032.3	-9031.7	-9032.8	-9033.5	-9033.2	-9032.6	-9033.0	-9032.6	-9034.0	-9034.3	-9033.6	-9033.2	-9031.9
8	-9034.7	-9037.5	-9030.4	-9023.6	-9022.7	-9023.8	-9024.0	-9024.7	-9024.7	-9027.0	-9028.8	-9029.6	-9030.2	-9030.1	-9030.0	-9031.0	-9032.0	-9033.1	-9033.2	-9032.4	-9031.6	-9032.7	-9032.4	-9032.5	-9029.7
9	-9033.7	-9032.2	-9028.5	-9020.0	-9017.8	-9016.0	-9016.1	-9022.2	-9022.2	-9025.6	-9027.9	-9028.0	-9029.2	-9030.2	-9031.0	-9031.9	-9032.4	-9032.5	-9032.1	-9032.1	-9032.6	-9032.3	-9029.8	-9029.7	-9027.8
10	-9031.8	-9030.8	-9026.2	-9025.3	-9027.1	-9026.1	-9027.0	-9027.6	-9027.6	-9030.1	-9030.5	-9029.4	-9029.4	-9031.1	-9031.5	-9031.8	-9031.5	-9032.5	-9033.5	-9034.0	-9033.9	-9034.2	-9035.1	-9034.5	-9030.5
11	-9038.0	-9037.7	-9035.2	-9028.8	-9021.0	-9018.2	-9020.9	-9022.5	-9022.5	-9031.0	-9032.9	-9031.9	-9028.7	-9028.0	-9021.4	-9018.9	-9033.3	-9034.6	-9034.5	-9034.9	-9037.1	-9033.8	-9034.9	-9035.9	-9029.9
12	-9035.8	-9040.0	-9039.4	-9030.9	-9021.6	-9019.1	-9018.6	-9018.7	-9018.7	-9023.8	-9026.8	-9030.0	-9029.1	-9029.3	-9030.6	-9030.4	-9031.5	-9032.1	-9032.0	-9032.4	-9033.8	-9032.9	-9030.3	-9033.8	-9029.2
13	-9038.3	-9040.0	-9034.9	-9030.1	-9026.8	-9027.0	-9025.9	-9025.2	-9025.2	-9027.1	-9029.6	-9031.0	-9031.5	-9029.2	-9031.0	-9032.0	-9031.9	-9032.3	-9033.4	-9033.3	-9034.1	-9031.9	-9028.0	-9025.4	-9030.6
14	-9019.5	-9019.8	-9021.3	-9022.0	-9018.9	-9021.8	-9023.9	-9021.2	-9021.2	-9026.1	-9026.6	-9027.0	-9028.3	-9029.4	-9029.3	-9030.2	-9030.6	-9031.5	-9031.8	-9032.0	-9031.9	-9032.3	-9028.2	-9027.2	-9026.3
15	-9026.1	-9026.0	-9023.9	-9020.3	-9025.7	-9030.9	-9033.1	-9031.8	-9025.0	-9025.5	-9027.7	-9027.4	-9028.6	-9029.2	-9029.3	-9030.5	-9031.1	-9029.3	-9031.0	-9032.4	-9032.4	-9031.5	-9029.4	-9027.9	-9028.6
16	-9032.4	-9036.6	-9033.6	-9033.6	-9040.3	-9041.1	-9037.7	-9037.7	-9037.7	-9028.7	-9029.5	-9029.9	-9029.4	-9030.9	-9031.6	-9031.8	-9032.7	-9033.4	-9034.9	-9034.1	-9034.5	-9033.7	-9033.5	-9033.1	-9033.8
17	-9034.8	-9032.1	-9026.1	-9027.2	-9024.5	-9027.3	-9032.8	-9032.8	-9032.8	-9031.2	-9031.1	-9031.0	-9031.0	-9030.6	-9030.3	-9031.3	-9032.1	-9031.7	-9032.0	-9032.0	-9032.2	-9033.3	-9030.1	-9025.5	-9030.7
18	-9025.3	-9024.7	-9024.8	-9021.1	-9021.1	-9022.5	-9027.9	-9030.4	-9030.4	-9027.6	-9029.9	-9028.8	-9029.0	-9029.5	-9030.1	-9029.9	-9029.8	-9030.6	-9032.2	-9033.3	-9035.0	-9031.5	-9031.4	-9028.9	-9028.6
19	-9026.7	-9026.6	-9019.4	-9012.5	-9012.5	-9014.1	-9019.5	-9021.2	-9021.2	-9025.5	-9027.3	-9025.9	-9026.2	-9029.3	-9029.4	-9029.6	-9030.1	-9031.3	-9032.7	-9032.2	-9032.3	-9033.1	-9034.9	-9035.7	-9026.2
20	-9041.4	-9039.3	-9033.8	-9023.3	-9023.3	-9015.8	-9022.0	-9027.1	-9027.1	-9028.8	-9028.1	-9028.2	-9028.9	-9027.9	-9029.1	-9029.7	-9031.4	-9032.3	-9031.7	-9030.2	-9030.5	-9031.4	-9028.1	-9027.1	-9029.0
21	-9027.8	-9030.6	-9027.8	-9013.4	-9013.4	-9003.8	-9011.4	-9016.0	-9016.0	-9026.6	-9025.4	-9027.8	-9027.6	-9027.7	-9028.1	-9028.1	-9029.3	-9029.5	-9029.7	-9029.8	-9030.1	-9032.4	-9037.4	-9040.5	-9025.4
22	-9040.5	-9038.3	-9033.3	-9020.8	-9020.8	-9011.8	-9011.8	-9014.7	-9014.7	-9026.0	-9026.8	-9027.7	-9028.7	-9027.6	-9028.6	-9029.6	-9029.1	-9030.7	-9031.3	-9031.5	-9031.7	-9029.7	-9027.9	-9028.4	-9026.7
23	-9030.1	-9023.7	-9017.8	-9015.3	-9015.3	-9019.9	-9023.2	-9024.7	-9024.7	-9026.6	-9028.7	-9029.8	-9028.9	-9028.3	-9028.7	-9030.0	-9029.9	-9028.6	-9030.4	-9031.0	-9030.3	-9028.9	-9032.6	-9035.2	-9026.8
24	-9033.3	-9029.8	-9024.5	-9018.4	-9018.4	-9014.9	-9018.9	-9023.1	-9023.1	-9025.7	-9027.4	-9028.5	-9030.8	-9030.1	-9033.5	-9030.9	-9032.2	-9031.1	-9031.4	-9031.2	-9032.9	-9032.1	-9029.3	-9026.4	-9027.4
25	-9016.9	-9011.6	-9014.4	-9015.8	-9015.8	-9020.0	-9024.3	-9020.9	-9020.9	-9017.6	-9026.4	-9034.8	-9035.0	-9032.4	-9031.1	-9030.7	-9032.2	-9034.5	-9036.0	-9033.5	-9033.7	-9037.2	-9029.1	-9032.8	-9026.6
26	-9037.8	-9035.1	-9030.1	-9025.6	-9025.6	-9021.9	-9023.4	-9026.1	-9026.1	-9026.6	-9028.7	-9029.8	-9030.6	-9029.0	-9032.4	-9031.8	-9031.9	-9032.2	-9033.7	-9031.7	-9032.3	-9033.1	-9030.5	-9022.2	-9029.5
27	-9016.7	-9013.6	-9009.7	-9014.5	-9014.5	-9023.1	-9031.8	-9029.9	-9029.9	-9023.9	-9022.9	-9027.7	-9029.8	-9029.6	-9030.5	-9030.1	-9033.1	-9031.3	-9032.7	-9034.2	-9033.4	-9033.7	-9034.4	-9030.5	-9026.7
28	-9030.2	-9032.8	-9033.8	-9032.1	-9032.1	-9032.4	-9030.3	-9023.2	-9023.2	-9024.1	-9027.1	-9028.6	-9029.8	-9029.1	-9028.9	-9030.2	-9030.3	-9030.7	-9031.3	-9031.7	-9032.5	-9032.0	-9029.6	-9030.8	-9029.9
29	-9028.9	-9022.3	-9020.6	-9020.6	-9020.6	-9025.0	-9026.5	-9028.5	-9028.5	-9025.1	-9026.4	-9027.3	-9027.1	-9028.1	-9028.8	-9029.1	-9029.1	-9030.5	-9030.8	-9031.0	-9031.0	-9030.4	-9026.3	-9027.6	-9027.1
30	-9030.5	-9035.8	-9037.5	-9035.9	-9035.9	-9038.6	-9030.7	-9026.3	-9027.9	-9029.1	-9028.6	-9028.8	-9028.2	-9029.1	-9028.9	-9029.7	-9029.7	-9029.7	-9031.1	-9031.9	-9032.0	-9031.2	-9026.8	-9022.5	-9031.1
31	-9020.3	-9015.9	-9009.9	-9010.3	-9016.9	-9020.4	-9021.3	-9022.2	-9023.4	-9025.6	-9026.4	-9026.2	-9026.8	-9027.1	-9027.4	-9027.6	-9028.4	-9029.1	-9029.7	-9029.9	-9030.1	-9031.5	-9032.9	-9034.0	-9024.7
HOURLY MEANS	-9031.1	-9029.8	-9026.0	-9022.2	-9022.3	-9023.0	-9025.5	-9026.4	-9026.1	-9027.6	-9029.1	-9029.7	-9030.0	-9029.7	-9030.0	-9030.4	-9031.6	-9031.9	-9032.4	-9032.3	-9032.6	-9032.2	-9031.0	-9030.8	-9028.9

Tabel 6 Nilai variasi harian komponen F - total (nT) Januari 2021

Tondano Magnetic Observatory																								Januari 2021	
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	40377.7	40392.3	40398.0	40397.5	40398.1	40390.6	40377.1	40364.9	40356.2	40355.3	40357.0	40358.2	40358.2	40358.0	40356.4	40354.9	40357.6	40357.6	40357.6	40359.3	40357.4	40356.6	40363.3	40371.4	40368.0
2	40380.0	40389.1	40390.9	40393.5	40391.9	40386.6	40378.8	40370.0	40364.5	40361.2	40361.3	40361.4	40362.4	40361.9	40361.4	40361.2	40361.5	40361.5	40362.3	40361.7	40362.6	40363.0	40372.5	40384.0	40371.1
3	40398.2	40411.7	40413.3	40404.7	40391.8	40380.1	40366.2	40356.6	40355.0	40360.3	40363.7	40362.1	40361.4	40360.6	40361.3	40362.3	40363.9	40361.9	40362.5	40363.5	40363.0	40364.1	40371.1	40381.3	40372.5
4	40391.2	40401.9	40411.1	40411.7	40400.0	40384.1	40370.0	40360.9	40357.2	40356.1	40358.0	40358.6	40359.0	40358.7	40359.2	40358.9	40361.0	40362.5	40364.5	40365.8	40366.4	40369.4	40379.0	40388.5	40373.1
5	40397.1	40408.3	40407.7	40408.0	40397.9	40383.1	40371.4	40364.7	40364.3	40366.5	40367.1	40374.5	40380.8	40368.8	40347.7	40343.3	40348.0	40355.5	40355.6	40356.2	40356.1	40361.0	40371.8	40377.9	40372.2
6	40385.5	40399.3	40403.3	40401.4	40378.3	40366.5	40365.1	40356.8	40341.9	40342.3	40344.8	40351.1	40347.1	40340.7	40340.0	40342.4	40348.2	40352.2	40352.9	40349.9	40349.1	40350.6	40356.5	40370.6	40359.9
7	40383.8	40396.8	40400.4	40393.0	40381.5	40375.3	40368.5	40356.3	40346.4	40347.7	40350.5	40350.7	40351.3	40349.9	40351.1	40354.2	40355.1	40355.6	40356.9	40353.6	40352.3	40352.7	40356.6	40363.0	40362.6
8	40371.4	40383.3	40391.9	40394.4	40394.7	40389.3	40377.7	40363.9	40357.3	40357.1	40356.6	40357.1	40358.1	40357.7	40355.5	40354.7	40355.9	40357.6	40359.4	40359.8	40359.4	40360.1	40360.6	40361.9	40366.5
9	40369.7	40382.4	40392.3	40389.7	40382.4	40377.3	40369.7	40362.3	40356.9	40355.5	40357.5	40358.4	40359.2	40358.0	40356.4	40356.4	40357.5	40359.1	40359.7	40359.1	40359.7	40359.5	40360.4	40363.1	40365.1
10	40369.8	40382.5	40393.6	40398.3	40397.1	40388.4	40376.9	40366.0	40363.8	40362.4	40362.2	40359.0	40355.5	40355.7	40355.3	40355.6	40353.7	40353.6	40355.1	40358.4	40360.8	40361.2	40359.1	40359.0	40366.8
11	40364.6	40377.2	40389.0	40392.5	40386.6	40381.5	40373.4	40363.3	40358.5	40367.2	40377.1	40378.5	40375.6	40369.4	40349.4	40315.3	40318.3	40329.7	40330.1	40334.6	40343.5	40343.0	40337.8	40333.5	40357.9
12	40334.5	40343.9	40357.6	40358.7	40359.0	40354.2	40350.7	40345.7	40340.9	40339.0	40336.8	40339.2	40338.5	40337.1	40339.2	40339.7	40342.0	40345.0	40346.2	40348.0	40350.5	40352.4	40355.7	40363.6	40346.6
13	40377.8	40390.6	40398.0	40396.1	40383.8	40373.6	40365.9	40351.9	40344.5	40340.5	40335.4	40334.1	40334.4	40331.9	40334.2	40338.8	40341.4	40342.1	40343.2	40345.3	40350.3	40352.8	40356.9	40365.3	40355.4
14	40376.6	40386.6	40393.8	40395.0	40386.4	40382.1	40376.4	40365.5	40358.8	40358.1	40357.8	40356.1	40355.7	40356.4	40355.6	40356.6	40356.4	40357.9	40358.9	40360.8	40360.3	40364.0	40367.2	40371.1	40367.3
15	40376.8	40388.8	40399.3	40397.6	40388.0	40384.1	40377.4	40366.7	40358.3	40357.9	40360.0	40359.8	40359.8	40359.4	40358.2	40358.8	40364.8	40358.3	40357.2	40360.6	40362.7	40363.5	40364.7	40370.5	40368.9
16	40380.5	40396.1	40410.4	40408.7	40400.4	40391.8	40380.7	40380.7	40367.1	40362.0	40361.7	40362.3	40359.2	40358.9	40357.8	40356.5	40356.6	40354.7	40358.9	40357.7	40358.0	40357.9	40360.5	40367.7	40371.1
17	40379.7	40394.9	40405.4	40408.4	40394.8	40384.5	40375.9	40375.9	40362.0	40360.7	40360.2	40358.6	40358.4	40357.9	40356.9	40357.4	40359.3	40359.8	40361.4	40361.5	40362.3	40363.9	40362.6	40368.5	40370.5
18	40381.6	40393.9	40404.0	40406.6	40397.5	40397.8	40389.6	40377.0	40363.7	40361.5	40363.7	40362.8	40362.6	40362.8	40364.7	40364.8	40363.2	40364.7	40363.4	40363.4	40363.2	40357.9	40358.1	40364.8	40373.1
19	40376.0	40393.5	40399.1	40398.4	40386.8	40387.1	40380.3	40373.2	40355.9	40356.6	40358.2	40355.8	40347.8	40352.6	40356.6	40356.5	40355.8	40356.1	40357.9	40358.9	40360.1	40364.1	40365.2	40365.1	40367.4
20	40378.0	40398.4	40419.4	40422.7	40416.7	40415.0	40404.1	40387.5	40352.2	40351.0	40348.4	40348.7	40351.6	40349.2	40355.0	40356.2	40355.8	40356.6	40361.4	40359.0	40361.6	40362.0	40360.1	40362.4	40372.2
21	40370.7	40382.3	40394.8	40392.7	40386.4	40384.2	40382.0	40374.5	40363.4	40367.9	40362.6	40363.1	40362.1	40361.3	40360.5	40358.4	40360.9	40363.6	40364.0	40364.5	40364.3	40365.7	40367.8	40371.8	40370.4
22	40379.5	40393.6	40410.5	40413.8	40412.2	40410.2	40404.2	40390.6	40370.9	40369.9	40368.6	40368.2	40369.1	40366.7	40365.1	40366.7	40365.1	40365.8	40365.5	40365.7	40369.4	40368.1	40368.5	40373.0	40379.2
23	40382.9	40390.0	40398.2	40399.5	40393.5	40394.6	40385.9	40376.3	40366.3	40360.2	40355.0	40356.5	40358.0	40358.9	40359.5	40361.2	40361.8	40359.3	40362.4	40367.3	40368.2	40364.5	40359.8	40368.3	40371.2
24	40372.2	40382.7	40392.1	40395.9	40391.2	40390.4	40381.3	40375.7	40359.5	40361.5	40358.9	40356.9	40358.8	40359.8	40368.4	40368.9	40370.7	40369.2	40369.3	40368.2	40364.4	40361.3	40355.7	40358.2	40370.5
25	40364.2	40370.8	40383.3	40388.8	40385.0	40386.0	40385.8	40379.4	40329.2	40314.3	40313.3	40321.0	40331.4	40330.1	40328.9	40329.3	40330.4	40334.1	40341.3	40344.3	40348.0	40348.9	40349.0	40342.5	40349.1
26	40345.9	40358.1	40360.4	40361.4	40352.7	40351.9	40346.5	40340.3	40330.9	40328.9	40328.0	40327.1	40336.0	40330.3	40334.9	40338.0	40339.4	40340.8	40345.4	40343.4	40342.0	40343.3	40341.9	40338.0	40341.9
27	40340.5	40349.5	40351.5	40348.2	40347.4	40349.3	40350.2	40350.5	40349.6	40342.2	40337.1	40333.0	40334.8	40336.1	40338.4	40336.4	40340.5	40340.8	40341.4	40347.6	40349.5	40351.1	40354.1	40351.6	40344.6
28	40358.2	40361.9	40368.4	40373.1	40370.2	40370.2	40365.0	40355.4	40344.9	40344.0	40344.7	40344.7	40345.7	40345.8	40344.9	40345.4	40346.9	40347.9	40349.0	40349.7	40351.6	40352.3	40354.2	40362.8	40354.0
29	40371.8	40378.7	40383.7	40384.3	40380.5	40381.5	40376.2	40368.3	40352.2	40349.4	40350.0	40350.0	40349.7	40349.1	40348.7	40349.1	40347.0	40348.0	40349.0	40349.7	40351.6	40353.5	40354.5	40362.4	40360.0
30	40375.6	40389.0	40397.6	40394.5	40389.9	40390.5	40381.2	40369.7	40355.7	40355.2	40352.7	40352.1	40351.2	40348.7	40348.9	40349.3	40351.5	40352.0	40352.2	40354.1	40355.9	40357.0	40358.3	40367.2	40364.6
31	40377.2	40388.7	40398.4	40403.6	40400.3	40391.4	40379.3	40368.0	40360.2	40359.1	40360.8	40360.2	40360.9	40361.3	40362.2	40361.8	40361.7	40362.5	40363.3	40364.2	40364.7	40365.6	40368.7	40376.7	40371.7
HOURLY MEANS	40373.8	40385.7	40394.1	40394.6	40387.8	40383.0	40375.3	40366.4	40355.1	40353.9	40353.9	40354.2	40354.7	40353.3	40352.7	40351.9	40353.3	40354.4	40355.7	40356.6	40357.7	40358.4	40360.4	40365.3	40364.7

Tabel 7 Nilai variasi harian komponen X - north (nT) Januari 2021

Tondano Magnetic Observatory

Januari 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39354.6	39370.0	39377.6	39378.6	39377.9	39369.5	39354.9	39341.1	39332.2	39330.6	39332.0	39333.2	39333.2	39333.0	39331.3	39329.6	39332.0	39331.9	39331.9	39333.4	39331.9	39331.2	39338.4	39347.0	39344.0
2	39356.2	39367.0	39370.6	39372.4	39368.8	39362.9	39353.4	39343.7	39338.1	39335.7	39335.6	39335.9	39337.3	39336.9	39336.4	39336.0	39336.3	39336.1	39336.8	39336.2	39337.1	39338.0	39347.3	39358.0	39346.4
3	39371.3	39386.5	39389.8	39381.8	39368.4	39355.9	39342.6	39332.8	39331.2	39334.7	39337.8	39336.7	39335.9	39335.4	39336.1	39337.1	39338.6	39336.6	39337.1	39338.1	39337.8	39339.2	39347.0	39357.2	39347.7
4	39367.1	39378.9	39388.8	39389.3	39377.1	39360.3	39345.4	39335.6	39331.8	39330.8	39332.0	39332.8	39333.4	39333.4	39334.0	39333.8	39335.5	39336.9	39338.9	39340.5	39341.2	39344.7	39355.0	39363.9	39348.4
5	39371.9	39383.7	39383.8	39384.6	39374.8	39358.7	39346.1	39339.5	39339.2	39341.4	39341.8	39348.9	39355.5	39343.8	39322.9	39317.8	39321.7	39329.3	39329.9	39330.7	39330.7	39335.8	39347.2	39353.3	39347.2
6	39359.8	39374.5	39381.4	39381.6	39356.7	39343.4	39339.6	39330.6	39315.4	39315.8	39318.1	39324.9	39320.8	39314.7	39313.4	39315.4	39320.9	39325.6	39326.8	39323.8	39323.1	39325.0	39331.3	39345.5	39334.5
7	39358.7	39371.8	39376.2	39368.7	39357.9	39351.6	39343.5	39330.7	39320.7	39322.2	39324.9	39325.4	39325.5	39324.3	39325.3	39328.3	39329.3	39329.9	39331.1	39327.9	39326.2	39326.6	39330.9	39337.6	39337.3
8	39345.9	39357.5	39367.9	39372.0	39372.4	39366.5	39354.5	39340.1	39333.4	39332.7	39331.9	39332.1	39333.0	39332.6	39330.4	39329.4	39330.4	39331.9	39333.7	39334.3	39334.1	39334.6	39335.2	39336.6	39341.8
9	39344.3	39357.8	39368.8	39368.0	39360.9	39355.9	39348.2	39339.1	39333.5	39331.4	39332.8	39333.8	39334.3	39332.9	39331.1	39330.9	39331.9	39333.6	39334.2	39333.6	39334.1	39334.0	39335.6	39338.5	39340.8
10	39344.8	39358.1	39370.4	39375.4	39373.7	39365.0	39353.1	39341.8	39339.5	39337.4	39337.2	39334.1	39330.5	39330.4	39329.8	39330.1	39328.2	39327.9	39329.2	39332.5	39335.0	39335.3	39333.0	39333.0	39341.9
11	39338.0	39351.0	39363.7	39368.7	39364.4	39359.8	39351.0	39340.2	39335.2	39342.1	39351.8	39353.5	39351.3	39345.1	39326.2	39291.8	39291.6	39303.0	39303.5	39308.0	39316.6	39316.8	39311.3	39306.7	39333.0
12	39307.8	39316.4	39330.6	39333.6	39336.0	39331.5	39327.9	39322.7	39317.9	39314.9	39311.9	39313.7	39313.1	39311.7	39313.6	39314.2	39316.3	39319.2	39320.4	39322.2	39324.5	39326.7	39330.7	39338.1	39321.5
13	39351.6	39364.3	39373.0	39372.2	39360.2	39349.5	39341.9	39327.7	39320.1	39315.7	39309.8	39308.2	39308.4	39306.4	39308.4	39312.8	39315.5	39316.3	39317.1	39319.2	39324.2	39327.3	39332.5	39341.8	39330.2
14	39354.7	39364.8	39371.8	39372.7	39364.7	39359.5	39353.1	39342.5	39335.7	39333.9	39333.5	39331.7	39331.0	39331.5	39330.7	39331.6	39331.2	39332.6	39333.6	39335.5	39335.0	39338.7	39343.0	39347.3	39343.4
15	39353.3	39365.6	39376.8	39375.9	39364.7	39359.4	39352.0	39341.3	39334.4	39333.9	39335.6	39335.4	39335.1	39334.6	39333.4	39333.8	39339.7	39333.6	39332.0	39335.1	39337.3	39338.4	39340.2	39346.5	39344.5
16	39355.7	39370.8	39386.1	39384.3	39374.0	39365.0	39354.3	39354.3	39340.5	39337.4	39336.9	39337.5	39334.4	39333.7	39332.4	39331.1	39331.0	39328.8	39332.8	39331.7	39332.0	39332.1	39334.8	39342.4	39345.6
17	39354.4	39370.6	39382.9	39385.6	39372.2	39360.8	39350.7	39350.7	39336.4	39335.4	39334.9	39333.3	39333.1	39332.8	39331.8	39332.1	39333.8	39334.5	39336.0	39336.1	39337.0	39338.3	39337.7	39345.0	39345.7
18	39358.4	39371.2	39381.5	39385.0	39375.6	39375.5	39365.8	39352.2	39338.6	39337.1	39338.8	39338.1	39337.9	39338.1	39339.9	39340.1	39338.4	39339.8	39338.1	39337.8	39337.2	39332.6	39332.8	39340.4	39348.8
19	39352.3	39370.3	39377.7	39378.6	39366.7	39366.6	39358.3	39350.6	39332.8	39332.5	39333.7	39331.6	39323.4	39327.6	39331.7	39331.6	39330.7	39330.7	39332.3	39333.4	39334.6	39338.6	39339.3	39339.1	39343.5
20	39351.0	39372.4	39395.2	39401.0	39394.8	39394.8	39382.1	39363.8	39327.6	39325.9	39323.5	39323.9	39326.7	39324.4	39330.2	39331.3	39330.5	39331.1	39336.1	39334.0	39336.7	39336.9	39335.7	39338.3	39347.8
21	39346.6	39357.8	39371.3	39372.5	39366.0	39366.0	39361.9	39353.1	39341.6	39343.7	39338.6	39338.7	39337.7	39336.9	39336.0	39333.9	39336.2	39338.9	39339.3	39339.8	39339.5	39340.3	39341.3	39344.8	39346.8
22	39352.6	39367.7	39386.1	39392.3	39390.7	39390.7	39384.5	39369.8	39349.6	39346.1	39344.6	39344.0	39344.7	39342.5	39340.7	39342.1	39340.5	39340.9	39340.5	39340.6	39344.4	39343.5	39344.4	39348.9	39355.5
23	39358.6	39367.3	39377.0	39378.9	39372.8	39372.8	39363.1	39352.9	39342.6	39336.0	39330.1	39331.5	39333.3	39334.3	39334.8	39336.3	39336.9	39334.8	39337.5	39342.4	39343.5	39340.0	39334.3	39342.5	39347.3
24	39347.0	39358.6	39369.5	39374.7	39369.9	39369.8	39359.3	39352.6	39336.1	39337.6	39334.5	39332.2	39333.7	39334.8	39342.9	39344.1	39345.5	39344.3	39344.3	39343.2	39339.0	39336.0	39330.9	39334.2	39346.4
25	39342.5	39350.4	39362.6	39367.9	39364.1	39364.0	39362.8	39356.9	39305.4	39291.0	39288.0	39293.9	39304.5	39303.9	39303.0	39303.5	39304.2	39307.6	39314.5	39318.2	39321.9	39322.1	39324.1	39316.7	39324.7
26	39319.0	39332.1	39335.6	39337.5	39328.6	39328.5	39322.6	39315.6	39306.1	39303.9	39302.6	39301.4	39310.3	39304.9	39308.8	39312.2	39313.5	39314.9	39319.3	39317.7	39316.2	39317.3	39316.4	39314.5	39316.6
27	39318.3	39328.3	39331.3	39326.7	39325.8	39325.7	39324.5	39325.3	39324.4	39318.1	39313.2	39307.9	39309.2	39310.7	39312.8	39310.8	39314.4	39315.2	39315.5	39321.4	39323.6	39325.2	39328.1	39326.5	39320.1
28	39333.4	39336.6	39342.9	39348.1	39345.1	39345.0	39340.1	39331.8	39321.1	39320.0	39320.0	39319.7	39320.4	39320.7	39319.9	39320.0	39321.5	39322.6	39323.6	39324.2	39326.0	39326.8	39329.3	39337.9	39329.0
29	39347.7	39356.2	39361.7	39362.2	39358.3	39358.2	39352.4	39343.8	39327.3	39325.2	39325.6	39325.4	39325.2	39324.3	39323.8	39324.1	39322.0	39322.7	39323.7	39324.3	39326.3	39328.4	39330.4	39338.2	39335.7
30	39351.1	39363.6	39371.9	39369.1	39364.3	39364.2	39354.6	39344.7	39331.5	39330.6	39327.7	39327.3	39326.3	39323.9	39323.9	39324.3	39326.5	39326.9	39326.8	39328.6	39330.4	39331.8	39334.2	39344.4	39339.5
31	39355.3	39368.1	39379.4	39384.6	39379.5	39369.5	39356.8	39345.0	39336.7	39335.1	39336.6	39336.1	39336.7	39337.1	39337.9	39337.5	39337.2	39337.9	39338.6	39339.4	39339.9	39340.5	39343.3	39351.4	39348.3
HOURLY MEANS	39349.2	39361.6	39371.1	39372.4	39365.4	39360.2	39351.6	39342.3	39330.9	39329.3	39328.9	39329.1	39329.5	39328.3	39327.5	39326.7	39327.8	39328.9	39330.2	39331.1	39332.2	39333.0	39335.3	39340.5	39340.1

Tabel 8 Nilai variasi harian komponen Y - east (nT) Januari 2021

Tondano Magnetic Observatory																							Januari 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	357.7	360.5	359.6	363.8	379.3	386.8	393.2	393.7	390.9	385.7	385.6	383.5	382.0	379.7	378.0	377.2	376.4	377.0	377.3	377.3	374.8	371.0	362.6	360.7	376.4
2	367.1	373.9	381.4	389.3	387.9	386.1	384.6	384.5	382.5	383.4	386.1	385.2	383.1	381.1	380.0	379.0	378.1	378.0	377.6	376.0	374.3	369.3	363.6	361.2	378.9
3	363.0	361.8	364.5	377.4	393.2	400.4	393.6	379.4	375.7	380.0	384.0	383.5	382.4	380.2	378.9	377.8	377.3	376.4	375.3	373.8	372.1	366.8	356.4	358.1	376.3
4	367.5	373.7	376.6	385.4	392.9	398.7	398.4	392.7	385.8	382.8	385.1	385.0	383.5	380.6	378.0	376.2	376.2	376.8	376.7	375.0	373.4	367.1	355.4	356.2	379.2
5	363.0	365.4	367.6	375.1	384.6	396.5	398.2	389.1	381.3	382.9	384.2	385.6	385.9	386.2	382.1	379.4	377.7	374.9	372.6	369.5	367.3	361.9	353.4	359.1	376.8
6	375.8	381.1	380.0	374.2	379.2	385.1	392.0	390.2	383.9	382.0	381.7	377.3	377.1	376.1	375.6	376.4	379.4	378.7	376.9	376.3	374.8	367.7	356.1	353.3	377.1
7	362.7	374.7	373.8	370.6	377.5	390.4	394.4	388.9	382.8	381.0	381.4	378.8	379.5	378.2	378.5	378.3	378.5	377.7	377.7	376.8	376.3	373.4	367.3	358.3	377.4
8	353.9	356.2	359.9	362.1	375.7	382.2	388.6	389.1	385.1	381.5	381.8	381.3	380.5	379.7	378.3	378.3	378.0	378.7	378.9	377.9	375.7	373.8	365.5	359.2	375.1
9	354.5	352.0	351.0	364.9	379.5	388.1	383.9	386.6	387.9	386.0	385.5	383.3	382.1	381.2	379.9	378.8	378.3	378.0	377.1	376.7	375.4	373.3	366.4	361.7	375.5
10	365.8	371.8	371.6	377.3	385.1	385.9	378.4	375.6	376.3	382.0	382.0	380.2	379.5	379.8	379.3	378.4	377.8	378.0	378.1	377.4	377.0	378.5	376.8	370.7	377.6
11	368.3	369.9	372.9	375.9	375.1	374.0	373.0	373.6	379.6	386.1	390.0	389.7	386.8	383.0	375.5	365.5	366.3	363.0	363.8	362.8	365.1	365.5	365.2	360.5	373.0
12	356.7	357.7	360.9	367.0	375.5	391.3	400.8	400.6	393.4	384.2	381.5	381.3	379.1	376.8	375.9	374.1	373.8	372.9	371.3	370.3	370.7	369.3	362.3	357.2	375.2
13	357.9	360.9	363.8	364.1	380.3	388.6	389.6	388.6	388.1	384.1	384.3	382.7	380.5	375.8	374.7	373.8	372.8	372.0	372.6	371.5	370.8	366.7	356.0	350.2	373.8
14	351.5	364.6	375.0	381.6	381.3	385.6	390.6	390.8	389.6	386.6	384.2	381.9	380.2	379.2	377.2	375.7	374.6	373.8	372.5	371.5	370.8	369.2	362.1	361.7	376.3
15	365.1	369.2	373.7	375.7	384.5	394.1	393.2	392.5	388.6	383.9	382.9	381.5	379.2	377.1	375.9	375.3	373.8	373.4	372.5	372.6	372.8	371.4	367.0	359.1	377.3
16	357.5	357.8	365.4	372.6	385.1	394.2	395.0	395.0	386.0	381.2	379.2	377.7	376.0	375.3	375.7	375.8	374.7	374.8	375.0	374.8	374.4	372.5	366.3	355.5	375.7
17	350.2	343.9	336.6	344.4	355.1	372.1	382.8	382.8	387.7	384.9	382.9	381.4	379.0	376.5	375.2	374.4	374.6	374.8	375.0	374.8	375.0	376.2	371.9	363.8	370.7
18	360.2	356.4	362.8	370.6	370.5	378.1	389.5	395.5	389.3	384.3	383.8	381.3	379.4	377.5	375.9	374.2	372.9	371.8	373.2	374.3	376.8	374.4	372.3	368.8	375.6
19	368.7	373.0	372.2	360.4	360.3	367.0	377.7	381.4	389.7	388.0	385.8	382.0	379.7	377.6	376.1	375.6	375.6	376.6	377.3	377.6	377.3	376.8	373.2	363.2	375.5
20	359.9	361.2	362.1	369.7	369.7	373.7	381.4	389.6	386.1	388.8	386.9	382.1	379.2	377.4	374.2	372.8	374.4	375.4	373.9	372.2	371.1	371.0	364.4	364.4	374.2
21	369.5	374.5	370.6	364.3	364.2	368.2	377.9	381.6	390.3	392.3	387.3	383.6	379.9	378.9	377.2	375.3	374.2	373.2	372.4	371.1	370.5	373.2	377.5	376.6	376.0
22	376.6	377.7	374.8	375.4	375.4	381.4	388.4	391.1	390.7	385.7	384.1	381.4	379.1	376.8	374.7	373.6	372.2	372.1	372.3	371.3	370.6	367.4	360.9	360.6	376.4
23	369.7	378.2	382.6	383.6	383.5	384.7	389.3	389.7	386.6	384.8	385.5	382.8	378.7	376.4	375.1	374.4	372.9	370.8	368.9	367.9	367.3	367.3	367.6	360.9	377.1
24	358.4	355.3	357.6	358.2	358.1	370.0	386.4	392.0	384.7	380.4	378.5	378.2	377.6	375.7	375.3	373.6	373.8	373.1	372.0	372.0	374.4	373.3	365.9	357.9	371.8
25	358.6	366.3	368.9	371.2	371.2	376.5	385.6	390.5	389.2	377.1	372.3	375.8	375.6	374.3	370.6	366.6	366.9	368.7	370.7	368.9	369.5	372.6	358.8	354.5	371.7
26	355.7	354.8	359.1	369.3	369.2	386.2	397.0	397.6	379.6	373.2	373.8	374.4	371.3	371.3	372.0	370.6	370.4	371.3	372.5	371.5	371.2	370.6	362.7	351.9	371.6
27	352.1	353.8	349.4	355.0	355.0	370.4	381.0	379.6	383.0	383.2	377.0	376.3	375.6	373.0	371.8	370.3	371.0	369.1	369.1	370.0	370.7	371.1	366.3	356.6	368.8
28	349.7	351.9	359.5	368.2	368.1	377.3	382.4	381.7	378.3	375.3	376.6	376.6	375.6	373.7	372.2	372.4	372.0	371.8	371.8	371.7	371.5	369.9	363.4	359.3	370.4
29	355.6	356.2	356.2	362.9	362.9	375.3	384.7	382.7	382.5	382.8	380.7	379.6	376.9	376.1	375.2	373.8	372.8	372.3	371.4	370.6	369.4	366.9	360.4	359.6	371.1
30	360.1	365.9	373.8	381.7	381.6	391.0	395.0	393.4	377.1	376.8	379.4	378.2	377.4	375.6	374.0	373.0	372.5	371.7	372.0	371.6	370.9	367.6	356.4	347.1	374.3
31	344.4	342.9	340.6	350.9	366.4	376.9	382.1	385.6	385.7	386.5	383.8	380.8	378.3	376.2	374.1	372.3	371.6	371.2	371.1	371.3	371.7	374.6	374.6	363.7	370.7
HOURLY MEANS	360.6	363.3	365.3	369.8	375.1	383.1	388.0	387.9	385.1	383.2	382.5	381.1	379.4	377.6	376.0	374.6	374.2	373.8	373.5	372.8	372.4	370.7	364.5	359.7	374.8

Tabel 9 Nilai variasi harian komponen D – *declination* (menit) Januari 2021

Tondano Magnetic Observatory

Januari 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	31.26	31.49	31.40	31.77	33.13	33.79	34.36	34.41	34.18	33.72	33.71	33.54	33.40	33.20	33.05	32.98	32.91	32.96	32.99	32.99	32.77	32.44	31.70	31.53	32.90
2	32.08	32.66	33.31	34.00	33.89	33.73	33.61	33.61	33.44	33.52	33.75	33.67	33.49	33.32	33.22	33.14	33.05	33.05	33.02	32.88	32.73	32.29	31.78	31.56	33.12
3	31.71	31.59	31.82	32.96	34.35	34.99	34.41	33.17	32.85	33.22	33.57	33.53	33.43	33.24	33.13	33.03	32.99	32.91	32.81	32.68	32.53	32.07	31.15	31.30	32.89
4	32.10	32.64	32.88	33.65	34.31	34.84	34.82	34.33	33.74	33.47	33.67	33.66	33.53	33.28	33.05	32.89	32.89	32.94	32.93	32.79	32.64	32.09	31.06	31.12	33.14
5	31.70	31.91	32.10	32.75	33.59	34.65	34.80	34.01	33.33	33.47	33.59	33.70	33.72	33.75	33.41	33.18	33.04	32.78	32.58	32.31	32.11	31.64	30.89	31.39	32.93
6	32.83	33.29	33.19	32.68	33.13	33.67	34.26	34.12	33.58	33.42	33.39	32.99	32.98	32.90	32.86	32.93	33.19	33.12	32.96	32.91	32.78	32.16	31.14	30.88	32.97
7	31.70	32.73	32.65	32.38	32.98	34.12	34.47	34.01	33.48	33.33	33.36	33.13	33.19	33.08	33.10	33.08	33.10	33.03	33.02	32.95	32.91	32.66	32.12	31.33	33.00
8	30.93	31.12	31.44	31.62	32.81	33.39	33.96	34.01	33.67	33.36	33.38	33.34	33.27	33.20	33.08	33.08	33.06	33.11	33.13	33.04	32.85	32.68	31.95	31.40	32.79
9	30.99	30.76	30.66	31.88	33.16	33.92	33.55	33.80	33.92	33.75	33.71	33.51	33.41	33.33	33.22	33.13	33.08	33.05	32.97	32.94	32.83	32.64	32.03	31.62	32.83
10	31.98	32.49	32.46	32.96	33.63	33.71	33.07	32.83	32.90	33.39	33.40	33.24	33.18	33.21	33.17	33.09	33.04	33.06	33.06	33.00	32.96	33.09	32.95	32.41	33.01
11	32.20	32.33	32.58	32.84	32.77	32.68	32.60	32.66	33.19	33.75	34.08	34.05	33.80	33.47	32.84	31.99	32.06	31.76	31.83	31.74	31.94	31.97	31.95	31.54	32.61
12	31.21	31.29	31.56	32.09	32.83	34.21	35.05	35.04	34.41	33.61	33.37	33.35	33.17	32.96	32.88	32.73	32.69	32.62	32.47	32.38	32.42	32.29	31.68	31.23	32.81
13	31.28	31.53	31.78	31.81	33.23	33.97	34.06	33.98	33.94	33.60	33.62	33.48	33.29	32.88	32.78	32.70	32.61	32.54	32.59	32.49	32.43	32.07	31.13	30.61	32.68
14	30.72	31.86	32.76	33.34	33.31	33.70	34.13	34.16	34.06	33.80	33.60	33.39	33.25	33.15	32.98	32.85	32.76	32.69	32.57	32.48	32.42	32.28	31.66	31.62	32.90
15	31.90	32.26	32.64	32.81	33.59	34.43	34.36	34.31	33.98	33.57	33.48	33.36	33.15	32.97	32.87	32.81	32.67	32.65	32.57	32.58	32.59	32.47	32.08	31.38	32.98
16	31.24	31.26	31.90	32.54	33.63	34.44	34.51	34.51	33.74	33.33	33.15	33.02	32.87	32.81	32.85	32.86	32.77	32.77	32.79	32.77	32.74	32.57	32.02	31.07	32.84
17	30.61	30.04	29.40	30.07	31.02	32.51	33.46	33.46	33.90	33.65	33.48	33.34	33.14	32.92	32.80	32.74	32.75	32.77	32.79	32.76	32.78	32.89	32.51	31.80	32.40
18	31.48	31.14	31.68	32.36	32.36	33.02	34.03	34.57	34.04	33.60	33.55	33.34	33.17	33.00	32.86	32.71	32.60	32.50	32.62	32.72	32.94	32.73	32.55	32.24	32.82
19	32.22	32.58	32.51	31.47	31.47	32.06	33.00	33.33	34.07	33.93	33.73	33.40	33.21	33.02	32.88	32.84	32.84	32.93	32.99	33.02	32.99	32.94	32.63	31.75	32.83
20	31.45	31.55	31.61	32.27	32.27	32.62	33.31	34.04	33.76	34.00	33.84	33.42	33.16	33.01	32.72	32.59	32.74	32.82	32.69	32.54	32.44	32.43	31.86	31.86	32.71
21	32.29	32.72	32.37	31.82	31.82	32.16	33.02	33.35	34.12	34.29	33.86	33.54	33.21	33.13	32.98	32.81	32.72	32.62	32.55	32.44	32.39	32.63	33.00	32.92	32.87
22	32.91	33.00	32.72	32.78	32.78	33.30	33.92	34.17	34.14	33.71	33.57	33.34	33.14	32.94	32.75	32.66	32.54	32.53	32.55	32.46	32.39	32.12	31.55	31.52	32.89
23	32.30	33.04	33.41	33.50	33.50	33.60	34.02	34.05	33.79	33.65	33.71	33.47	33.11	32.91	32.80	32.73	32.60	32.42	32.25	32.16	32.11	32.11	32.14	31.55	32.96
24	31.32	31.05	31.24	31.28	31.28	32.32	33.76	34.26	33.63	33.26	33.09	33.07	33.01	32.84	32.80	32.66	32.67	32.62	32.52	32.52	32.73	32.64	31.99	31.29	32.49
25	31.35	32.02	32.23	32.43	32.43	32.89	33.69	34.12	34.06	33.01	32.59	32.89	32.87	32.75	32.43	32.07	32.11	32.25	32.43	32.26	32.32	32.59	31.38	31.01	32.51
26	31.11	31.02	31.40	32.28	32.28	33.77	34.72	34.78	33.22	32.66	32.71	32.76	32.49	32.49	32.55	32.42	32.40	32.48	32.58	32.49	32.47	32.41	31.73	30.78	32.50
27	30.80	30.94	30.55	31.05	31.05	32.39	33.32	33.20	33.49	33.52	32.98	32.93	32.86	32.63	32.53	32.39	32.45	32.29	32.28	32.37	32.42	32.45	32.03	31.19	32.25
28	30.57	30.77	31.42	32.18	32.18	32.98	33.43	33.37	33.09	32.83	32.94	32.94	32.85	32.69	32.55	32.57	32.54	32.52	32.52	32.50	32.49	32.35	31.77	31.41	32.39
29	31.08	31.12	31.12	31.71	31.71	32.79	33.62	33.45	33.45	33.48	33.29	33.20	32.96	32.89	32.82	32.69	32.61	32.56	32.48	32.41	32.30	32.09	31.52	31.43	32.45
30	31.48	31.97	32.65	33.34	33.34	34.16	34.52	34.39	32.98	32.95	33.18	33.07	33.01	32.85	32.71	32.62	32.58	32.51	32.53	32.50	32.43	32.15	31.16	30.34	32.73
31	30.09	29.95	29.74	30.65	31.99	32.93	33.39	33.70	33.72	33.79	33.56	33.29	33.07	32.89	32.70	32.55	32.49	32.45	32.44	32.46	32.49	32.75	32.75	31.78	32.40
HOURLY MEANS	31.51	31.74	31.91	32.30	32.77	33.48	33.91	33.91	33.67	33.50	33.45	33.32	33.17	33.02	32.88	32.76	32.73	32.69	32.66	32.60	32.56	32.41	31.87	31.45	32.76

Tabel 10 Nilai variasi harian komponen I – *inclination* (derajat) Januari 2021

Tondano Magnetic Observatory

Januari 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-12.92	-12.91	-12.90	-12.89	-12.90	-12.90	-12.91	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93
2	-12.92	-12.91	-12.90	-12.90	-12.92	-12.92	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.94	-12.93
3	-12.94	-12.93	-12.92	-12.91	-12.92	-12.92	-12.92	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93
4	-12.92	-12.92	-12.91	-12.91	-12.91	-12.92	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93
5	-12.93	-12.93	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93
6	-12.93	-12.93	-12.91	-12.90	-12.91	-12.92	-12.94	-12.94	-12.95	-12.95	-12.95	-12.94	-12.94	-12.94	-12.95	-12.95	-12.95	-12.95	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.94
7	-12.93	-12.93	-12.92	-12.92	-12.92	-12.92	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94
8	-12.94	-12.94	-12.92	-12.91	-12.91	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93
9	-12.94	-12.93	-12.92	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93
10	-12.93	-12.93	-12.92	-12.91	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93
11	-12.94	-12.94	-12.93	-12.92	-12.91	-12.91	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.93	-12.95	-12.95	-12.95	-12.95	-12.95	-12.95	-12.95	-12.95	-12.93
12	-12.95	-12.95	-12.95	-12.94	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94
13	-12.94	-12.94	-12.93	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.94
14	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93
15	-12.92	-12.92	-12.91	-12.91	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93
16	-12.93	-12.93	-12.92	-12.92	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94
17	-12.93	-12.93	-12.91	-12.91	-12.91	-12.92	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.92	-12.93
18	-12.92	-12.92	-12.91	-12.91	-12.91	-12.91	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93
19	-12.92	-12.92	-12.91	-12.90	-12.90	-12.90	-12.91	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.94	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93
20	-12.94	-12.94	-12.92	-12.90	-12.91	-12.90	-12.91	-12.92	-12.93	-12.94	-12.93	-12.94	-12.94	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.93	-12.93	-12.94	-12.93	-12.93	-12.93
21	-12.93	-12.93	-12.92	-12.90	-12.90	-12.89	-12.90	-12.91	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.95	-12.92
22	-12.94	-12.94	-12.92	-12.90	-12.90	-12.89	-12.89	-12.90	-12.91	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92
23	-12.93	-12.92	-12.90	-12.90	-12.90	-12.91	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.93
24	-12.93	-12.93	-12.92	-12.91	-12.91	-12.90	-12.91	-12.92	-12.92	-12.93	-12.93	-12.93	-12.94	-12.93	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.93	-12.93	-12.93
25	-12.91	-12.90	-12.90	-12.90	-12.91	-12.91	-12.92	-12.91	-12.93	-12.93	-12.94	-12.95	-12.95	-12.95	-12.95	-12.95	-12.95	-12.95	-12.95	-12.95	-12.94	-12.94	-12.95	-12.94	-12.93
26	-12.95	-12.94	-12.93	-12.93	-12.93	-12.92	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.95	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.94
27	-12.92	-12.91	-12.91	-12.92	-12.92	-12.93	-12.94	-12.94	-12.94	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93
28	-12.93	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.94
29	-12.93	-12.92	-12.91	-12.91	-12.91	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93
30	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.93	-12.93	-12.93	-12.94	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.92	-12.93
31	-12.91	-12.90	-12.89	-12.89	-12.90	-12.91	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.93	-12.92
HOURLY MEANS	-12.93	-12.93	-12.92	-12.91	-12.91	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93

2. Gangguan badai magnet

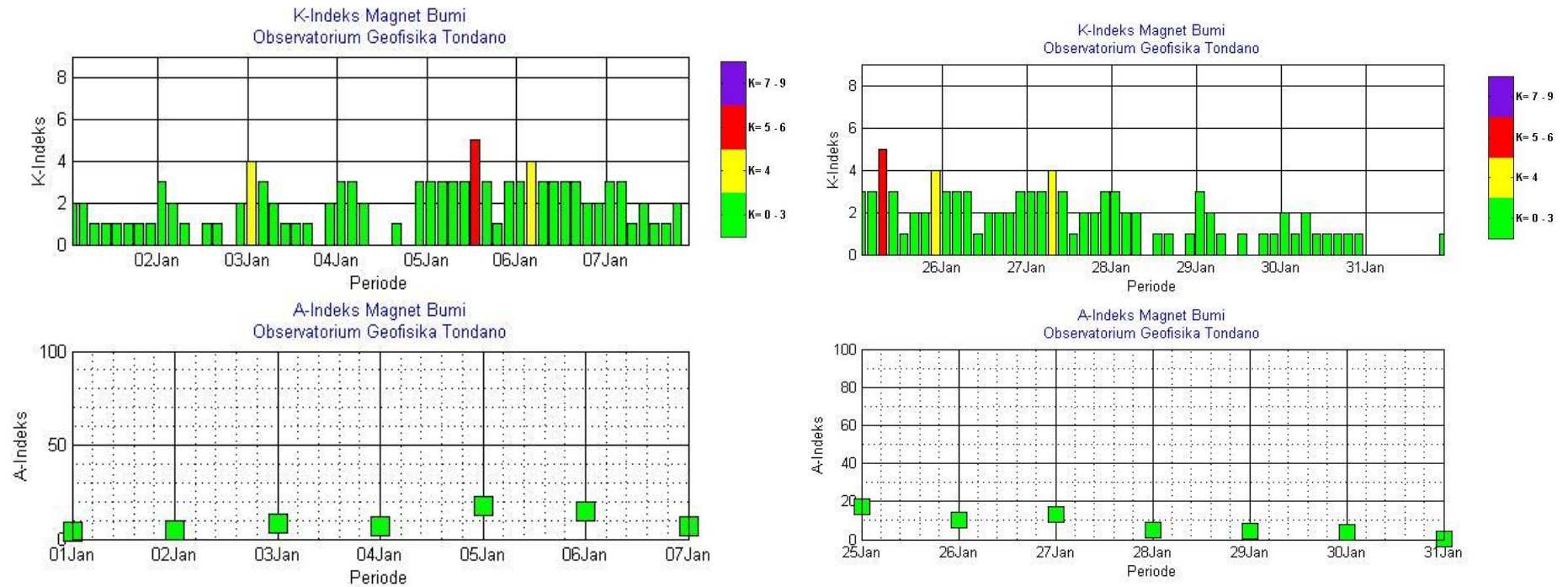
Tabel 11 Monitoring waktu gangguan pada pengamatan magnet bumi Januari 2021

Kejadian rekaman magnet bumi							Durasi gangguan	Keterangan
No	Hari			Waktu				
	Tanggal	Bulan	Tahun	Jam	Menit	Detik		
1	1	1	2021					
2	2	1	2021					
3	3	1	2021					
4	4	1	2021					
5	5	1	2021					
6	6	1	2021					
7	7	1	2021					
8	8	1	2021					
9	9	1	2021					
10	10	1	2021					
11	11	1	2021					
12	12	1	2021					
13	13	1	2021					
14	14	1	2021					
15	15	1	2021					
16	16	1	2021					
17	17	1	2021					
18	18	1	2021					
19	19	1	2021					
20	20	1	2021					
21	21	1	2021					
22	22	1	2021					
23	23	1	2021					
24	24	1	2021					
25	25	1	2021					
26	26	1	2021					
27	27	1	2021					
28	28	1	2021					
29	29	1	2021					
30	30	1	2021					
31	31	1	2021					

Tabel 12 Hasil Analisa K-indeks dan A indeks Januari 2021

Tanggal	K-1	K-2	K-3	K-4	K-5	K-6	K-7	K-8	A Indeks	Keterangan
1	2	2	1	1	1	1	1	1	4.000	Tenang
2	3	2	1	0	1	1	0	2	4.750	Tenang
3	4	3	2	1	1	1	0	2	8.125	Tenang
4	3	3	2	0	0	1	0	3	6.875	Tenang
5	3	3	3	3	5	3	1	3	17.625	Tenang
6	3	4	3	3	3	3	2	2	14.500	Tenang
7	3	3	1	2	1	1	2	0	6.625	Tenang
8	1	2	1	0	1	1	0	2	3.250	Tenang
9	1	2	2	0	1	1	0	2	3.750	Tenang
10	0	1	2	2	1	1	2	3	5.625	Tenang
11	1	2	1	3	5	3	3	4	16.625	Tenang
12	2	3	3	2	1	2	1	1	7.500	Tenang
13	2	3	1	2	1	2	2	2	7.000	Tenang
14	2	2	1	1	0	0	0	1	2.875	Tenang
15	1	2	1	0	1	2	1	0	3.250	Tenang
16	2	2	2	1	1	1	1	0	4.125	Tenang
17	2	3	2	1	1	1	0	2	5.625	Tenang
18	1	2	2	1	0	1	1	2	4.125	Tenang
19	3	2	1	2	2	0	2	3	7.625	Tenang
20	4	4	3	2	3	1	2	3	14.500	Tenang
21	1	2	3	2	1	1	0	2	5.625	Tenang
22	2	3	4	3	2	1	1	2	10.500	Tenang
23	2	0	2	2	0	2	2	3	6.250	Tenang
24	2	1	2	2	3	2	3	3	9.500	Tenang
25	3	3	5	3	1	2	2	4	17.125	Tenang
26	3	3	3	1	2	2	2	3	10.500	Tenang
27	3	3	4	3	1	2	2	3	13.000	Tenang
28	3	2	2	0	1	1	0	1	4.750	Tenang
29	3	2	1	0	1	0	1	1	4.250	Tenang
30	2	1	2	1	1	1	1	1	4.000	Tenang
31	0	0	0	0	0	0	0	1	0.375	Tenang

Gambar 22 Plot hasil analisa K-indeks dan A-indeks saat terjadi gangguan magnet bumi di bulan Januari 2021



B. Februari 2021

1. Nilai variasi harian bulan Februari 2021

Tabel 13 Nilai variasi harian komponen H – *horizontal* (nT) Februari 2021

Tondano Magnetic Observatory																							Februari 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39366.1	39376.8	39383.2	39384.6	39374.6	39366.5	39357.4	39347.7	39341.4	39340.4	39340.4	39336.8	39332.9	39333.2	39330.2	39328.4	39326.7	39324.9	39331.3	39334.4	39340.4	39345.1	39348.2	39364.5	39348.2
2	39388.7	39385.1	39399.9	39378.4	39367.7	39347.7	39334.3	39329.6	39325.2	39326.3	39318.0	39325.8	39316.5	39305.4	39313.4	39306.0	39312.3	39314.7	39319.2	39322.1	39325.0	39329.0	39333.2	39336.5	39335.8
3	39351.4	39357.1	39364.5	39366.2	39356.8	39353.3	39341.9	39330.0	39321.6	39326.8	39328.8	39328.8	39329.5	39331.4	39331.1	39325.6	39332.4	39323.0	39318.3	39325.2	39324.2	39318.7	39319.7	39322.3	39334.5
4	39334.1	39344.2	39353.5	39360.1	39347.1	39332.1	39327.1	39318.4	39314.1	39316.4	39318.8	39315.4	39317.8	39315.9	39316.3	39320.6	39322.7	39323.9	39324.9	39326.2	39326.8	39328.1	39328.6	39330.4	39327.6
5	39340.8	39351.4	39368.6	39370.4	39357.6	39350.8	39344.6	39335.2	39326.4	39324.0	39322.2	39321.8	39318.9	39317.5	39318.3	39319.4	39320.7	39324.4	39326.1	39325.9	39327.7	39328.0	39325.7	39326.0	39333.0
6	39332.1	39343.6	39355.4	39360.4	39355.5	39346.8	39336.7	39329.4	39328.9	39330.7	39331.8	39330.7	39327.0	39326.2	39325.5	39321.5	39326.2	39327.8	39322.0	39320.7	39324.7	39327.0	39332.4	39347.3	39333.8
7	39364.5	39367.4	39375.2	39365.6	39343.2	39320.7	39317.0	39314.9	39303.3	39288.5	39279.3	39300.2	39306.7	39308.0	39309.7	39312.0	39315.8	39316.1	39322.1	39326.4	39327.2	39325.4	39326.0	39329.7	39323.5
8	39338.2	39350.8	39362.2	39366.5	39360.5	39351.8	39342.9	39333.0	39326.2	39323.0	39320.2	39318.5	39320.7	39323.8	39325.3	39327.0	39328.2	39330.8	39330.7	39332.7	39332.0	39333.6	39335.8	39336.3	39335.4
9	39343.4	39354.1	39365.8	39369.9	39359.3	39354.9	39344.7	39332.6	39322.0	39315.9	39316.8	39317.5	39321.0	39322.0	39322.7	39322.9	39324.1	39326.4	39325.3	39325.8	39327.1	39327.3	39326.5	39329.9	39333.2
10	39337.7	39353.2	39370.5	39377.8	39372.9	39361.7	39350.5	39339.3	39329.9	39329.8	39328.2	39326.9	39327.6	39325.1	39324.1	39324.1	39322.7	39324.1	39326.8	39327.8	39328.8	39328.7	39329.7	39337.9	39337.7
11	39350.2	39361.2	39374.3	39379.5	39375.6	39367.4	39356.7	39344.1	39330.6	39324.9	39326.0	39329.9	39333.7	39335.0	39335.2	39335.0	39335.7	39333.4	39335.7	39336.8	39337.6	39338.4	39342.3	39353.8	39344.7
12	39369.6	39384.9	39396.6	39397.7	39390.5	39378.5	39363.0	39351.7	39343.0	39338.3	39338.0	39337.0	39334.7	39334.4	39335.2	39334.4	39335.1	39336.2	39330.0	39325.4	39328.6	39330.9	39333.4	39342.4	39349.6
13	39356.9	39387.7	39399.5	39398.3	39383.6	39356.5	39342.4	39334.0	39333.0	39320.7	39294.5	39291.8	39308.1	39306.8	39307.3	39309.8	39311.7	39313.6	39317.6	39320.3	39319.7	39321.7	39321.5	39326.0	39332.6
14	39335.8	39349.3	39355.9	39352.2	39342.6	39333.0	39326.9	39320.9	39320.4	39323.3	39325.5	39324.8	39324.9	39327.5	39328.0	39327.7	39327.8	39328.1	39327.2	39326.4	39329.0	39331.1	39332.2	39334.8	39331.5
15	39344.5	39358.1	39369.2	39374.7	39370.6	39359.2	39343.9	39329.9	39326.4	39331.7	39333.3	39332.9	39332.9	39332.4	39331.2	39329.7	39330.9	39330.3	39333.1	39336.9	39341.5	39335.8	39328.0	39332.0	39340.4
16	39347.2	39364.9	39384.5	39401.9	39391.2	39357.7	39332.5	39332.5	39280.3	39279.7	39292.0	39303.9	39308.1	39308.4	39307.7	39307.2	39306.2	39311.6	39315.3	39317.7	39318.5	39323.7	39331.7	39339.5	39327.7
17	39350.2	39363.2	39377.4	39383.3	39368.5	39352.7	39336.5	39336.5	39318.9	39318.3	39318.6	39324.4	39323.4	39321.9	39317.0	39318.4	39324.0	39327.9	39330.2	39330.6	39326.5	39323.1	39319.3	39323.2	39334.8
18	39337.3	39351.4	39361.8	39369.9	39370.0	39370.0	39365.5	39351.7	39321.3	39317.3	39317.9	39320.6	39322.4	39323.8	39324.6	39326.0	39326.5	39327.6	39328.7	39330.0	39330.3	39331.3	39330.7	39334.6	39337.1
19	39345.2	39355.5	39365.8	39373.3	39367.2	39367.2	39355.8	39343.2	39323.5	39328.9	39331.0	39328.4	39326.9	39308.5	39304.8	39310.7	39295.5	39293.2	39290.5	39305.1	39326.1	39321.7	39306.4	39306.5	39328.4
20	39314.8	39332.4	39348.5	39360.4	39358.7	39358.7	39342.7	39316.2	39312.4	39315.8	39315.1	39308.1	39315.9	39297.4	39294.3	39314.2	39313.7	39308.9	39306.3	39307.7	39308.7	39307.3	39304.5	39309.0	39319.7
21	39313.7	39321.9	39332.6	39339.0	39339.8	39339.8	39328.3	39321.4	39300.1	39302.0	39309.2	39304.7	39303.9	39298.2	39289.8	39295.8	39302.9	39311.2	39312.7	39314.4	39316.9	39316.6	39318.3	39321.9	39314.8
22	39330.2	39339.1	39344.4	39339.5	39336.1	39336.1	39327.2	39322.4	39308.0	39298.1	39303.3	39304.5	39309.1	39300.6	39317.7	39319.6	39317.9	39321.1	39323.9	39322.6	39327.4	39331.3	39328.5	39323.9	39322.2
23	39326.5	39336.7	39348.3	39351.2	39354.2	39354.2	39343.8	39327.9	39309.2	39308.7	39303.9	39305.5	39297.4	39295.8	39308.8	39311.6	39312.7	39316.2	39320.8	39325.2	39326.4	39323.5	39321.2	39320.8	39322.9
24	39328.3	39335.3	39340.4	39349.5	39349.5	39349.5	39331.5	39314.2	39290.7	39281.4	39276.5	39283.6	39295.3	39310.7	39313.3	39317.5	39315.2	39312.8	39315.1	39310.3	39317.7	39318.1	39312.1	39311.5	39315.8
25	39318.0	39328.9	39342.5	39343.8	39338.9	39338.9	39325.6	39307.4	39292.3	39286.4	39281.7	39289.1	39299.5	39307.5	39311.2	39313.6	39313.0	39321.3	39323.4	39317.0	39317.5	39318.4	39320.2	39323.9	39315.8
26	39338.3	39353.6	39362.1	39361.3	39351.8	39351.8	39342.6	39334.7	39318.0	39316.2	39312.2	39316.6	39323.0	39320.6	39312.9	39322.8	39325.0	39322.1	39340.3	39340.2	39341.2	39343.2	39340.8	39348.4	39335.0
27	39358.5	39369.3	39374.5	39374.6	39368.1	39368.1	39353.8	39337.3	39329.4	39331.0	39331.2	39331.5	39329.5	39326.8	39330.4	39326.3	39329.0	39329.0	39329.8	39329.4	39329.7	39332.3	39334.4	39341.6	39341.5
28	39354.5	39366.7	39376.4	39381.8	39377.2	39377.2	39355.1	39342.4	39332.7	39335.2	39336.4	39336.8	39334.5	39331.6	39333.1	39333.5	39333.0	39328.2	39329.6	39332.4	39335.4	39335.5	39340.5	39360.0	39345.8
HOURLY MEANS	39343.5	39355.1	39366.2	39369.0	39361.8	39353.7	39341.8	39331.4	39318.9	39317.1	39316.1	39317.7	39319.3	39317.7	39318.5	39320.0	39321.0	39321.8	39323.5	39324.8	39327.2	39327.7	39327.6	39332.7	39332.3

Tabel 14 Nilai variasi harian komponen Z – vertical (nT) Februari 2021

Tondano Magnetic Observatory

Februari 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-9030.4	-9024.3	-9020.7	-9021.4	-9027.9	-9031.4	-9028.6	-9030.3	-9030.3	-9028.6	-9027.9	-9027.0	-9026.9	-9028.5	-9027.1	-9028.3	-9027.3	-9029.7	-9032.6	-9031.4	-9032.2	-9033.0	-9031.1	-9029.3	-9028.6
2	-9023.7	-9015.6	-9019.1	-9014.2	-9028.2	-9030.0	-9032.6	-9034.6	-9034.6	-9030.7	-9027.8	-9031.1	-9026.0	-9024.9	-9028.6	-9030.2	-9032.0	-9032.0	-9031.7	-9033.1	-9033.9	-9032.6	-9030.2	-9029.3	-9028.6
3	-9022.2	-9018.8	-9012.0	-9006.9	-9002.9	-9013.2	-9017.2	-9024.5	-9024.5	-9027.5	-9026.5	-9027.0	-9027.8	-9028.1	-9027.6	-9028.2	-9028.3	-9026.2	-9029.5	-9031.5	-9029.9	-9032.6	-9035.4	-9027.4	-9024.0
4	-9020.5	-9014.1	-9013.6	-9017.3	-9018.1	-9021.8	-9026.4	-9026.1	-9026.1	-9027.4	-9028.9	-9025.6	-9028.0	-9027.1	-9029.2	-9029.6	-9029.7	-9029.7	-9030.2	-9030.5	-9030.4	-9031.6	-9032.8	-9031.1	-9026.1
5	-9030.6	-9024.3	-9018.0	-9005.6	-9001.0	-9011.1	-9017.1	-9016.7	-9016.7	-9023.9	-9024.0	-9026.8	-9024.6	-9027.8	-9029.0	-9029.6	-9030.0	-9031.1	-9030.8	-9030.3	-9031.0	-9032.3	-9031.5	-9031.3	-9024.0
6	-9029.2	-9030.0	-9029.8	-9025.9	-9022.5	-9021.9	-9022.9	-9023.8	-9023.8	-9025.9	-9026.4	-9027.8	-9026.4	-9028.0	-9027.0	-9026.6	-9031.6	-9027.0	-9026.9	-9025.4	-9032.0	-9032.6	-9029.2	-9027.5	-9027.1
7	-9023.2	-9016.4	-9015.3	-9015.5	-9016.6	-9019.6	-9029.0	-9029.3	-9029.3	-9022.5	-9025.4	-9035.0	-9028.5	-9027.2	-9027.4	-9028.2	-9029.6	-9028.4	-9031.2	-9029.5	-9029.9	-9030.0	-9031.7	-9030.1	-9026.2
8	-9030.0	-9026.6	-9022.2	-9016.2	-9017.2	-9025.2	-9025.6	-9024.5	-9024.5	-9022.7	-9024.0	-9026.2	-9028.5	-9028.1	-9028.0	-9028.6	-9027.9	-9029.2	-9031.6	-9030.9	-9029.6	-9033.3	-9033.3	-9029.3	-9026.8
9	-9027.5	-9028.3	-9030.3	-9030.1	-9027.8	-9027.3	-9022.0	-9018.5	-9018.5	-9022.9	-9026.3	-9024.5	-9025.2	-9025.4	-9025.7	-9026.6	-9028.2	-9029.0	-9029.4	-9030.5	-9031.0	-9031.1	-9028.3	-9023.4	-9026.6
10	-9020.2	-9016.0	-9013.2	-9014.7	-9014.0	-9014.1	-9015.3	-9016.4	-9016.4	-9020.4	-9020.8	-9022.2	-9024.0	-9024.5	-9026.3	-9026.8	-9027.6	-9029.0	-9030.4	-9030.2	-9029.8	-9028.0	-9025.0	-9025.5	-9022.1
11	-9029.5	-9029.7	-9027.3	-9018.8	-9013.9	-9017.1	-9018.2	-9017.9	-9017.9	-9019.8	-9021.8	-9023.8	-9024.5	-9025.1	-9025.2	-9025.8	-9026.6	-9027.3	-9028.8	-9028.8	-9029.1	-9028.7	-9027.2	-9024.0	-9024.0
12	-9021.4	-9015.7	-9013.7	-9011.7	-9013.8	-9019.6	-9023.6	-9025.4	-9025.4	-9019.9	-9020.6	-9021.8	-9022.8	-9024.9	-9026.1	-9026.4	-9027.2	-9027.6	-9027.0	-9028.8	-9031.4	-9031.5	-9031.7	-9028.2	-9023.6
13	-9026.4	-9020.1	-9011.0	-9010.9	-9007.7	-9014.2	-9020.8	-9024.2	-9022.8	-9022.6	-9032.1	-9031.5	-9029.0	-9028.9	-9029.7	-9030.6	-9030.7	-9031.8	-9031.6	-9031.2	-9032.4	-9028.4	-9023.4	-9024.9	
14	-9021.3	-9014.3	-9011.9	-9015.8	-9019.4	-9026.8	-9029.7	-9028.0	-9028.0	-9025.0	-9025.0	-9025.0	-9025.6	-9025.9	-9026.4	-9027.6	-9029.0	-9030.0	-9029.7	-9030.0	-9031.2	-9031.6	-9031.0	-9031.6	-9025.8
15	-9028.8	-9022.4	-9015.3	-9014.4	-9015.4	-9017.6	-9021.0	-9022.6	-9025.1	-9028.1	-9026.8	-9028.2	-9028.5	-9028.8	-9028.8	-9028.7	-9030.5	-9029.7	-9030.7	-9031.7	-9031.3	-9027.5	-9027.2	-9026.5	-9025.6
16	-9022.6	-9019.6	-9012.9	-9006.3	-9007.7	-9007.1	-9017.1	-9017.1	-9017.1	-9028.8	-9029.6	-9030.5	-9027.5	-9026.8	-9028.0	-9028.6	-9029.8	-9032.0	-9031.1	-9030.8	-9029.8	-9030.6	-9029.9	-9029.2	-9023.8
17	-9027.5	-9024.5	-9022.2	-9019.1	-9016.9	-9019.6	-9024.9	-9024.9	-9024.9	-9031.5	-9028.9	-9028.6	-9027.3	-9027.5	-9027.4	-9029.3	-9030.9	-9029.0	-9029.3	-9030.0	-9030.3	-9031.2	-9030.9	-9028.2	-9026.9
18	-9026.8	-9024.2	-9023.0	-9026.3	-9026.3	-9023.8	-9024.9	-9026.2	-9026.2	-9030.0	-9031.7	-9031.1	-9030.4	-9030.0	-9029.2	-9029.7	-9029.5	-9029.9	-9030.0	-9030.1	-9030.9	-9031.6	-9032.0	-9031.6	-9028.6
19	-9032.2	-9031.0	-9032.6	-9032.1	-9032.1	-9028.2	-9028.3	-9030.4	-9030.4	-9031.9	-9028.1	-9026.6	-9028.7	-9023.4	-9028.7	-9028.3	-9027.2	-9029.2	-9032.9	-9040.1	-9035.5	-9031.3	-9034.7	-9033.5	-9030.7
20	-9028.2	-9022.3	-9018.9	-9025.3	-9025.3	-9026.6	-9030.7	-9026.0	-9026.0	-9026.9	-9026.0	-9026.0	-9029.9	-9022.6	-9027.3	-9035.4	-9023.0	-9030.5	-9033.5	-9034.4	-9038.1	-9034.8	-9031.5	-9032.3	-9028.4
21	-9033.2	-9034.3	-9030.6	-9027.6	-9027.6	-9027.2	-9023.6	-9025.8	-9025.8	-9030.8	-9029.2	-9026.3	-9025.5	-9024.6	-9026.9	-9032.1	-9032.0	-9032.1	-9029.9	-9030.8	-9031.6	-9030.0	-9030.6	-9028.3	-9029.0
22	-9026.2	-9025.1	-9021.9	-9019.9	-9019.9	-9020.1	-9022.3	-9024.8	-9024.8	-9023.6	-9027.8	-9026.4	-9028.5	-9024.9	-9032.6	-9027.1	-9028.8	-9029.1	-9030.1	-9029.6	-9033.1	-9032.4	-9031.2	-9032.8	-9026.8
23	-9034.6	-9035.3	-9032.7	-9033.8	-9033.8	-9033.5	-9031.8	-9026.9	-9026.9	-9024.8	-9026.7	-9029.6	-9026.8	-9029.1	-9034.5	-9031.7	-9031.4	-9031.5	-9033.5	-9031.6	-9031.0	-9029.1	-9027.2	-9025.9	-9030.6
24	-9025.1	-9024.6	-9026.3	-9027.4	-9027.4	-9028.6	-9023.1	-9020.0	-9020.0	-9021.8	-9025.2	-9026.4	-9030.4	-9030.8	-9028.4	-9029.5	-9028.1	-9030.1	-9030.4	-9029.3	-9032.5	-9027.9	-9028.4	-9030.0	-9027.2
25	-9028.5	-9024.4	-9020.6	-9021.8	-9021.8	-9020.3	-9021.5	-9021.0	-9021.0	-9024.7	-9024.8	-9026.2	-9027.8	-9026.2	-9026.0	-9026.6	-9027.2	-9031.0	-9029.1	-9027.3	-9029.5	-9027.6	-9025.1	-9025.8	-9025.2
26	-9023.4	-9022.7	-9022.1	-9023.8	-9023.8	-9024.3	-9027.0	-9027.6	-9027.6	-9024.5	-9021.5	-9025.1	-9027.0	-9023.7	-9022.6	-9028.9	-9028.0	-9028.3	-9032.5	-9027.2	-9027.1	-9027.0	-9024.7	-9025.7	-9025.7
27	-9024.2	-9024.4	-9018.7	-9017.3	-9017.3	-9019.0	-9019.7	-9016.2	-9016.2	-9021.0	-9020.4	-9022.0	-9023.5	-9023.8	-9025.9	-9024.4	-9026.3	-9026.1	-9026.9	-9027.0	-9027.6	-9028.2	-9024.0	-9024.2	-9022.7
28	-9027.0	-9024.8	-9025.9	-9027.5	-9027.5	-9026.6	-9024.6	-9027.9	-9027.9	-9025.9	-9025.0	-9024.1	-9023.4	-9023.9	-9025.4	-9024.7	-9024.8	-9025.3	-9027.7	-9029.3	-9029.0	-9027.5	-9028.5	-9028.7	-9026.4
HOURLY MEANS	-9026.6	-9023.4	-9020.8	-9019.5	-9019.8	-9022.0	-9023.9	-9024.2	-9024.3	-9025.5	-9025.7	-9026.9	-9027.0	-9026.4	-9027.7	-9028.5	-9028.7	-9029.3	-9030.3	-9030.4	-9031.1	-9030.6	-9029.7	-9028.4	-9026.3

Tabel 15 Nilai Variasi harian komponen F – total (nT) Februari 2021

Tondano Magnetic Observatory

Februari 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	40388.6	40397.6	40403.1	40404.6	40396.3	40389.2	40379.7	40370.7	40364.5	40363.1	40362.9	40359.2	40355.5	40356.1	40352.9	40351.4	40349.5	40348.2	40355.1	40357.9	40363.9	40368.7	40371.2	40386.8	40370.7
2	40409.1	40403.8	40419.0	40397.0	40389.6	40370.5	40358.1	40353.9	40349.7	40349.9	40341.1	40349.5	40339.3	40328.2	40336.8	40330.0	40336.5	40338.8	40343.2	40346.3	40349.3	40352.9	40356.5	40359.5	40358.7
3	40372.5	40377.2	40382.9	40383.5	40373.4	40372.3	40362.1	40352.1	40343.9	40349.6	40351.3	40351.5	40352.4	40354.2	40353.9	40348.6	40355.2	40345.6	40341.8	40348.9	40347.7	40342.9	40344.5	40345.2	40356.4
4	40355.2	40363.6	40372.5	40379.8	40367.3	40353.5	40349.7	40341.1	40336.9	40339.5	40342.2	40338.1	40341.0	40338.9	40339.8	40344.1	40346.1	40347.3	40348.4	40349.7	40350.2	40351.8	40352.6	40353.9	40350.1
5	40363.9	40372.9	40388.2	40387.2	40373.8	40369.4	40364.7	40355.4	40346.9	40346.1	40344.4	40344.7	40341.3	40340.6	40341.7	40342.8	40344.2	40348.1	40349.7	40349.4	40351.3	40351.9	40349.5	40349.7	40354.9
6	40355.2	40366.6	40378.0	40382.1	40376.5	40367.9	40358.2	40351.3	40350.9	40353.0	40354.3	40353.5	40349.6	40349.1	40348.2	40344.3	40349.9	40350.5	40344.8	40343.2	40348.6	40351.0	40355.4	40369.6	40356.3
7	40385.4	40386.8	40394.1	40384.8	40363.2	40341.9	40340.4	40338.4	40327.1	40311.2	40302.8	40325.4	40330.3	40331.2	40332.9	40335.4	40339.4	40339.5	40345.9	40349.7	40350.5	40348.8	40349.8	40353.0	40346.2
8	40361.3	40372.8	40383.0	40385.9	40380.2	40373.5	40364.9	40355.0	40348.3	40344.8	40342.4	40341.3	40343.9	40346.8	40348.2	40350.1	40351.1	40353.9	40354.4	40356.2	40355.2	40357.6	40359.7	40359.3	40357.9
9	40365.8	40376.4	40388.3	40392.2	40381.4	40377.0	40365.8	40353.2	40342.9	40338.0	40339.7	40339.9	40343.4	40344.5	40345.2	40345.6	40347.2	40349.6	40348.6	40349.4	40350.7	40350.9	40349.6	40351.7	40355.7
10	40358.6	40372.8	40389.1	40396.4	40391.6	40380.7	40370.0	40359.3	40350.2	40351.0	40349.5	40348.6	40349.6	40347.3	40346.7	40346.8	40345.7	40347.3	40350.2	40351.2	40352.1	40351.6	40351.9	40360.0	40359.1
11	40372.9	40383.6	40395.9	40399.1	40394.1	40386.9	40376.7	40364.3	40351.2	40346.0	40347.6	40351.8	40355.7	40357.1	40357.3	40357.2	40358.1	40356.1	40358.6	40359.7	40360.5	40361.2	40364.7	40375.2	40366.3
12	40389.9	40403.6	40414.5	40415.2	40408.7	40398.2	40384.1	40373.4	40365.0	40359.1	40359.0	40358.3	40356.3	40356.4	40357.5	40356.8	40357.7	40358.8	40352.6	40348.6	40352.3	40354.5	40357.0	40365.1	40370.9
13	40378.7	40407.3	40416.8	40415.6	40400.6	40375.6	40363.4	40356.0	40354.9	40342.6	40317.1	40316.5	40332.3	40330.5	40330.9	40333.5	40335.6	40337.5	40341.6	40344.2	40343.5	40345.8	40344.6	40347.9	40354.7
14	40357.0	40368.6	40374.5	40371.8	40363.2	40355.5	40350.2	40344.0	40343.5	40345.6	40347.9	40347.1	40347.3	40349.9	40350.5	40350.5	40350.9	40351.5	40350.5	40349.8	40352.6	40354.7	40355.7	40358.3	40353.8
15	40367.2	40379.0	40388.2	40393.4	40389.6	40379.0	40364.9	40351.5	40348.7	40354.5	40355.8	40355.8	40355.8	40355.4	40354.2	40352.7	40354.3	40353.6	40356.5	40360.4	40364.8	40358.4	40350.8	40354.5	40362.5
16	40368.4	40385.0	40402.6	40418.1	40408.0	40375.2	40352.9	40352.9	40302.0	40304.0	40316.2	40328.0	40331.4	40331.5	40331.2	40330.7	40330.1	40335.8	40339.2	40341.5	40342.1	40347.3	40355.0	40362.3	40349.6
17	40372.5	40384.5	40397.8	40402.9	40387.9	40373.1	40358.5	40358.5	40341.4	40342.2	40342.0	40347.5	40346.2	40344.8	40340.1	40341.9	40347.7	40351.1	40353.4	40353.9	40350.0	40346.8	40343.1	40346.3	40357.2
18	40359.7	40372.9	40382.7	40391.4	40391.4	40390.9	40386.8	40373.6	40343.9	40340.9	40341.9	40344.4	40345.9	40347.3	40347.8	40349.3	40349.7	40350.9	40352.0	40353.3	40353.8	40354.9	40354.4	40358.2	40359.9
19	40368.6	40378.4	40388.7	40396.0	40390.0	40389.2	40378.1	40366.3	40347.1	40352.7	40353.9	40350.9	40350.0	40330.8	40328.4	40334.1	40319.1	40317.3	40315.5	40331.3	40350.8	40345.5	40331.4	40331.2	40351.9
20	40338.1	40353.9	40368.9	40381.9	40380.3	40380.5	40365.9	40339.0	40335.3	40338.7	40337.9	40331.1	40339.6	40319.9	40318.0	40339.1	40335.9	40332.9	40331.0	40332.6	40334.3	40332.3	40328.8	40333.4	40342.9
21	40338.2	40346.4	40356.0	40361.5	40362.3	40362.2	40350.3	40344.0	40323.3	40326.2	40332.8	40327.9	40326.8	40321.1	40313.5	40320.4	40327.4	40335.5	40336.4	40338.3	40340.9	40340.3	40342.0	40345.0	40338.3
22	40352.7	40361.0	40365.6	40360.3	40357.0	40357.1	40348.9	40344.7	40330.7	40320.8	40326.8	40327.7	40332.6	40323.5	40341.9	40342.6	40341.3	40344.4	40347.4	40346.0	40351.4	40355.1	40352.1	40348.0	40345.0
23	40350.9	40361.0	40371.7	40374.8	40377.8	40377.7	40367.1	40350.5	40332.4	40331.3	40327.2	40329.4	40320.8	40319.7	40333.7	40335.8	40336.8	40340.2	40345.2	40349.0	40350.1	40346.8	40344.1	40343.5	40346.6
24	40350.6	40357.3	40362.6	40371.7	40371.7	40372.0	40353.2	40335.7	40312.8	40304.1	40300.1	40307.3	40319.6	40334.7	40336.7	40341.0	40338.5	40336.6	40338.9	40334.0	40341.9	40341.3	40335.5	40335.3	40338.9
25	40341.3	40351.0	40363.4	40365.0	40360.2	40359.9	40347.1	40329.3	40314.6	40309.6	40305.1	40312.6	40323.1	40330.5	40334.1	40336.5	40336.1	40345.1	40346.6	40340.0	40341.0	40341.5	40342.7	40346.4	40338.4
26	40359.9	40374.7	40382.8	40382.5	40373.2	40373.3	40364.9	40357.4	40341.1	40338.6	40334.0	40339.2	40345.8	40342.8	40335.0	40346.0	40348.0	40345.3	40363.9	40362.7	40363.5	40365.5	40362.7	40370.3	40357.2
27	40379.8	40390.4	40394.1	40394.0	40387.6	40387.9	40374.2	40357.4	40349.7	40352.2	40352.4	40353.0	40351.4	40348.8	40352.8	40348.5	40351.5	40351.5	40352.4	40352.0	40352.5	40355.2	40356.3	40363.3	40362.9
28	40376.5	40387.9	40397.7	40403.2	40398.7	40398.5	40376.6	40365.0	40355.4	40357.5	40358.5	40358.7	40356.2	40353.5	40355.3	40355.5	40355.1	40350.5	40352.4	40355.5	40358.3	40358.1	40363.2	40382.3	40367.9
HOURLY MEANS	40365.7	40376.3	40386.5	40389.0	40382.0	40374.6	40363.5	40353.4	40341.2	40339.8	40338.8	40340.7	40342.3	40340.6	40341.6	40343.3	40344.2	40345.1	40347.0	40348.4	40350.9	40351.2	40350.9	40355.5	40354.7

Tabel 16 Nilai Variasi harian komponen X – *north* (nT) Februari 2021

Tondano Magnetic Observatory

Februari 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39364.5	39375.1	39381.6	39382.9	39372.6	39364.4	39355.3	39345.7	39339.5	39338.5	39334.9	39331.1	39331.4	39328.5	39326.7	39324.9	39323.2	39329.5	39332.7	39338.7	39343.3	39346.5	39363.0	39346.4	
2	39387.2	39383.7	39398.5	39376.9	39366.0	39346.0	39332.5	39327.7	39323.4	39324.4	39316.2	39324.0	39314.7	39303.6	39311.7	39304.3	39310.5	39313.0	39317.5	39320.3	39323.3	39327.3	39331.6	39334.9	39334.1
3	39349.8	39355.4	39362.8	39364.5	39354.9	39351.4	39340.0	39328.1	39319.8	39324.9	39326.9	39327.0	39327.7	39329.6	39329.3	39323.8	39330.6	39321.3	39316.6	39323.5	39322.5	39316.9	39317.9	39320.6	39332.8
4	39332.5	39342.6	39351.9	39358.4	39345.3	39330.4	39325.4	39316.7	39312.3	39314.6	39317.0	39313.6	39316.0	39314.2	39314.5	39318.9	39320.9	39322.1	39323.2	39324.4	39325.1	39326.4	39326.8	39328.7	39325.9
5	39339.1	39349.7	39366.9	39368.8	39356.0	39349.0	39342.8	39333.3	39324.5	39322.2	39320.4	39320.0	39317.1	39315.7	39316.5	39317.6	39318.9	39322.7	39324.4	39324.2	39325.9	39326.3	39324.0	39324.3	39331.3
6	39330.5	39342.0	39353.7	39358.8	39353.8	39345.0	39334.9	39327.5	39327.1	39328.8	39330.0	39328.9	39325.2	39324.4	39323.7	39319.8	39324.4	39326.1	39320.3	39319.0	39323.0	39325.3	39330.7	39345.6	39332.0
7	39362.8	39365.7	39373.5	39363.8	39341.3	39318.6	39315.0	39312.9	39301.3	39286.6	39277.4	39298.4	39304.9	39306.2	39307.9	39310.2	39314.1	39314.4	39320.4	39324.7	39325.5	39323.7	39324.3	39328.1	39321.7
8	39336.7	39349.3	39360.7	39364.9	39358.7	39349.9	39340.9	39331.0	39324.2	39321.1	39318.4	39316.7	39318.9	39322.0	39323.5	39325.3	39326.5	39329.1	39329.0	39331.0	39330.3	39331.9	39334.0	39334.7	39333.7
9	39341.8	39352.5	39364.2	39368.1	39357.4	39353.0	39342.8	39330.7	39320.2	39314.0	39315.0	39315.6	39319.2	39320.2	39320.9	39321.1	39322.4	39324.7	39323.6	39324.1	39325.3	39325.6	39324.8	39328.3	39331.5
10	39336.2	39351.7	39369.0	39376.1	39371.2	39359.8	39348.5	39337.3	39328.0	39328.0	39326.4	39325.2	39325.8	39323.3	39322.3	39322.3	39321.0	39322.3	39325.0	39326.0	39327.1	39327.0	39328.0	39336.4	39336.0
11	39348.7	39359.6	39372.8	39377.8	39373.7	39365.4	39354.7	39342.1	39328.6	39323.0	39324.2	39328.0	39331.9	39333.2	39333.4	39333.2	39333.9	39331.7	39333.9	39335.1	39335.8	39336.6	39340.6	39352.3	39342.9
12	39368.1	39383.4	39394.9	39395.9	39388.7	39376.5	39361.0	39349.6	39341.1	39336.4	39336.1	39335.2	39333.0	39332.6	39333.4	39332.7	39333.4	39334.5	39328.3	39323.7	39326.9	39329.1	39331.6	39340.8	39347.8
13	39355.4	39386.2	39397.9	39396.7	39381.9	39354.6	39340.5	39332.2	39331.1	39318.9	39292.7	39290.0	39306.4	39305.1	39305.6	39308.1	39310.0	39311.9	39315.9	39318.6	39317.9	39320.0	39319.7	39324.3	39330.9
14	39334.2	39347.7	39354.3	39350.6	39340.8	39331.1	39325.0	39319.0	39318.5	39321.5	39323.8	39323.0	39323.1	39325.8	39326.3	39326.0	39326.0	39326.4	39325.5	39324.6	39327.2	39329.3	39330.5	39333.2	39329.7
15	39343.0	39356.6	39367.7	39373.0	39368.8	39357.3	39342.0	39328.0	39324.6	39329.9	39331.5	39331.2	39331.2	39330.7	39329.4	39328.0	39329.1	39328.6	39331.4	39335.1	39339.8	39334.1	39326.4	39330.5	39338.7
16	39345.7	39363.4	39383.0	39400.3	39389.5	39355.9	39330.6	39330.6	39278.4	39277.8	39290.1	39302.1	39306.3	39306.7	39306.0	39305.4	39304.5	39309.9	39313.6	39315.9	39316.8	39322.0	39330.1	39337.8	39325.9
17	39348.6	39361.6	39375.7	39381.6	39366.8	39350.9	39334.7	39334.7	39317.1	39316.5	39316.8	39322.6	39321.6	39320.1	39315.3	39316.7	39322.3	39326.2	39328.5	39328.9	39324.7	39321.3	39317.5	39321.5	39333.0
18	39335.6	39349.8	39360.2	39368.2	39368.3	39368.3	39363.8	39350.0	39319.5	39315.5	39316.1	39318.8	39320.6	39322.0	39322.8	39324.2	39324.7	39325.9	39327.0	39328.3	39328.6	39329.6	39328.9	39332.9	39335.4
19	39343.5	39353.9	39364.1	39371.6	39365.5	39365.4	39354.0	39341.4	39321.7	39327.1	39329.3	39326.6	39325.2	39306.8	39303.1	39309.0	39293.9	39291.6	39288.8	39303.3	39324.4	39320.0	39304.6	39304.9	39326.6
20	39313.2	39330.9	39347.0	39358.7	39357.0	39357.0	39340.9	39314.3	39310.5	39314.0	39313.4	39306.4	39314.2	39295.7	39292.7	39312.5	39312.1	39307.2	39304.6	39306.0	39306.8	39305.5	39302.8	39307.3	39317.9
21	39312.1	39320.3	39331.1	39337.4	39338.1	39338.1	39326.6	39319.6	39298.4	39300.2	39307.4	39303.0	39302.1	39296.5	39288.1	39294.1	39301.2	39309.5	39311.0	39312.7	39315.2	39314.9	39316.5	39320.2	39313.1
22	39328.5	39337.4	39342.8	39337.8	39334.4	39334.4	39325.4	39320.6	39306.2	39296.3	39301.6	39302.8	39307.4	39298.9	39316.0	39317.9	39316.2	39319.4	39322.2	39320.9	39325.6	39329.5	39326.7	39322.2	39320.5
23	39324.9	39335.1	39346.7	39349.6	39352.6	39352.5	39342.1	39326.2	39307.6	39306.9	39302.2	39303.8	39295.7	39294.1	39307.1	39309.9	39311.0	39314.5	39319.1	39323.5	39324.7	39321.8	39319.6	39319.2	39321.3
24	39326.7	39333.7	39338.8	39347.8	39347.8	39347.8	39329.8	39312.5	39288.9	39279.5	39274.7	39281.9	39293.5	39308.9	39311.6	39315.8	39313.5	39311.1	39313.4	39308.6	39316.0	39316.4	39310.4	39309.7	39314.1
25	39316.2	39327.2	39340.8	39342.1	39337.2	39337.3	39323.9	39305.7	39290.5	39284.5	39279.9	39287.3	39297.8	39305.8	39309.5	39311.9	39311.3	39319.6	39321.6	39315.3	39315.7	39316.7	39318.6	39322.3	39314.1
26	39336.6	39352.0	39360.4	39359.6	39350.0	39350.0	39340.8	39332.9	39316.2	39314.4	39310.4	39314.9	39321.3	39318.9	39311.2	39321.1	39323.3	39320.4	39338.6	39338.5	39339.5	39341.5	39339.2	39346.8	39333.3
27	39357.0	39367.7	39372.8	39372.9	39366.3	39366.3	39352.0	39335.6	39327.6	39329.1	39329.4	39329.8	39327.7	39325.1	39328.7	39324.6	39327.3	39327.3	39328.0	39327.7	39328.0	39330.6	39332.7	39339.9	39339.7
28	39352.7	39364.9	39374.7	39380.0	39375.4	39375.4	39353.4	39340.7	39330.9	39333.4	39334.6	39335.1	39332.7	39329.9	39331.4	39331.8	39331.3	39326.5	39327.9	39330.7	39333.7	39333.8	39338.8	39358.4	39344.1
HOURLY MEANS	39341.9	39353.5	39364.6	39367.3	39360.0	39351.8	39340.0	39329.5	39317.1	39315.3	39314.3	39316.0	39317.6	39316.0	39316.8	39318.3	39319.3	39320.0	39321.7	39323.1	39325.5	39325.9	39325.9	39331.0	39330.5

Tabel 17 Nilai Variasi harian komponen Y – east (nT) Februari 2021

Tondano Magnetic Observatory																							Februari 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	357.7	360.0	362.9	371.6	388.6	400.0	402.5	394.9	387.8	381.6	380.9	378.7	376.3	374.6	371.5	370.2	367.4	367.4	369.4	369.5	370.6	371.7	365.6	350.2	374.7
2	340.7	337.6	339.8	344.5	357.9	366.4	376.8	380.2	381.2	384.7	381.3	378.1	375.7	370.6	367.6	368.4	368.1	368.8	367.9	369.3	370.9	368.3	361.1	356.8	366.0
3	354.9	357.5	359.3	373.0	382.1	386.7	385.6	386.5	385.4	384.6	382.0	379.5	377.5	375.4	373.0	372.7	368.2	366.0	366.4	365.4	365.8	371.2	374.6	364.3	373.2
4	353.6	347.0	356.2	364.3	368.0	367.4	368.0	368.1	373.8	378.0	379.4	375.6	374.3	372.4	371.8	370.8	370.2	369.2	368.6	368.4	367.5	368.3	369.8	365.3	368.2
5	362.0	362.0	360.2	352.6	361.2	375.1	379.4	380.3	384.6	384.1	378.1	377.2	372.9	371.9	370.5	369.5	369.5	369.8	370.1	369.4	369.5	371.1	366.3	358.5	370.2
6	352.5	353.4	357.8	362.7	368.8	376.2	379.3	381.8	381.1	380.1	379.2	378.3	375.3	373.5	371.4	368.9	371.0	367.8	365.8	360.9	363.4	367.5	362.8	359.1	369.1
7	362.2	367.6	372.0	376.6	391.2	399.5	396.7	392.5	388.9	384.8	381.5	380.7	375.1	372.0	370.7	370.2	369.9	368.5	368.5	367.2	366.8	366.4	363.0	353.2	375.2
8	345.9	343.7	347.7	357.0	369.7	385.4	390.1	392.3	390.2	383.5	378.9	375.5	374.0	371.8	369.8	368.9	366.9	366.8	370.1	370.0	368.7	371.3	370.5	359.3	370.3
9	351.3	353.3	362.3	374.2	384.5	387.3	380.7	379.8	382.2	384.7	384.1	378.0	374.3	372.4	370.9	370.0	369.6	369.8	370.6	371.6	371.7	371.2	364.8	353.4	372.2
10	346.1	344.0	350.8	359.1	373.1	388.4	391.9	393.4	388.3	382.2	378.1	375.4	373.2	371.7	370.3	368.7	368.8	369.5	371.0	372.1	371.7	368.6	358.3	350.7	370.2
11	349.7	349.4	353.9	366.4	382.0	393.3	398.0	395.7	389.6	385.4	381.4	377.7	374.6	372.7	371.9	371.7	371.0	371.1	371.5	371.3	371.4	369.8	363.4	349.7	373.0
12	343.8	345.2	357.1	370.1	381.0	392.4	397.4	397.2	393.6	385.4	379.8	376.5	373.6	372.7	371.7	370.6	369.5	368.6	369.1	370.0	370.9	373.5	371.5	360.0	373.4
13	351.1	344.5	348.7	358.1	370.5	383.6	385.6	383.1	380.7	376.4	374.5	375.0	372.2	370.2	368.2	366.9	366.9	367.2	368.0	368.5	369.8	371.4	366.1	357.3	368.5
14	353.6	347.6	349.0	362.1	376.8	388.9	386.5	382.3	379.0	376.6	374.6	372.2	370.6	368.8	367.8	367.7	368.1	368.9	369.6	369.4	369.7	370.7	365.6	355.1	369.2
15	347.6	342.1	344.5	357.5	374.0	384.5	387.4	387.3	380.5	374.3	371.6	371.9	371.3	371.2	370.5	369.2	370.2	369.3	369.3	370.0	369.8	367.0	361.6	353.4	368.2
16	343.7	341.8	341.2	351.8	373.8	384.7	390.6	390.6	389.0	386.4	380.7	378.2	373.7	369.4	367.5	366.5	367.0	369.4	368.1	368.6	367.3	366.4	364.9	363.3	369.3
17	361.8	358.8	358.6	368.6	370.6	375.6	377.3	377.3	373.2	376.2	375.5	372.0	371.5	369.8	368.9	368.5	369.2	368.1	368.5	369.8	370.8	372.7	374.0	367.0	370.2
18	361.1	357.5	357.4	361.0	361.0	366.7	371.1	371.1	369.7	373.6	374.8	372.9	371.7	370.6	369.6	369.3	368.5	367.5	367.2	367.0	368.1	369.5	371.1	368.3	367.8
19	366.2	362.8	365.8	369.2	369.1	374.3	379.5	381.1	377.1	378.2	375.2	371.5	371.4	368.1	364.7	364.6	364.1	363.2	366.1	371.7	371.1	370.1	375.0	364.3	370.2
20	353.6	346.1	352.1	364.4	364.4	366.7	377.9	387.9	385.2	376.2	373.1	370.3	370.1	365.0	361.5	365.2	355.5	362.1	366.6	370.4	378.1	379.3	375.1	364.1	368.0
21	358.5	354.6	350.4	356.2	356.2	365.2	369.3	372.2	373.4	377.8	376.1	372.3	368.6	364.9	363.1	364.5	365.2	365.7	365.1	365.5	366.1	365.7	367.3	363.7	365.3
22	359.2	360.2	361.3	367.8	367.8	372.0	380.3	378.6	372.8	373.6	374.5	370.3	369.3	366.0	367.2	364.7	366.3	366.2	366.9	367.4	370.3	373.1	372.1	365.5	368.9
23	354.0	349.3	348.1	356.1	356.1	364.0	365.1	363.4	364.3	369.0	368.8	368.6	365.5	364.5	365.8	365.5	366.2	366.7	369.0	369.0	369.5	367.7	361.6	355.0	363.0
24	351.5	350.4	353.5	361.4	361.4	369.4	364.9	362.1	373.8	381.2	376.5	371.4	369.5	369.1	368.2	368.9	368.4	370.0	371.5	368.5	369.3	367.6	370.0	371.5	367.1
25	368.9	365.5	365.3	367.2	367.1	362.4	362.1	368.3	378.9	383.0	379.9	374.7	371.1	368.1	366.4	365.6	365.3	366.8	368.2	367.2	367.7	364.8	360.5	359.3	368.1
26	357.9	361.5	366.8	374.6	374.6	376.3	375.0	374.6	372.7	376.5	371.6	369.2	369.7	367.8	364.6	365.7	366.6	367.7	368.2	365.4	364.0	362.1	358.2	354.0	367.7
27	353.0	360.2	367.8	372.6	372.5	375.4	374.7	373.7	379.7	380.8	373.9	370.6	370.6	369.8	369.1	368.3	367.8	367.8	367.8	367.1	366.6	366.0	363.9	364.7	369.3
28	368.2	371.3	372.1	375.3	375.2	374.0	366.6	362.6	369.8	377.6	374.6	371.3	369.5	368.5	368.9	368.5	367.6	366.9	366.4	366.9	366.6	365.7	363.7	355.8	368.9
HOURLY MEANS	354.7	353.4	356.5	364.1	371.4	378.6	380.7	380.7	380.2	379.9	377.2	374.4	372.3	370.1	368.7	368.2	367.6	367.7	368.4	368.5	369.1	369.2	366.5	359.4	369.5

Tabel 18 Nilai Variasi harian komponen D – *declination* (menit) Februari 2021

Tondano Magnetic Observatory																							Februari 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	31.3	31.4	31.69	32.45	33.94	34.95	35.17	34.51	33.91	33.36	33.30	33.11	32.91	32.75	32.49	32.37	32.13	32.13	32.30	32.31	32.40	32.49	31.96	30.60	32.75
2	29.8	29.5	29.66	30.09	31.27	32.03	32.95	33.24	33.34	33.64	33.36	33.07	32.86	32.43	32.15	32.24	32.20	32.26	32.18	32.30	32.44	32.2	31.6	31.2	32.00
3	31.0	31.2	31.4	32.59	33.39	33.79	33.71	33.80	33.71	33.63	33.40	33.19	33.01	32.82	32.61	32.59	32.20	32.01	32.05	31.96	31.99	32.47	32.77	31.87	32.63
4	30.9	30.3	31.13	31.83	32.16	32.13	32.18	32.20	32.70	33.07	33.18	32.85	32.74	32.57	32.52	32.43	32.38	32.29	32.24	32.22	32.14	32.21	32.34	31.95	32.20
5	31.7	31.6	31.47	30.80	31.56	32.78	33.16	33.25	33.63	33.59	33.07	32.99	32.62	32.53	32.41	32.32	32.32	32.34	32.37	32.31	32.31	32.46	32.04	31.36	32.37
6	30.8	30.9	31.27	31.70	32.23	32.88	33.16	33.39	33.33	33.24	33.16	33.08	32.82	32.66	32.48	32.26	32.44	32.16	31.99	31.57	31.78	32.14	31.72	31.39	32.27
7	31.6	32.1	32.49	32.90	34.20	34.95	34.71	34.34	34.03	33.69	33.40	33.32	32.82	32.55	32.43	32.38	32.36	32.23	32.23	32.11	32.08	32.04	31.74	30.89	32.82
8	30.2	30.0	30.38	31.19	32.30	33.69	34.10	34.30	34.12	33.54	33.14	32.85	32.71	32.52	32.34	32.26	32.08	32.07	32.36	32.35	32.24	32.46	32.40	31.42	32.38
9	30.7	30.9	31.65	32.69	33.59	33.85	33.28	33.21	33.42	33.65	33.60	33.06	32.74	32.57	32.44	32.36	32.32	32.34	32.41	32.49	32.51	32.46	31.90	30.91	32.54
10	30.3	30.1	30.64	31.37	32.59	33.94	34.26	34.39	33.95	33.42	33.06	32.83	32.64	32.51	32.39	32.25	32.26	32.32	32.45	32.54	32.51	32.24	31.33	30.67	32.37
11	30.6	30.5	30.91	32.00	33.36	34.36	34.78	34.59	34.07	33.70	33.36	33.03	32.76	32.59	32.51	32.5	32.4	32.4	32.5	32.5	32.5	32.3	31.8	30.56	32.61
12	30.0	30.1	31.17	32.31	33.27	34.27	34.72	34.72	34.41	33.69	33.20	32.92	32.67	32.59	32.50	32.40	32.30	32.23	32.28	32.36	32.44	32.66	32.48	31.47	32.64
13	30.7	30.1	30.44	31.26	32.36	33.52	33.71	33.49	33.29	32.92	32.78	32.83	32.56	32.39	32.22	32.10	32.10	32.12	32.19	32.23	32.35	32.48	32.02	31.25	32.22
14	30.9	30.4	30.49	31.65	32.93	34.00	33.80	33.44	33.15	32.93	32.76	32.55	32.41	32.25	32.17	32.16	32.19	32.26	32.32	32.30	32.33	32.41	31.97	31.05	32.28
15	30.4	29.9	30.10	31.23	32.67	33.60	33.87	33.87	33.28	32.73	32.50	32.52	32.46	32.46	32.40	32.29	32.37	32.29	32.29	32.35	32.32	32.09	31.63	30.90	32.19
16	30.0	29.9	29.80	30.70	32.63	33.62	34.16	34.16	34.06	33.83	33.32	33.09	32.69	32.32	32.16	32.07	32.11	32.31	32.20	32.24	32.12	32.05	31.90	31.76	32.30
17	31.6	31.4	31.32	32.19	32.4	32.8	33.0	33.0	32.6	32.90	32.84	32.54	32.50	32.34	32.27	32.24	32.29	32.19	32.22	32.33	32.43	32.60	32.71	32.10	32.37
18	31.6	31.2	31.22	31.54	31.54	32.04	32.42	32.44	32.34	32.68	32.78	32.62	32.51	32.41	32.33	32.30	32.23	32.14	32.11	32.10	32.18	32.31	32.45	32.20	32.15
19	32.0	31.7	31.96	32.25	32.25	32.70	33.16	33.31	32.98	33.07	32.81	32.49	32.48	32.21	31.91	31.90	31.87	31.79	32.05	32.53	32.45	32.37	32.81	31.88	32.37
20	30.9	30.3	30.77	31.84	31.84	32.05	33.03	33.93	33.70	32.91	32.64	32.40	32.37	31.94	31.64	31.95	31.10	31.68	32.08	32.41	33.08	33.19	32.82	31.86	32.18
21	31.4	31.0	30.64	31.14	31.14	31.92	32.29	32.55	32.67	33.06	32.90	32.58	32.26	31.94	31.78	31.91	31.96	32.00	31.94	31.98	32.02	31.99	32.12	31.8	31.96
22	31.4	31.5	31.58	32.16	32.16	32.52	33.26	33.11	32.62	32.70	32.77	32.40	32.31	32.03	32.12	31.90	32.04	32.03	32.09	32.13	32.38	32.63	32.54	31.96	32.26
23	31.0	30.5	30.42	31.12	31.12	31.81	31.92	31.78	31.87	32.29	32.27	32.26	31.99	31.90	32.00	31.98	32.04	32.08	32.28	32.27	32.32	32.16	31.63	31.05	31.75
24	30.7	30.6	30.91	31.59	31.59	32.29	31.91	31.68	32.72	33.38	32.97	32.52	32.34	32.29	32.21	32.26	32.23	32.37	32.49	32.24	32.30	32.16	32.37	32.50	32.11
25	32.3	32.0	31.93	32.10	32.10	31.68	31.67	32.23	33.17	33.53	33.26	32.80	32.47	32.21	32.05	31.98	31.96	32.09	32.20	32.13	32.17	31.91	31.53	31.43	32.20
26	31.3	31.6	32.05	32.74	32.74	32.89	32.78	32.76	32.60	32.93	32.51	32.29	32.34	32.17	31.89	31.99	32.06	32.16	32.19	31.94	31.82	31.65	31.32	30.94	32.15
27	30.8	31.5	32.13	32.55	32.55	32.80	32.74	32.67	33.20	33.30	32.70	32.41	32.41	32.34	32.28	32.21	32.16	32.16	32.16	32.10	32.06	32.00	31.82	31.89	32.29
28	32.2	32.4	32.50	32.77	32.77	32.67	32.0	31.7	32.3	33.0	32.8	32.5	32.3	32.22	32.26	32.22	32.14	32.08	32.04	32.08	32.05	31.98	31.80	31.09	32.25
HOURLY MEANS	31.00	30.88	31.15	31.81	32.45	33.09	33.28	33.29	33.26	33.23	32.99	32.75	32.56	32.38	32.25	32.21	32.15	32.16	32.22	32.23	32.27	32.29	32.05	31.43	32.31

Tabel 19 Nilai variasi harian komponen I – *inclination* (derajat) Februari 2021

Tondano Magnetic Observatory																							Februari 2021			
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS	
1	-12.93	-12.91	-12.91	-12.91	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.92	-12.93	
2	-12.91	-12.90	-12.90	-12.90	-12.92	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	
3	-12.92	-12.91	-12.90	-12.89	-12.89	-12.91	-12.91	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.95	-12.94	-12.93
4	-12.92	-12.91	-12.91	-12.91	-12.91	-12.92	-12.93	-12.93	-12.94	-12.94	-12.94	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93
5	-12.93	-12.92	-12.91	-12.89	-12.89	-12.90	-12.91	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93
6	-12.93	-12.93	-12.93	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.93	-12.93	-12.93	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93
7	-12.92	-12.91	-12.90	-12.90	-12.91	-12.92	-12.94	-12.94	-12.94	-12.94	-12.95	-12.95	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93
8	-12.93	-12.92	-12.92	-12.91	-12.91	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.93	-12.94	-12.93	-12.93	-12.94	-12.94	-12.94	-12.93	-12.94	-12.94	-12.93	-12.93
9	-12.93	-12.93	-12.93	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93
10	-12.92	-12.91	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93	-12.92	-12.92
11	-12.93	-12.93	-12.92	-12.90	-12.90	-12.91	-12.91	-12.91	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.92	-12.92
12	-12.91	-12.90	-12.89	-12.89	-12.89	-12.91	-12.92	-12.92	-12.93	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.93	-12.92	-12.92
13	-12.92	-12.90	-12.89	-12.89	-12.89	-12.91	-12.92	-12.93	-12.93	-12.93	-12.94	-12.95	-12.95	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93
14	-12.92	-12.91	-12.90	-12.91	-12.92	-12.93	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93
15	-12.93	-12.92	-12.90	-12.90	-12.90	-12.91	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93
16	-12.92	-12.91	-12.90	-12.88	-12.89	-12.90	-12.92	-12.92	-12.93	-12.95	-12.95	-12.95	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93
17	-12.93	-12.92	-12.91	-12.90	-12.91	-12.91	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93
18	-12.93	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93
19	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.93	-12.93	-12.94	-12.94	-12.93	-12.93	-12.94	-12.93	-12.94	-12.94	-12.94	-12.95	-12.95	-12.96	-12.95	-12.94	-12.95	-12.95	-12.94	-12.94
20	-12.94	-12.92	-12.91	-12.92	-12.92	-12.92	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.95	-12.93	-12.94	-12.95	-12.95	-12.95	-12.95	-12.95	-12.95	-12.95	-12.94
21	-12.95	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.95	-12.94	-12.94	-12.94	-12.94	-12.94	-12.95	-12.95	-12.95	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94
22	-12.93	-12.93	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93
23	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.95	-12.95	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.94
24	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.95	-12.95	-12.95	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94
25	-12.94	-12.93	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93
26	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.93	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.93
27	-12.92	-12.92	-12.91	-12.90	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.92
28	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.93
HOURLY MEANS	-12.93	-12.92	-12.91	-12.91	-12.91	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93

3. Gangguan badai magnet

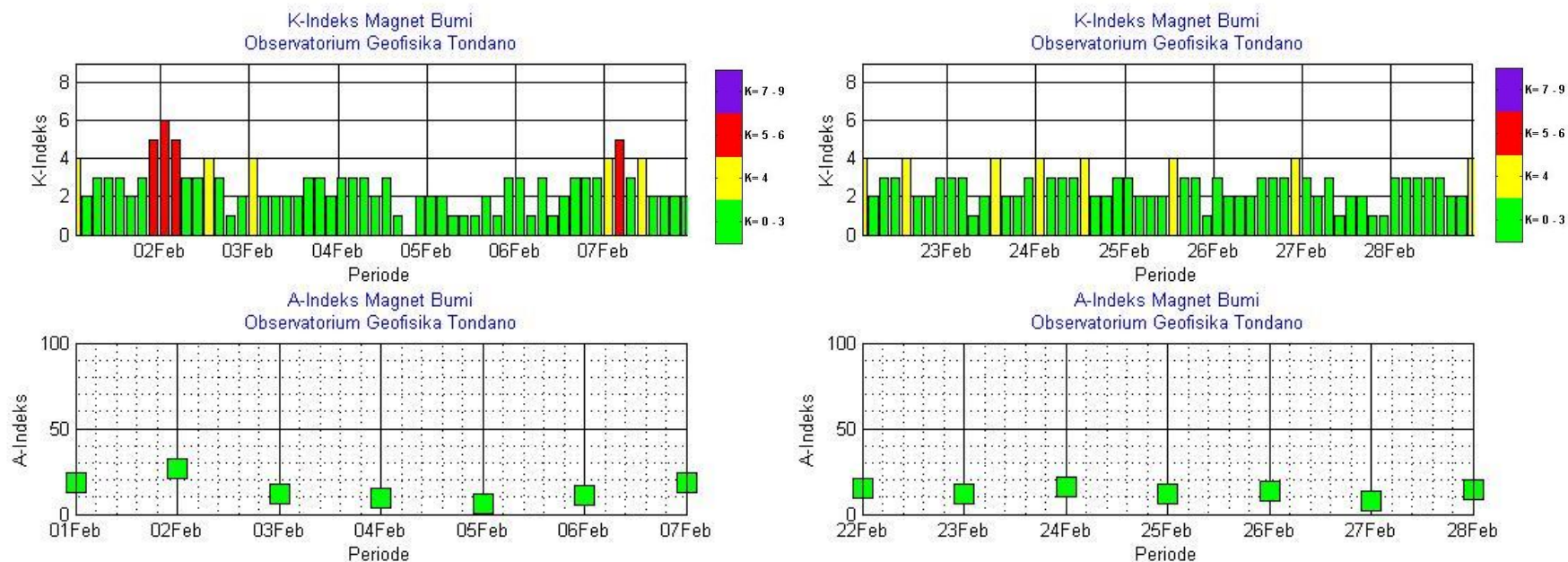
Tabel 20 Monitoring waktu gangguan
pada pengamatan magnet bumi Februari 2021

Kejadian rekaman magnet bumi							Durasi gangguan	Keterangan
No	Hari			Waktu				
	Tanggal	Bulan	Tahun	Jam	Menit	Detik		
1	1	2	2021					
2	2	2	2021					
3	3	2	2021					
4	4	2	2021					
5	5	2	2021					
6	6	2	2021					
7	7	2	2021					
8	8	2	2021					
9	9	2	2021					
10	10	2	2021					
11	11	2	2021					
12	12	2	2021					
13	13	2	2021					
14	14	2	2021					
15	15	2	2021					
16	16	2	2021					
17	17	2	2021					
18	18	2	2021					
19	19	2	2021					
20	20	2	2021					
21	21	2	2021					
22	22	2	2021					
23	23	2	2021					
24	24	2	2021					
25	25	2	2021					
26	26	2	2021					
27	27	2	2021					
28	28	2	2021					

Tabel 21 Hasil analisa K-indeks dan A-indeks
Februari 2021

Tanggal	K-1	K-2	K-3	K-4	K-5	K-6	K-7	K-8	A Indeks	Keterangan
1	4	2	3	3	3	2	3	5	18.625	Tenang
2	6	5	3	3	4	3	1	2	26.250	Tenang
3	4	2	2	2	2	3	3	2	11.500	Tenang
4	3	3	3	2	3	1	0	2	9.625	Tenang
5	2	2	1	1	1	2	1	3	6.000	Tenang
6	3	1	3	1	2	3	3	3	11.000	Tenang
7	4	5	3	4	2	2	2	2	18.125	Tenang
8	3	1	1	1	2	2	2	3	7.500	Tenang
9	3	2	2	2	2	1	0	2	6.625	Tenang
10	1	1	0	1	0	0	0	0	1.125	Tenang
11	3	2	2	2	3	3	3	4	13.500	Tenang
12	5	4	3	3	3	4	3	2	21.125	Tenang
13	5	4	3	5	2	2	1	2	20.250	Tenang
14	3	2	3	1	2	2	1	2	8.000	Tenang
15	2	1	2	2	3	3	3	3	10.500	Tenang
16	3	5	5	4	2	3	1	3	22.250	Tenang
17	3	3	1	2	1	3	2	2	9.000	Tenang
18	3	3	2	2	2	1	1	2	8.000	Tenang
19	3	1	2	1	4	4	5	4	19.625	Tenang
20	3	3	4	3	4	3	1	3	16.500	Tenang
21	4	3	5	3	3	3	1	2	18.125	Tenang
22	4	2	3	3	4	2	2	3	15.000	Tenang
23	3	3	1	2	4	2	2	3	12.000	Tenang
24	4	3	3	3	4	2	2	3	16.000	Tenang
25	3	2	2	2	4	3	3	1	12.000	Tenang
26	3	2	2	2	3	3	3	4	13.500	Tenang
27	3	2	3	1	2	2	1	1	7.500	Tenang
28	3	3	3	3	3	2	2	4	14.500	Tenang

Gambar 23 Plot hasil analisa K-indeks dan A-indeks saat terjadi gangguan magnet bumi di bulan Februari 2021



C. Maret 2021

1. Nilai variasi harian bulan Maret 2021

Tabel 22 Nilai variasi harian komponen H – *horizontal* (nT) Maret 2021

Tondano Magnetic Observatory

Maret 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39365.4	39380.8	39382.7	39357.4	39324.3	39296.5	39276.0	39279.6	39287.2	39288.1	39281.7	39295.1	39295.7	39301.2	39302.8	39301.6	39308.7	39305.4	39302.0	39303.8	39307.9	39313.4	39318.5	39320.8	39312.3
2	39330.4	39344.1	39361.0	39364.7	39359.4	39350.5	39340.5	39332.3	39320.1	39321.4	39323.2	39317.5	39312.5	39322.5	39315.6	39300.9	39326.5	39325.6	39316.7	39315.3	39322.6	39329.7	39332.6	39322.3	39329.5
3	39330.0	39344.7	39341.6	39339.2	39324.0	39307.6	39289.1	39276.4	39283.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39315.1
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	39356.1	39382.9	39393.8	39389.0	39367.8	39354.3	39337.0	39330.7	39319.9	39314.6	39314.8	39322.0	39327.5	39320.4	39320.5	39321.4	39319.1	39322.8	39327.3	39325.9	39324.3	39323.8	39323.7	39331.3	39336.3
7	39342.1	39354.2	39367.9	39374.4	39374.2	39363.8	39353.4	39343.7	39334.8	39324.4	39320.0	39322.7	39323.5	39324.6	39325.0	39322.9	39321.4	39326.2	39323.2	39323.1	39326.8	39324.7	39324.9	39329.8	39336.3
8	39341.0	39353.2	39364.0	39371.5	39371.2	39358.8	39348.8	39339.0	39332.3	39332.0	39331.7	39330.4	39327.8	39326.4	39327.0	39327.1	39329.1	39326.2	39332.8	39332.2	39331.8	39329.8	39330.3	39328.8	39338.5
9	39336.3	39344.2	39354.0	39360.6	39359.9	39350.1	39340.4	39335.5	39331.7	39327.5	39326.0	39326.6	39327.8	39327.1	39324.9	39324.6	39325.2	39327.7	39329.8	39331.3	39331.6	39333.5	39337.4	39348.3	39335.9
10	39362.6	39374.7	39378.7	39381.7	39381.5	39372.6	39355.0	39344.8	39341.0	39337.4	39335.8	39336.3	39335.5	39335.5	39335.5	39334.6	39334.3	39333.2	39334.4	39336.4	39335.9	39337.8	39340.2	39346.8	39347.6
11	39361.1	39372.9	39381.4	39385.1	39380.2	39368.5	39358.4	39347.7	39340.1	39336.1	39335.6	39335.3	39335.5	39336.0	39333.8	39332.6	39332.6	39334.3	39336.1	39340.6	39345.1	39345.0	39344.7	39345.5	39348.5
12	39352.8	39364.0	39375.8	39386.6	39379.0	39359.5	39331.6	39304.2	39299.3	39304.2	39300.6	39304.3	39318.5	39322.0	39321.2	39322.3	39320.6	39320.0	39336.7	39331.2	39330.5	39331.2	39331.7	39328.9	39332.4
13	39322.2	39332.9	39360.0	39381.6	39356.5	39329.0	39305.9	39313.6	39312.6	39305.2	39314.8	39327.8	39329.1	39326.6	39323.7	39321.0	39319.4	39322.3	39327.6	39317.7	39319.1	39322.6	39326.0	39330.4	39327.0
14	39341.7	39353.7	39354.0	39352.3	39341.9	39314.9	39295.9	39298.1	39286.6	39275.8	39290.2	39298.3	39307.9	39313.2	39318.2	39313.0	39308.8	39315.5	39312.8	39312.1	39312.9	39317.0	39316.5	39327.2	39315.8
15	39344.5	39360.5	39366.5	39367.1	39360.2	39342.0	39325.2	39317.3	39312.8	39311.8	39312.2	39316.5	39318.3	39319.3	39317.7	39318.9	39317.9	39319.4	39320.3	39319.6	39320.1	39320.8	39323.5	39333.5	39328.6
16	39347.6	39364.4	39375.3	39379.1	39371.4	39354.3	39341.4	39341.4	39328.1	39326.1	39326.0	39326.0	39327.1	39327.6	39325.1	39324.0	39327.9	39328.5	39330.3	39330.0	39328.3	39328.6	39332.4	39340.0	39338.8
17	39353.5	39367.1	39382.1	39390.0	39387.8	39371.0	39355.3	39355.3	39338.1	39334.2	39333.3	39332.2	39332.1	39332.4	39331.5	39328.6	39326.4	39319.3	39319.3	39324.1	39325.5	39327.3	39332.8	39343.6	39343.4
18	39359.1	39375.5	39387.2	39393.9	39389.7	39389.7	39372.4	39359.0	39340.6	39337.1	39334.0	39334.0	39331.7	39331.0	39330.6	39330.7	39330.7	39331.4	39330.9	39332.8	39332.7	39330.6	39335.0	39342.8	39348.5
19	39358.7	39376.8	39389.6	39392.9	39383.1	39383.1	39366.2	39346.9	39323.3	39323.3	39322.9	39319.4	39316.5	39315.8	39318.5	39319.5	39321.1	39324.2	39330.3	39333.1	39333.1	39335.5	39344.1	39358.0	39343.2
20	39380.0	39395.9	39399.1	39416.8	39421.5	39421.5	39402.8	39359.8	39264.7	39256.0	39239.5	39261.4	39261.9	39277.2	39293.5	39296.4	39300.4	39312.1	39308.8	39303.9	39306.7	39307.3	39308.7	39313.3	39325.4
21	39322.7	39332.7	39338.1	39344.0	39349.6	39349.6	39343.3	39334.0	39323.9	39321.5	39323.6	39321.6	39313.1	39301.4	39287.4	39289.0	39305.1	39309.1	39317.2	39309.5	39309.2	39313.9	39316.2	39321.4	39320.7
22	39333.3	39347.2	39356.1	39354.8	39347.9	39347.9	39333.8	39324.8	39318.8	39316.1	39314.2	39316.0	39315.1	39313.2	39311.6	39313.5	39315.3	39314.7	39317.4	39320.1	39323.4	39325.9	39330.4	39333.3	39326.9
23	39343.5	39348.0	39359.6	39363.6	39354.6	39354.6	39342.8	39330.8	39316.3	39312.8	39311.4	39314.6	39319.5	39317.4	39319.9	39324.2	39315.1	39316.5	39318.2	39323.6	39321.4	39321.9	39324.7	39330.5	39329.4
24	39339.4	39350.9	39355.8	39363.8	39362.6	39362.6	39352.5	39330.0	39311.3	39307.1	39300.7	39297.3	39298.7	39307.9	39316.3	39321.4	39324.5	39328.2	39329.4	39333.3	39331.2	39325.5	39332.6	39327.1	39329.6
25	39325.8	39333.0	39349.1	39363.1	39361.9	39361.9	39351.9	39334.1	39304.2	39313.0	39312.5	39312.8	39308.7	39308.2	39300.0	39306.5	39312.7	39316.8	39318.5	39321.9	39324.2	39328.1	39327.4	39334.8	39326.3
26	39341.7	39349.9	39362.1	39369.8	39357.5	39357.5	39343.1	39327.3	39294.1	39296.7	39299.5	39295.7	39294.4	39295.5	39296.9	39299.8	39300.9	39306.8	39312.0	39316.0	39318.3	39318.2	39320.9	39326.5	39320.9
27	39339.3	39352.4	39364.3	39369.9	39367.0	39367.0	39354.0	39343.9	39327.8	39323.6	39324.4	39325.6	39326.0	39325.5	39322.9	39321.8	39323.6	39326.3	39328.7	39332.7	39336.8	39345.8	39348.1	39341.2	39339.1
28	39347.2	39360.7	39377.1	39386.8	39382.3	39382.3	39375.2	39356.1	39327.6	39326.0	39324.7	39326.4	39325.6	39325.9	39325.3	39323.1	39322.9	39322.2	39327.3	39329.1	39329.9	39330.1	39331.1	39338.9	39341.8
29	39353.4	39368.0	39381.1	39383.6	39376.2	39376.2	39361.4	39344.3	39327.5	39327.9	39329.5	39330.3	39328.9	39327.5	39324.3	39323.4	39324.9	39324.9	39325.5	39326.2	39326.6	39327.5	39330.8	39336.4	39341.1
30	39346.6	39360.6	39371.7	39377.3	39370.0	39370.0	39360.1	39350.3	39338.2	39337.0	39336.5	39337.4	39338.3	39337.1	39335.4	39334.8	39334.2	39333.1	39331.7	39336.9	39335.2	39333.0	39337.1	39348.9	39345.5
31	39365.1	39382.5	39389.0	39387.9	39374.3	39351.5	39329.2	39313.8	39304.5	39306.0	39310.4	39315.7	39319.8	39314.3	39309.7	39314.6	39333.3	39327.2	39327.7	39330.2	39330.8	39333.2	39331.7	39332.0	39334.8
HOURLY MEANS	39346.3	39359.6	39369.6	39374.1	39366.8	39357.5	39342.8	39331.5	39316.9	39315.8	39315.3	39317.8	39318.5	39319.0	39318.4	39318.3	39320.8	39322.1	39324.0	39324.7	39325.8	39327.2	39329.8	39334.4	39333.1

Tabel 23 Nilai variasi harian komponen Z – vertical (nT) Maret 2021

Tondano Magnetic Observatory

Maret 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-9024.1	-9019.5	-9011.5	-9009.8	-9019.4	-9027.8	-9029.1	-9030.6	-9030.6	-9025.2	-9023.6	-9027.7	-9029.1	-9030.4	-9027.6	-9028.0	-9028.3	-9027.8	-9029.0	-9032.1	-9032.8	-9028.9	-9028.4	-9026.6	-9026.2
2	-9024.2	-9026.4	-9030.0	-9028.0	-9025.0	-9026.0	-9024.3	-9022.5	-9022.5	-9024.5	-9026.4	-9023.0	-9024.2	-9029.4	-9025.2	-9025.0	-9038.6	-9024.1	-9023.8	-9027.0	-9036.6	-9033.1	-9031.2	-9025.8	-9026.9
3	-9025.6	-9022.4	-9024.5	-9022.5	-9024.2	-9021.9	-9018.1	-9019.4	-9019.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-9022.0
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-9015.5	-9016.2	-9008.0	-9014.0	-9022.2	-9025.3	-9026.3	-9024.7	-9024.7	-9023.2	-9024.3	-9024.1	-9024.3	-9025.0	-9025.8	-9026.1	-9027.5	-9029.0	-9029.3	-9027.5	-9027.0	-9025.8	-9024.9	-9023.6	-9023.5
7	-9024.7	-9028.6	-9027.7	-9027.4	-9020.7	-9019.1	-9016.6	-9016.4	-9016.4	-9017.9	-9021.0	-9022.9	-9024.1	-9025.0	-9025.2	-9024.1	-9025.0	-9029.9	-9025.7	-9028.3	-9027.4	-9024.8	-9029.0	-9025.4	-9023.9
8	-9021.1	-9019.5	-9016.8	-9015.9	-9012.0	-9009.7	-9011.7	-9012.1	-9012.1	-9020.3	-9021.9	-9023.2	-9023.5	-9024.4	-9024.5	-9024.7	-9026.2	-9025.0	-9029.9	-9026.4	-9025.8	-9026.1	-9028.8	-9028.7	-9021.3
9	-9030.4	-9026.1	-9025.4	-9028.2	-9021.6	-9016.3	-9016.0	-9017.4	-9017.4	-9020.5	-9021.7	-9023.5	-9024.9	-9024.2	-9024.5	-9025.5	-9026.7	-9027.9	-9027.2	-9027.0	-9026.7	-9026.0	-9026.5	-9029.2	-9024.2
10	-9030.3	-9026.8	-9025.7	-9027.4	-9028.7	-9026.4	-9020.8	-9024.2	-9024.2	-9022.5	-9022.0	-9022.7	-9022.8	-9023.4	-9023.9	-9024.1	-9025.1	-9024.9	-9026.5	-9026.7	-9026.5	-9026.5	-9024.5	-9022.4	-9025.0
11	-9019.8	-9018.1	-9016.5	-9018.1	-9019.7	-9020.7	-9024.7	-9022.6	-9022.6	-9023.2	-9021.7	-9023.0	-9024.1	-9024.4	-9024.0	-9024.9	-9026.6	-9027.2	-9027.4	-9028.3	-9028.6	-9026.7	-9027.3	-9022.7	-9023.5
12	-9019.5	-9019.9	-9022.3	-9020.8	-9017.5	-9015.7	-9012.7	-9011.3	-9011.3	-9022.0	-9020.7	-9026.0	-9026.5	-9023.8	-9024.6	-9023.7	-9025.7	-9025.2	-9032.1	-9022.1	-9025.9	-9028.9	-9032.0	-9030.9	-9022.6
13	-9030.4	-9028.5	-9022.5	-9016.7	-9009.2	-9009.8	-9019.9	-9030.5	-9030.5	-9024.6	-9029.7	-9027.1	-9023.7	-9022.6	-9022.2	-9023.6	-9025.4	-9025.9	-9027.4	-9024.3	-9030.2	-9027.2	-9024.3	-9022.5	-9024.1
14	-9020.9	-9018.6	-9010.5	-9012.4	-9011.2	-9007.9	-9014.9	-9023.8	-9023.8	-9021.4	-9026.9	-9025.6	-9026.6	-9024.7	-9025.2	-9023.6	-9023.7	-9031.9	-9025.0	-9028.1	-9029.3	-9028.8	-9027.6	-9022.6	-9022.3
15	-9017.0	-9014.3	-9012.0	-9010.5	-9008.7	-9011.4	-9017.7	-9022.0	-9022.1	-9021.3	-9022.2	-9022.1	-9022.8	-9022.7	-9022.6	-9023.5	-9023.0	-9026.1	-9025.1	-9024.8	-9025.4	-9025.3	-9026.3	-9025.8	-9020.6
16	-9023.8	-9020.5	-9013.1	-9008.3	-9006.8	-9015.2	-9021.4	-9021.4	-9021.4	-9020.8	-9021.8	-9022.1	-9022.7	-9022.8	-9022.3	-9023.8	-9025.9	-9025.8	-9026.1	-9025.8	-9024.7	-9023.3	-9022.0	-9019.7	-9020.9
17	-9017.8	-9018.3	-9016.9	-9009.3	-9001.5	-9002.3	-9006.2	-9006.2	-9006.2	-9012.9	-9016.5	-9019.1	-9021.3	-9021.9	-9022.3	-9023.8	-9022.8	-9024.2	-9025.8	-9026.9	-9025.4	-9024.3	-9026.8	-9027.0	-9017.7
18	-9025.2	-9017.9	-9012.6	-9016.1	-9016.1	-9010.4	-9006.7	-9007.5	-9007.5	-9016.2	-9018.1	-9019.9	-9019.6	-9021.6	-9021.9	-9023.1	-9023.9	-9024.9	-9025.5	-9025.7	-9025.5	-9024.7	-9030.2	-9030.8	-9019.6
19	-9027.3	-9017.4	-9009.9	-9012.2	-9012.2	-9010.8	-9011.8	-9012.6	-9012.6	-9022.0	-9022.3	-9022.2	-9021.8	-9023.1	-9024.6	-9024.7	-9025.3	-9026.0	-9027.2	-9026.0	-9026.0	-9026.0	-9028.8	-9029.0	-9020.9
20	-9025.9	-9021.3	-9016.7	-9020.5	-9020.5	-9019.1	-9012.6	-9006.6	-9006.6	-9018.7	-9018.5	-9032.8	-9027.6	-9028.5	-9030.1	-9025.4	-9027.1	-9028.6	-9024.4	-9026.0	-9028.2	-9027.5	-9026.8	-9026.5	-9022.8
21	-9030.7	-9031.2	-9029.8	-9026.0	-9026.0	-9025.3	-9021.4	-9020.1	-9020.1	-9021.1	-9021.3	-9019.9	-9017.6	-9015.5	-9019.5	-9024.6	-9032.9	-9025.5	-9026.6	-9024.7	-9026.1	-9031.0	-9031.3	-9027.5	-9024.8
22	-9023.3	-9018.5	-9012.4	-9013.0	-9013.0	-9017.4	-9015.6	-9018.6	-9018.6	-9021.1	-9020.7	-9021.6	-9020.9	-9021.3	-9021.7	-9024.2	-9023.3	-9023.7	-9025.4	-9025.5	-9025.8	-9025.6	-9028.7	-9027.5	-9021.2
23	-9024.6	-9021.2	-9018.3	-9011.2	-9011.2	-8999.9	-9004.9	-9010.1	-9010.1	-9019.3	-9018.8	-9020.9	-9022.3	-9021.2	-9024.2	-9022.4	-9021.4	-9024.9	-9026.3	-9027.0	-9025.2	-9026.8	-9029.6	-9028.4	-9019.6
24	-9025.8	-9023.2	-9015.4	-9013.5	-9013.5	-9010.5	-9012.9	-9013.4	-9013.4	-9022.4	-9022.6	-9022.6	-9022.9	-9024.2	-9024.4	-9023.5	-9024.0	-9024.6	-9024.9	-9026.3	-9022.9	-9023.3	-9027.2	-9023.6	-9020.9
25	-9023.0	-9023.9	-9022.9	-9018.4	-9018.4	-9014.6	-9017.2	-9015.2	-9015.2	-9024.7	-9021.4	-9021.1	-9020.6	-9020.3	-9023.4	-9025.4	-9025.0	-9025.4	-9025.2	-9026.4	-9026.3	-9026.2	-9024.2	-9021.2	-9021.9
26	-9015.1	-9010.8	-9013.8	-9017.4	-9017.4	-9014.6	-9020.0	-9022.5	-9022.5	-9026.0	-9024.9	-9023.3	-9024.0	-9024.5	-9024.7	-9024.7	-9025.4	-9026.7	-9027.2	-9027.8	-9026.9	-9026.6	-9028.7	-9027.8	-9022.6
27	-9024.6	-9018.4	-9013.8	-9010.8	-9010.8	-9006.4	-9006.7	-9012.3	-9012.3	-9020.4	-9021.7	-9021.8	-9022.1	-9022.2	-9021.9	-9023.3	-9024.6	-9025.3	-9024.9	-9026.1	-9026.3	-9026.6	-9021.5	-9024.6	-9019.5
28	-9025.1	-9024.5	-9024.5	-9015.9	-9015.9	-9011.6	-9014.4	-9014.1	-9014.1	-9022.4	-9021.8	-9023.0	-9022.5	-9023.3	-9023.2	-9023.7	-9024.9	-9025.4	-9027.0	-9024.5	-9024.3	-9024.7	-9028.2	-9029.1	-9022.0
29	-9029.1	-9028.0	-9025.3	-9022.9	-9022.9	-9018.3	-9013.6	-9015.7	-9015.7	-9024.8	-9025.0	-9023.6	-9022.3	-9022.1	-9022.3	-9023.9	-9025.3	-9025.2	-9026.0	-9025.6	-9025.4	-9024.8	-9024.6	-9023.4	-9023.2
30	-9022.8	-9016.5	-9015.3	-9014.9	-9014.9	-9009.1	-9006.6	-9012.6	-9019.8	-9022.0	-9021.7	-9022.1	-9022.5	-9021.5	-9021.5	-9022.6	-9023.7	-9023.7	-9024.1	-9024.4	-9023.3	-9023.2	-9022.6	-9023.0	-9019.8
31	-9021.7	-9016.8	-9009.6	-9004.6	-9004.8	-9005.5	-9007.5	-9014.4	-9017.7	-9021.7	-9022.3	-9022.3	-9021.8	-9021.3	-9021.9	-9027.7	-9028.0	-9022.8	-9024.7	-9024.9	-9025.2	-9023.8	-9023.1	-9024.0	-9019.1
HOURLY MEANS	-9023.8	-9021.2	-9018.1	-9016.8	-9016.1	-9014.8	-9015.6	-9017.3	-9017.6	-9021.6	-9022.2	-9023.2	-9023.2	-9023.4	-9023.8	-9024.4	-9025.9	-9026.0	-9026.4	-9026.3	-9026.8	-9026.3	-9027.0	-9025.7	-9022.2

Tabel 24 Nilai Variasi harian komponen F – total (nT) Maret 2021

Tondano Magnetic Observatory																							Maret 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	40386.4	40400.4	40400.6	40375.5	40345.4	40320.2	40300.5	40304.3	40311.7	40311.4	40304.8	40318.7	40319.7	40325.3	40326.2	40325.2	40332.2	40328.8	40325.8	40328.2	40332.4	40336.9	40341.7	40343.6	40335.2
2	40352.4	40366.3	40383.6	40386.7	40380.9	40372.4	40362.2	40353.9	40342.0	40343.7	40345.9	40339.6	40335.0	40345.8	40338.2	40323.8	40351.8	40347.7	40339.0	40338.4	40347.6	40353.7	40356.1	40344.9	40352.1
3	40352.3	40365.9	40363.4	40360.6	40346.1	40329.6	40310.8	40298.7	40305.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40337.0
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	40375.5	40401.8	40410.6	40407.3	40388.5	40375.9	40359.3	40352.8	40342.3	40336.8	40337.2	40344.2	40349.6	40342.8	40343.2	40344.1	40342.1	40346.1	40350.6	40348.8	40347.1	40346.3	40346.0	40353.1	40358.0
7	40363.9	40376.6	40389.8	40396.0	40394.3	40383.8	40373.1	40363.7	40355.0	40345.2	40341.5	40344.6	40345.7	40346.9	40347.4	40345.1	40343.8	40349.6	40345.7	40346.2	40349.7	40347.0	40348.1	40352.0	40358.1
8	40362.0	40373.6	40383.5	40390.6	40389.4	40376.8	40367.5	40358.1	40351.6	40353.1	40353.1	40352.2	40349.8	40348.5	40349.1	40349.3	40351.6	40348.5	40356.0	40354.6	40354.2	40352.2	40353.3	40351.9	40359.6
9	40359.5	40366.3	40375.7	40382.8	40380.6	40369.9	40360.4	40355.9	40352.2	40348.7	40347.6	40348.5	40350.0	40349.2	40347.2	40347.0	40347.9	40350.6	40352.5	40353.9	40354.1	40355.8	40359.7	40370.9	40357.8
10	40385.1	40396.2	40399.8	40403.1	40403.2	40394.0	40375.6	40366.4	40362.8	40358.9	40357.1	40357.8	40357.1	40357.1	40357.3	40356.4	40356.4	40355.3	40356.8	40358.8	40358.3	40360.1	40362.0	40368.0	40369.3
11	40381.4	40392.5	40400.5	40404.4	40399.9	40388.7	40379.8	40368.9	40361.5	40357.8	40356.9	40356.9	40357.3	40357.8	40355.6	40354.7	40355.1	40356.8	40358.7	40363.2	40367.7	40367.2	40367.0	40366.8	40369.9
12	40373.2	40384.2	40396.2	40406.4	40398.3	40378.9	40351.0	40324.0	40319.2	40326.4	40322.6	40327.4	40341.4	40344.1	40343.5	40344.4	40343.1	40342.5	40360.3	40352.7	40352.9	40354.2	40355.5	40352.4	40353.9
13	40345.8	40355.8	40380.9	40400.6	40374.5	40347.8	40327.6	40337.5	40336.5	40328.0	40338.4	40350.5	40351.1	40348.4	40345.4	40343.1	40341.9	40344.9	40350.4	40340.0	40342.7	40345.4	40348.1	40352.0	40349.1
14	40362.7	40373.8	40372.4	40371.1	40360.7	40333.6	40316.7	40320.8	40309.6	40298.5	40313.8	40321.4	40331.0	40335.7	40340.7	40335.3	40331.2	40339.6	40335.5	40335.5	40336.5	40340.4	40339.7	40348.9	40337.7
15	40364.5	40379.5	40384.9	40385.1	40377.9	40360.9	40345.9	40339.1	40334.8	40333.7	40334.2	40338.4	40340.3	40341.2	40339.6	40341.0	40340.0	40342.1	40342.7	40342.0	40342.6	40343.3	40346.2	40355.8	40349.8
16	40369.1	40384.8	40393.7	40396.3	40388.5	40373.7	40362.5	40362.5	40349.5	40347.5	40347.6	40347.6	40348.8	40349.3	40346.8	40346.1	40350.3	40350.9	40352.7	40352.3	40350.4	40350.4	40353.9	40360.8	40359.8
17	40373.5	40386.8	40401.2	40407.1	40403.2	40387.1	40372.6	40372.6	40355.9	40353.6	40353.5	40353.0	40353.4	40353.8	40353.1	40350.6	40348.1	40341.6	40342.0	40346.8	40347.9	40349.4	40355.3	40365.9	40363.7
18	40380.6	40395.0	40405.2	40412.4	40408.4	40407.2	40389.4	40376.6	40358.6	40357.1	40354.6	40354.9	40352.7	40352.4	40352.1	40352.5	40352.5	40353.5	40353.2	40355.1	40354.9	40352.7	40358.2	40366.0	40369.0
19	40380.7	40396.1	40406.9	40410.7	40401.1	40400.8	40384.6	40365.9	40342.9	40345.0	40344.6	40341.3	40338.3	40337.9	40340.9	40341.9	40343.6	40346.8	40352.9	40355.5	40355.5	40357.8	40366.8	40380.4	40364.1
20	40401.1	40415.6	40417.7	40435.8	40440.4	40440.1	40420.4	40377.1	40284.4	40278.7	40262.6	40287.1	40286.4	40301.5	40317.8	40319.5	40323.8	40335.6	40331.4	40327.0	40330.2	40330.6	40331.9	40336.2	40347.2
21	40346.3	40356.2	40361.2	40366.1	40371.6	40371.4	40364.4	40355.0	40345.1	40343.0	40345.1	40342.8	40334.0	40322.2	40309.4	40312.2	40329.7	40331.9	40340.1	40332.1	40332.2	40337.9	40340.2	40344.3	40343.1
22	40355.0	40367.5	40374.8	40373.7	40367.0	40368.0	40353.8	40345.7	40339.9	40337.8	40335.9	40337.8	40336.7	40335.0	40333.5	40335.9	40337.5	40337.0	40340.0	40342.6	40346.0	40348.3	40353.4	40355.9	40348.3
23	40365.2	40368.9	40379.5	40381.9	40373.1	40370.6	40360.1	40349.6	40335.5	40334.1	40332.7	40336.3	40341.3	40339.1	40342.2	40346.0	40336.9	40339.0	40341.0	40346.4	40343.9	40344.7	40348.1	40353.4	40350.4
24	40361.5	40372.1	40375.2	40382.6	40381.4	40380.7	40371.4	40349.6	40331.4	40329.3	40323.0	40319.7	40321.3	40330.5	40338.7	40343.4	40346.6	40350.4	40351.6	40355.7	40352.9	40347.5	40355.3	40349.0	40350.9
25	40347.7	40354.9	40370.4	40383.0	40381.8	40380.9	40371.8	40354.0	40324.8	40335.6	40334.3	40334.6	40330.4	40329.9	40322.6	40329.4	40335.4	40339.5	40341.1	40344.6	40346.8	40350.6	40349.5	40356.0	40347.9
26	40361.4	40368.4	40381.0	40389.3	40377.3	40376.6	40363.8	40349.0	40316.7	40320.0	40322.4	40318.3	40317.3	40318.4	40319.8	40322.7	40323.9	40329.9	40335.1	40339.1	40341.2	40341.0	40344.1	40349.4	40342.8
27	40361.2	40372.6	40383.1	40387.9	40385.0	40384.1	40371.5	40362.9	40347.2	40344.9	40346.0	40347.1	40347.7	40347.1	40344.5	40343.8	40345.9	40348.6	40350.9	40355.1	40359.1	40368.0	40369.0	40363.0	40359.8
28	40368.9	40382.0	40398.0	40405.5	40401.1	40400.2	40393.9	40375.2	40347.4	40347.7	40346.3	40348.2	40347.4	40347.8	40347.2	40345.2	40345.2	40344.6	40350.1	40351.2	40351.9	40352.2	40354.0	40361.8	40363.0
29	40375.9	40389.9	40402.1	40403.9	40396.7	40395.7	40380.2	40364.0	40347.7	40350.1	40351.7	40352.1	40350.5	40349.1	40346.1	40345.5	40347.3	40347.3	40348.1	40348.7	40349.0	40349.7	40352.9	40358.1	40362.6
30	40367.8	40380.1	40390.6	40396.1	40388.9	40387.6	40377.4	40369.2	40359.0	40358.3	40357.8	40358.8	40359.8	40358.3	40356.7	40356.3	40356.0	40354.9	40353.6	40358.8	40356.8	40354.7	40358.5	40370.1	40366.1
31	40385.7	40401.6	40406.3	40404.1	40390.8	40368.8	40347.5	40334.1	40325.7	40328.0	40332.5	40337.7	40341.5	40336.1	40331.7	40337.7	40356.1	40349.0	40349.9	40352.4	40353.0	40355.1	40353.4	40353.9	40355.5
HOURLY MEANS	40367.8	40380.2	40389.3	40393.3	40386.1	40376.8	40362.6	40352.0	40337.8	40337.6	40337.3	40339.9	40340.5	40341.1	40340.6	40340.6	40343.4	40344.8	40346.7	40347.3	40348.5	40349.8	40352.4	40356.6	40354.5

Tabel 25 Nilai Variasi harian komponen X – *north* (nT) Maret 2021

Tondano Magnetic Observatory

Maret 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39363.8	39379.2	39381.2	39355.7	39322.5	39294.8	39274.3	39277.8	39285.3	39286.3	39279.9	39293.3	39294.0	39299.4	39301.0	39299.9	39307.0	39303.7	39300.3	39302.1	39306.2	39311.7	39316.8	39319.3	39310.6
2	39328.9	39342.6	39359.4	39363.0	39357.7	39348.8	39338.8	39330.6	39318.4	39319.6	39321.4	39315.8	39310.8	39320.8	39313.9	39299.2	39324.7	39323.9	39315.0	39313.7	39320.9	39328.0	39330.9	39320.7	39327.8
3	39328.5	39343.2	39340.0	39337.5	39322.1	39305.7	39287.3	39274.6	39282.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39313.4
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	39354.6	39381.5	39392.3	39387.3	39366.1	39352.5	39335.3	39328.9	39318.0	39312.8	39313.0	39320.3	39325.8	39318.6	39318.8	39319.7	39317.4	39321.1	39325.6	39324.2	39322.7	39322.2	39322.1	39329.8	39334.6
7	39340.6	39352.7	39366.3	39372.6	39372.4	39362.0	39351.6	39341.9	39333.0	39322.6	39318.2	39321.0	39321.8	39322.8	39323.3	39321.2	39319.7	39324.5	39321.5	39321.4	39325.2	39323.1	39323.3	39328.2	39334.6
8	39339.4	39351.6	39362.4	39369.8	39369.4	39357.0	39347.0	39337.3	39330.5	39330.3	39329.9	39328.6	39326.1	39324.7	39325.3	39325.4	39327.4	39324.5	39331.1	39330.5	39330.2	39328.1	39328.6	39327.3	39336.8
9	39334.7	39342.6	39352.3	39358.9	39358.2	39348.4	39338.7	39333.8	39330.0	39325.7	39324.3	39324.9	39326.0	39325.4	39323.2	39322.9	39323.5	39326.0	39328.1	39329.6	39329.9	39331.8	39335.8	39346.7	39334.2
10	39360.9	39373.0	39377.0	39379.9	39379.7	39370.8	39353.3	39343.1	39339.3	39335.6	39334.0	39334.6	39333.8	39333.7	39333.8	39332.9	39332.6	39331.5	39332.7	39334.7	39334.3	39336.1	39338.6	39345.3	39345.9
11	39359.6	39371.4	39379.8	39383.4	39378.5	39366.8	39356.7	39345.9	39338.3	39334.3	39333.8	39333.6	39333.8	39334.3	39332.1	39330.9	39331.0	39332.6	39334.4	39338.9	39343.4	39343.4	39343.0	39344.0	39346.8
12	39351.3	39362.5	39374.3	39385.0	39377.4	39357.8	39329.9	39302.4	39297.6	39302.5	39298.9	39302.6	39316.8	39320.3	39319.5	39320.6	39318.9	39318.4	39335.0	39329.6	39328.9	39329.5	39330.1	39327.3	39330.7
13	39320.6	39331.4	39358.5	39380.0	39354.9	39327.4	39304.3	39311.9	39310.9	39303.5	39313.0	39326.1	39327.4	39324.9	39322.0	39319.3	39317.7	39320.6	39325.9	39316.0	39317.3	39320.9	39324.4	39328.8	39325.3
14	39340.2	39352.1	39352.4	39350.6	39340.1	39313.1	39294.2	39296.4	39284.8	39274.0	39288.5	39296.6	39306.1	39311.5	39316.5	39311.3	39307.1	39313.8	39311.1	39310.4	39311.2	39315.3	39314.9	39325.6	39314.1
15	39342.9	39359.0	39364.9	39365.4	39358.4	39340.3	39323.5	39315.6	39311.1	39310.1	39310.5	39314.8	39316.6	39317.6	39316.0	39317.2	39316.2	39317.7	39318.6	39317.9	39318.4	39319.1	39321.9	39331.9	39326.9
16	39346.1	39362.9	39373.7	39377.4	39369.7	39352.6	39339.7	39339.7	39326.3	39324.4	39324.3	39324.3	39325.4	39325.9	39323.4	39322.3	39326.2	39326.8	39328.6	39328.3	39326.6	39326.9	39330.9	39338.5	39337.1
17	39352.1	39365.6	39380.5	39388.3	39386.0	39369.2	39353.5	39353.5	39336.3	39332.4	39331.6	39330.5	39330.4	39330.7	39329.8	39326.9	39324.7	39317.6	39317.7	39322.4	39323.8	39325.7	39331.1	39342.0	39341.8
18	39357.6	39374.0	39385.6	39392.1	39388.0	39387.9	39370.6	39357.2	39338.8	39335.3	39332.3	39332.2	39330.0	39329.3	39328.9	39329.0	39329.0	39329.7	39329.2	39331.1	39331.0	39328.9	39333.3	39341.2	39346.8
19	39357.2	39375.2	39388.0	39391.2	39381.4	39381.3	39364.4	39345.1	39321.6	39321.6	39321.2	39317.7	39314.8	39314.1	39316.9	39317.8	39319.4	39322.5	39328.6	39331.5	39331.4	39333.9	39342.5	39356.4	39341.5
20	39378.4	39394.2	39397.3	39414.9	39419.7	39419.7	39401.0	39358.0	39263.0	39254.3	39237.9	39259.7	39260.2	39275.5	39291.9	39294.7	39298.8	39310.5	39307.2	39302.3	39305.1	39305.7	39307.1	39311.7	39323.7
21	39321.1	39331.1	39336.4	39342.3	39347.9	39348.0	39341.7	39332.4	39322.1	39319.7	39321.9	39319.9	39311.4	39299.7	39285.8	39287.4	39303.4	39307.4	39315.6	39307.9	39307.6	39312.3	39314.5	39319.7	39319.0
22	39331.7	39345.7	39354.5	39353.2	39346.3	39346.3	39332.2	39323.2	39317.1	39314.4	39312.5	39314.3	39313.4	39311.5	39309.9	39311.8	39313.6	39313.1	39315.7	39318.4	39321.7	39324.2	39328.7	39331.6	39325.2
23	39341.8	39346.3	39357.8	39361.9	39352.9	39353.0	39341.1	39329.1	39314.6	39311.0	39309.7	39312.9	39317.8	39315.7	39318.3	39322.5	39313.5	39314.9	39316.5	39321.9	39319.7	39320.2	39323.0	39328.8	39327.7
24	39337.9	39349.3	39354.1	39362.1	39360.9	39360.9	39350.8	39328.4	39309.6	39305.4	39298.9	39295.5	39297.0	39306.2	39314.6	39319.7	39322.8	39326.6	39327.7	39331.7	39329.6	39323.9	39331.0	39325.4	39327.9
25	39324.2	39331.4	39347.5	39361.5	39360.2	39360.2	39350.2	39332.4	39302.4	39311.2	39310.8	39311.1	39307.0	39306.6	39298.3	39304.9	39311.1	39315.2	39316.9	39320.2	39322.5	39326.4	39325.7	39333.1	39324.6
26	39340.1	39348.3	39360.5	39368.2	39355.8	39355.9	39341.4	39325.7	39292.4	39295.0	39297.8	39294.0	39292.7	39293.8	39295.2	39298.2	39299.3	39305.1	39310.4	39314.3	39316.7	39316.5	39319.3	39324.9	39319.2
27	39337.7	39350.8	39362.6	39368.2	39365.3	39365.3	39352.3	39342.3	39326.2	39321.9	39322.7	39323.9	39324.4	39323.8	39321.2	39320.1	39322.0	39324.6	39327.0	39331.0	39335.1	39344.2	39346.4	39339.6	39337.4
28	39345.6	39359.0	39375.4	39385.0	39380.5	39380.5	39373.4	39354.3	39325.9	39324.3	39323.0	39324.7	39324.0	39324.2	39323.7	39321.5	39321.2	39320.5	39325.7	39327.4	39328.2	39328.5	39329.4	39337.3	39340.1
29	39351.9	39366.4	39379.4	39381.7	39374.4	39374.4	39359.7	39342.6	39325.9	39326.2	39327.8	39328.6	39327.2	39325.8	39322.7	39321.7	39323.3	39323.3	39323.9	39324.6	39325.0	39325.9	39329.2	39334.9	39339.4
30	39345.0	39359.0	39370.0	39375.6	39368.3	39368.3	39358.5	39348.6	39336.6	39335.3	39334.8	39335.7	39336.6	39335.4	39333.7	39333.1	39332.5	39331.4	39330.0	39335.3	39333.5	39331.4	39335.5	39347.3	39343.8
31	39363.4	39380.8	39387.1	39386.0	39372.4	39349.7	39327.5	39312.2	39302.8	39304.3	39308.8	39314.1	39318.2	39312.7	39308.1	39312.9	39331.7	39325.5	39326.0	39328.6	39329.2	39331.6	39330.1	39330.4	39333.1
HOURLY MEANS	39344.8	39358.0	39368.0	39372.4	39365.1	39355.8	39341.1	39329.8	39315.2	39314.1	39313.6	39316.1	39316.8	39317.3	39316.7	39316.6	39319.1	39320.5	39322.4	39323.1	39324.1	39325.6	39328.1	39332.8	39331.4

Tabel 26 Nilai Variasi harian komponen Y – east (nT) Maret 2021

Tondano Magnetic Observatory																							Maret 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	349.6	349.3	350.2	356.6	369.7	368.9	368.9	373.9	383.4	380.5	373.8	370.6	370.0	370.0	366.8	366.0	364.9	365.3	366.0	367.7	369.0	364.6	357.4	343.5	365.3
2	335.0	343.3	358.2	366.2	367.8	367.5	364.7	364.3	370.5	375.1	374.5	369.8	367.3	367.3	366.7	366.2	375.8	369.0	366.4	364.8	373.5	371.0	369.0	357.1	365.5
3	344.4	342.0	352.3	366.8	380.2	378.8	372.6	372.9	374.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	364.9
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	334.3	339.9	344.8	362.7	373.4	371.3	366.2	371.3	381.5	378.9	376.3	369.7	365.3	367.2	365.2	364.6	365.8	365.8	364.8	363.9	361.2	356.8	350.5	342.3	362.7
7	341.8	352.8	364.0	372.2	375.9	373.6	374.2	376.8	376.6	376.5	373.4	370.0	368.0	367.1	366.2	364.2	363.2	366.0	363.7	363.7	360.6	355.9	357.3	352.8	365.7
8	350.0	352.7	360.3	369.7	370.7	369.2	369.9	371.6	374.3	373.5	371.6	370.7	370.2	368.7	366.2	365.2	365.5	366.0	367.6	365.2	362.5	360.8	358.1	350.7	365.4
9	349.2	353.7	362.1	367.9	370.7	365.2	365.3	370.2	373.8	373.9	369.8	368.4	368.1	366.3	365.6	364.5	364.8	365.8	365.6	364.8	363.3	360.1	356.7	354.3	364.6
10	359.4	366.8	373.8	378.6	376.6	373.4	364.9	364.9	373.6	373.7	371.0	369.4	368.0	366.6	365.7	365.3	365.4	365.0	365.5	364.6	363.1	360.7	354.9	348.3	366.6
11	345.8	349.6	356.2	361.9	362.8	361.0	366.0	373.3	376.4	376.5	371.1	368.5	367.2	365.8	364.4	364.1	364.7	364.3	364.0	363.9	364.1	362.2	359.2	349.4	363.4
12	343.3	342.4	347.5	353.8	358.5	364.5	366.8	367.9	372.1	374.7	370.4	370.1	368.3	366.8	366.5	365.2	365.3	364.4	366.9	360.9	360.3	363.3	364.1	354.6	362.4
13	350.1	347.5	350.1	353.8	355.2	357.1	355.8	362.5	366.5	370.3	372.8	370.5	367.4	366.3	366.1	365.9	366.5	366.4	365.7	363.8	365.9	361.5	355.2	349.1	361.3
14	350.4	357.6	365.3	374.4	375.4	368.8	366.8	368.0	369.6	370.1	367.7	368.2	367.1	365.3	364.7	364.1	364.0	370.9	366.3	367.3	368.6	366.9	364.2	356.3	366.2
15	349.1	350.2	359.9	367.5	367.1	363.4	363.9	364.5	366.2	367.9	368.7	366.7	367.1	366.1	365.4	365.2	364.6	366.4	366.3	364.8	363.5	361.3	358.3	350.2	363.1
16	347.3	350.3	356.3	362.8	361.8	365.4	367.9	367.9	368.3	367.0	367.0	366.6	366.6	366.2	366.0	366.2	367.1	367.0	367.2	366.2	363.7	358.1	349.4	339.3	362.1
17	335.6	344.0	359.0	368.8	372.7	376.4	377.5	377.5	377.1	373.1	368.6	366.6	366.4	365.6	365.1	365.9	365.0	364.4	364.4	364.3	362.0	358.0	356.1	348.1	364.3
18	344.3	347.1	359.8	372.4	372.4	376.7	375.7	377.5	374.0	371.4	369.6	368.0	366.4	366.2	365.3	365.4	365.6	365.7	365.7	364.4	363.3	360.8	362.6	356.3	365.7
19	351.1	347.1	356.2	370.8	370.7	379.5	380.4	376.6	370.6	368.4	367.0	365.8	364.2	363.5	362.7	362.3	362.6	363.4	364.5	363.3	363.0	360.9	360.2	358.8	364.7
20	358.6	363.3	373.2	382.0	382.0	381.9	378.3	374.1	368.1	364.5	357.4	361.6	361.6	360.3	361.0	359.8	360.7	360.5	358.3	359.3	359.1	357.2	355.9	354.9	364.7
21	354.0	360.7	369.3	373.0	373.1	362.5	355.5	355.1	372.0	375.1	370.5	366.6	363.3	358.1	357.2	356.5	364.8	360.8	358.3	357.6	357.6	362.4	363.8	356.4	362.7
22	351.8	351.4	354.2	356.9	356.9	358.1	354.4	354.8	366.3	371.2	369.2	367.5	365.9	365.5	363.7	363.1	362.0	362.0	362.6	362.8	362.3	362.3	365.9	362.8	361.4
23	361.6	365.9	368.8	368.3	368.2	360.3	361.3	359.7	370.9	371.1	366.8	364.9	363.6	362.4	362.6	361.0	360.0	361.0	362.0	363.2	362.7	363.5	367.3	357.0	363.9
24	351.0	353.7	361.8	366.5	366.5	363.0	358.9	359.3	370.8	373.5	372.9	370.4	366.3	363.4	362.2	361.7	361.7	362.0	362.6	362.8	360.9	358.4	361.0	356.1	362.8
25	356.1	362.6	364.3	361.4	361.4	362.3	365.8	364.9	371.3	372.8	367.9	364.8	362.6	359.6	362.0	360.7	360.0	361.1	361.2	362.1	362.5	362.2	361.6	359.8	363.0
26	357.2	352.6	353.7	358.3	358.2	356.3	359.2	363.0	367.3	368.4	365.8	363.0	361.7	360.1	359.2	357.3	357.2	357.2	357.6	359.1	358.4	358.0	356.3	352.4	359.1
27	352.2	357.4	365.0	367.4	367.4	361.9	357.4	359.1	360.1	363.4	363.8	363.1	363.3	363.4	362.6	362.8	362.9	363.5	362.9	363.4	363.0	360.6	356.8	358.0	361.7
28	354.6	357.6	369.8	375.6	375.6	372.3	373.8	372.6	365.9	365.3	363.2	361.9	362.2	361.6	361.2	361.6	362.6	363.1	363.6	361.5	359.5	358.2	360.3	355.3	364.1
29	352.3	357.1	369.2	377.3	377.2	375.0	367.3	359.6	357.6	363.1	364.3	363.0	361.9	360.5	360.9	362.0	362.6	362.3	362.6	361.4	360.0	357.7	354.7	350.6	362.5
30	346.8	351.0	359.3	364.7	364.6	359.7	356.4	359.2	359.7	363.6	363.8	362.9	363.9	363.7	363.0	363.6	363.7	362.9	361.9	359.9	358.1	355.8	354.2	354.6	359.9
31	361.8	373.5	386.8	392.4	386.5	377.3	364.3	362.0	362.2	362.9	360.3	359.5	359.0	359.2	359.0	362.2	362.9	361.6	361.5	361.2	361.3	358.7	355.8	350.9	365.1
HOURLY MEANS	349.6	353.2	361.1	368.0	369.6	368.0	366.2	367.1	370.4	370.9	368.5	366.7	365.5	364.4	363.7	363.3	364.0	364.1	363.8	363.1	362.6	360.6	358.8	352.9	363.6

Tabel 27 Nilai Variasi harian komponen D – *declination* (menit) Maret 2021

Tondano Magnetic Observatory																							Maret 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	30.55	30.51	30.58	31.16	32.33	32.29	32.31	32.74	33.56	33.31	32.73	32.43	32.38	32.38	32.10	32.03	31.92	31.97	32.03	32.17	32.29	31.89	31.27	30.05	31.96
2	29.30	30.01	31.30	32.00	32.14	32.12	31.88	31.85	32.41	32.81	32.75	32.35	32.13	32.12	32.08	32.05	32.86	32.28	32.05	31.91	32.67	32.45	32.27	31.23	31.96
3	30.11	29.89	30.80	32.07	33.25	33.14	32.61	32.66	32.78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31.92
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	29.22	29.68	30.10	31.67	32.62	32.45	32.02	32.47	33.37	33.15	32.92	32.34	31.94	32.12	31.94	31.89	31.99	31.99	31.91	31.83	31.59	31.21	30.65	29.93	31.71
7	29.88	30.83	31.80	32.51	32.83	32.64	32.70	32.94	32.93	32.93	32.66	32.36	32.18	32.10	32.03	31.86	31.76	32.01	31.81	31.81	31.54	31.13	31.25	30.85	31.97
8	30.60	30.82	31.48	32.29	32.39	32.26	32.33	32.49	32.73	32.66	32.49	32.41	32.37	32.24	32.03	31.93	31.96	32.01	32.14	31.93	31.70	31.55	31.31	30.67	31.95
9	30.54	30.92	31.64	32.14	32.39	31.92	31.94	32.37	32.69	32.70	32.34	32.22	32.19	32.04	31.98	31.88	31.90	31.99	31.97	31.90	31.77	31.49	31.19	30.97	31.88
10	31.40	32.04	32.65	33.06	32.89	32.61	31.89	31.90	32.66	32.67	32.44	32.30	32.17	32.06	31.98	31.94	31.95	31.92	31.96	31.88	31.75	31.53	31.03	30.45	32.05
11	30.22	30.53	31.10	31.60	31.68	31.54	31.98	32.63	32.91	32.92	32.45	32.22	32.11	31.98	31.86	31.84	31.89	31.85	31.82	31.82	31.83	31.66	31.40	30.54	31.77
12	30.00	29.92	30.35	30.90	31.31	31.85	32.07	32.19	32.57	32.78	32.42	32.39	32.22	32.08	32.06	31.94	31.95	31.87	32.08	31.56	31.50	31.77	31.84	31.01	31.69
13	30.62	30.39	30.60	30.90	31.04	31.22	31.14	31.72	32.07	32.40	32.61	32.40	32.13	32.04	32.02	32.00	32.06	32.05	31.98	31.82	32.01	31.62	31.06	30.53	31.60
14	30.63	31.25	31.93	32.72	32.82	32.26	32.10	32.21	32.36	32.41	32.19	32.22	32.12	31.96	31.90	31.86	31.85	32.45	32.05	32.13	32.25	32.10	31.86	31.16	32.03
15	30.51	30.60	31.45	32.10	32.08	31.77	31.83	31.88	32.04	32.18	32.26	32.08	32.11	32.02	31.96	31.94	31.90	32.05	32.04	31.91	31.80	31.60	31.34	30.62	31.75
16	30.36	30.61	31.12	31.69	31.60	31.93	32.16	32.16	32.21	32.10	32.09	32.06	32.06	32.03	32.01	32.03	32.11	32.10	32.11	32.02	31.81	31.32	30.55	29.66	31.66
17	29.33	30.05	31.35	32.20	32.54	32.88	32.99	32.99	32.97	32.62	32.23	32.06	32.04	31.97	31.92	31.99	31.92	31.87	31.88	31.86	31.66	31.31	31.13	30.43	31.84
18	30.08	30.32	31.41	32.51	32.51	32.89	32.82	32.99	32.70	32.47	32.31	32.18	32.04	32.02	31.95	31.95	31.97	31.98	31.98	31.86	31.76	31.55	31.70	31.15	31.96
19	30.68	30.32	31.10	32.37	32.37	33.14	33.24	32.92	32.41	32.22	32.10	31.99	31.86	31.79	31.73	31.69	31.71	31.79	31.87	31.77	31.74	31.55	31.49	31.35	31.88
20	31.32	31.71	32.58	33.33	33.33	33.31	33.02	32.69	32.24	31.93	31.33	31.68	31.68	31.55	31.60	31.49	31.56	31.54	31.35	31.44	31.42	31.26	31.14	31.05	31.90
21	30.96	31.54	32.29	32.61	32.61	31.68	31.08	31.05	32.54	32.81	32.40	32.07	31.78	31.34	31.27	31.21	31.92	31.57	31.34	31.29	31.29	31.71	31.83	31.17	31.72
22	30.76	30.72	30.95	31.19	31.19	31.30	30.98	31.03	32.04	32.47	32.29	32.14	32.01	31.98	31.82	31.77	31.67	31.66	31.72	31.73	31.69	31.68	32.00	31.73	31.61
23	31.61	31.98	32.22	32.18	32.18	31.48	31.59	31.45	32.45	32.46	32.09	31.93	31.80	31.70	31.71	31.57	31.49	31.58	31.66	31.76	31.72	31.79	32.12	31.22	31.82
24	30.69	30.91	31.61	32.02	32.02	31.72	31.37	31.42	32.44	32.68	32.63	32.42	32.06	31.80	31.68	31.64	31.64	31.66	31.71	31.72	31.55	31.34	31.57	31.14	31.73
25	31.14	31.71	31.84	31.58	31.58	31.66	31.97	31.91	32.49	32.61	32.18	31.92	31.73	31.47	31.68	31.56	31.49	31.59	31.60	31.67	31.71	31.67	31.62	31.46	31.74
26	31.23	30.81	30.91	31.30	31.30	31.14	31.40	31.75	32.14	32.25	32.01	31.77	31.66	31.52	31.44	31.27	31.26	31.25	31.29	31.41	31.35	31.31	31.17	30.82	31.41
27	30.79	31.24	31.89	32.09	32.09	31.62	31.23	31.39	31.49	31.78	31.81	31.76	31.78	31.79	31.71	31.73	31.74	31.79	31.74	31.77	31.74	31.52	31.18	31.30	31.62
28	30.99	31.25	32.30	32.80	32.80	32.51	32.65	32.56	32.00	31.95	31.76	31.65	31.67	31.62	31.59	31.62	31.71	31.76	31.80	31.61	31.44	31.32	31.51	31.07	31.83
29	30.79	31.20	32.24	32.94	32.94	32.75	32.09	31.44	31.27	31.75	31.86	31.74	31.64	31.53	31.57	31.67	31.71	31.69	31.71	31.61	31.48	31.28	31.01	30.66	31.69
30	30.32	30.67	31.39	31.85	31.85	31.42	31.14	31.39	31.45	31.79	31.81	31.73	31.81	31.80	31.74	31.79	31.80	31.73	31.64	31.47	31.31	31.11	30.97	30.99	31.46
31	31.61	32.62	33.78	34.27	33.76	32.97	31.86	31.67	31.69	31.76	31.52	31.45	31.40	31.42	31.41	31.68	31.73	31.62	31.61	31.59	31.59	31.37	31.11	30.68	31.92
HOURLY MEANS	30.56	30.86	31.54	32.14	32.29	32.15	32.01	32.10	32.40	32.45	32.24	32.08	31.97	31.87	31.81	31.78	31.84	31.84	31.82	31.76	31.71	31.54	31.38	30.85	31.79

Tabel 28 Nilai variasi harian komponen I – *inclination* (derajat) Maret 2021

Tondano Magnetic Observatory

Maret 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-12.92	-12.91	-12.89	-12.90	-12.92	-12.94	-12.95	-12.95	-12.95	-12.94	-12.94	-12.94	-12.95	-12.95	-12.94	-12.94	-12.94	-12.94	-12.94	-12.95	-12.95	-12.94	-12.94	-12.93	-12.94
2	-12.93	-12.93	-12.93	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.93	-12.94	-12.95	-12.93	-12.93	-12.94	-12.95	-12.94	-12.94	-12.93	-12.93
3	-12.93	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.94	-12.94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-12.93
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-12.91	-12.90	-12.89	-12.90	-12.91	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93
7	-12.93	-12.93	-12.92	-12.92	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.93	-12.94	-12.93	-12.93	-12.94	-12.93	-12.93
8	-12.92	-12.91	-12.91	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92
9	-12.93	-12.93	-12.92	-12.92	-12.92	-12.91	-12.91	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93
10	-12.93	-12.92	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.92
11	-12.91	-12.91	-12.90	-12.90	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.92
12	-12.91	-12.91	-12.91	-12.91	-12.90	-12.91	-12.91	-12.92	-12.92	-12.93	-12.93	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.92	-12.93	-12.93	-12.94	-12.94	-12.93
13	-12.94	-12.93	-12.92	-12.90	-12.90	-12.91	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.93	-12.93	-12.93	-12.93
14	-12.92	-12.91	-12.90	-12.90	-12.91	-12.91	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93	-12.94	-12.93	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93
15	-12.91	-12.90	-12.90	-12.90	-12.90	-12.91	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92
16	-12.92	-12.91	-12.90	-12.89	-12.89	-12.91	-12.92	-12.92	-12.93	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.92	-12.92
17	-12.91	-12.91	-12.90	-12.89	-12.88	-12.88	-12.90	-12.90	-12.90	-12.91	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.91
18	-12.92	-12.91	-12.89	-12.90	-12.90	-12.89	-12.89	-12.90	-12.90	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92
19	-12.92	-12.90	-12.89	-12.89	-12.89	-12.89	-12.90	-12.91	-12.91	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92
20	-12.91	-12.90	-12.90	-12.90	-12.89	-12.89	-12.89	-12.89	-12.92	-12.94	-12.95	-12.96	-12.95	-12.95	-12.95	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93
21	-12.94	-12.94	-12.93	-12.93	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.92	-12.92	-12.93	-12.94	-12.94	-12.95	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93
22	-12.93	-12.91	-12.90	-12.90	-12.91	-12.91	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92
23	-12.92	-12.92	-12.91	-12.90	-12.90	-12.89	-12.90	-12.91	-12.91	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.93	-12.92
24	-12.93	-12.92	-12.91	-12.90	-12.90	-12.90	-12.91	-12.91	-12.92	-12.93	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92
25	-12.93	-12.93	-12.92	-12.91	-12.91	-12.90	-12.91	-12.91	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.93
26	-12.91	-12.90	-12.90	-12.91	-12.91	-12.91	-12.92	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93
27	-12.93	-12.91	-12.90	-12.90	-12.90	-12.89	-12.90	-12.91	-12.91	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.93	-12.92
28	-12.92	-12.92	-12.91	-12.90	-12.90	-12.89	-12.90	-12.91	-12.91	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92
29	-12.93	-12.92	-12.91	-12.91	-12.91	-12.91	-12.90	-12.91	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92
30	-12.92	-12.91	-12.90	-12.90	-12.90	-12.89	-12.89	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.92	-12.92
31	-12.91	-12.90	-12.89	-12.88	-12.89	-12.90	-12.91	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92
HOURLY MEANS	-12.92	-12.91	-12.91	-12.90	-12.91	-12.91	-12.91	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92

2. Gangguan badai magnet

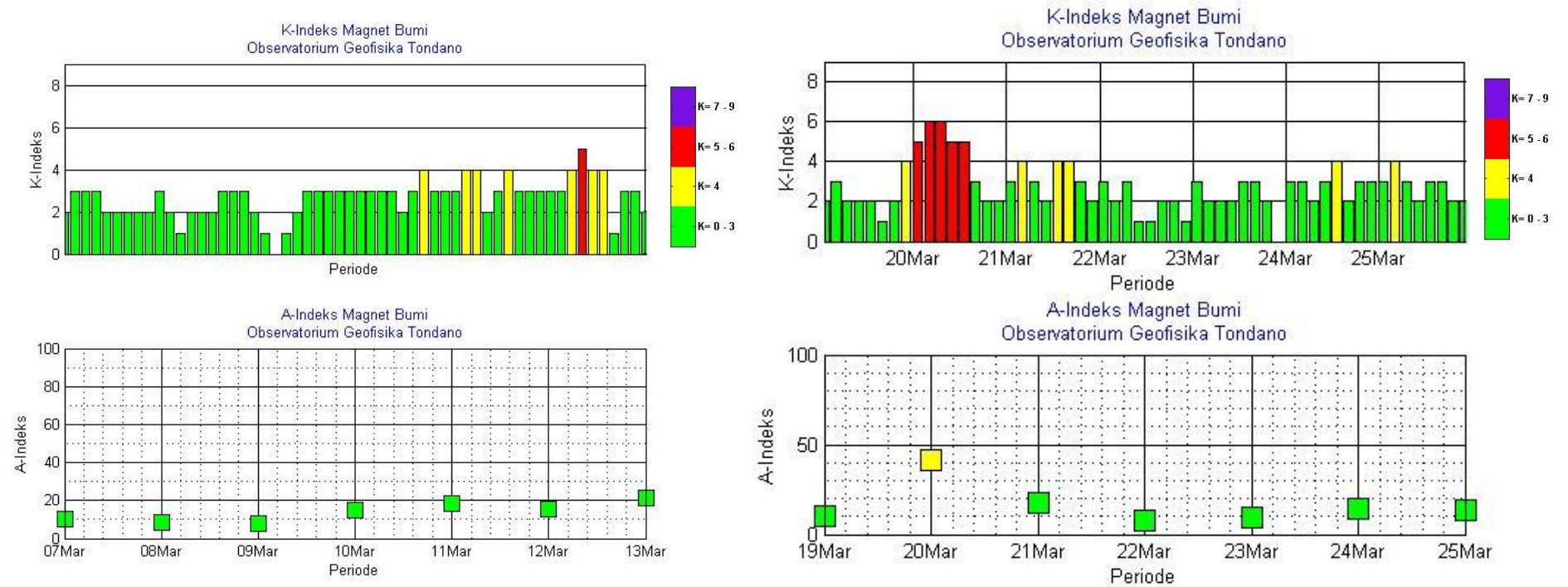
Tabel 29 Monitoring waktu gangguan pada pengamatan magnet bumi Maret 2021

Kejadian rekaman magnet bumi							Durasi gangguan	Keterangan
No	Hari			Waktu				
	Tanggal	Bulan	Tahun	Jam	Menit	Detik		
1	1	3	2021					
2	2	3	2021					
3	3	3	2021					
4	4	3	2021					
5	5	3	2021					
6	6	3	2021					
7	7	3	2021					
8	8	3	2021					
9	9	3	2021					
10	10	3	2021					
11	11	3	2021					
12	12	3	2021					
13	13	3	2021					
14	14	3	2021					
15	15	3	2021					
16	16	3	2021					
17	17	3	2021					
18	18	3	2021					
19	19	3	2021					
20	20	3	2021	3	14	0	4j58m	Badai Kecil
21	21	3	2021					
22	22	3	2021					
23	23	3	2021					
24	24	3	2021					
25	25	3	2021					
26	26	3	2021					
27	27	3	2021					
28	28	3	2021					
29	29	3	2021					
30	30	3	2021					
31	31	3	2021					

Tabel 30 Hasil analisa K-indeks dan A-indeks Maret 2021

Tanggal	K-1	K-2	K-3	K-4	K-5	K-6	K-7	K-8	A Indeks	Keterangan
1	4	5	4	4	3	2	2	1	20.125	Tenang
2	2	3	3	3	3	4	2	4	16.000	Tenang
3	4	3	5	0	0	0	0	0	11.250	lost record
4	0	0	0	0	0	0	0	0	0	lost record
5	0	0	0	0	0	0	0	0	0	lost record
6	3	5	3	3	2	2	2	1	14.625	Tenang
7	2	3	3	3	2	2	2	2	10.000	Tenang
8	2	3	2	1	2	2	2	3	8.500	Tenang
9	3	3	2	1	0	1	2	3	8.125	Tenang
10	3	3	3	3	3	3	3	3	15.000	Tenang
11	2	3	4	3	3	3	4	4	18.500	Tenang
12	2	3	4	3	3	3	3	3	15.500	Tenang
13	4	5	4	4	1	3	3	2	21.125	Tenang
14	4	4	4	4	4	3	1	3	21.000	Tenang
15	3	1	2	1	2	2	1	2	6.500	Tenang
16	1	1	1	1	1	1	1	2	3.500	Tenang
17	2	3	3	2	2	3	1	2	9.500	Tenang
18	2	3	2	1	2	2	2	3	8.500	Tenang
19	2	3	2	2	2	1	2	4	10.000	Tenang
20	5	6	6	5	5	3	2	2	41.625	Badai Kecil
21	3	4	3	2	4	4	3	2	17.500	Tenang
22	3	2	3	1	1	2	2	1	7.500	Tenang
23	3	2	2	2	3	3	2	0	9.125	Tenang
24	3	3	2	3	4	2	3	3	14.500	Tenang
25	3	4	3	2	3	3	2	2	13.500	Tenang
26	2	2	3	2	2	2	2	1	7.500	Tenang
27	1	2	1	1	1	1	3	4	8.000	Tenang
28	2	3	3	1	1	1	1	1	6.500	Tenang
29	0	0	0	0	0	0	0	0	0.000	Tenang
30	1	2	3	3	3	3	3	3	12.500	Tenang
31	3	3	3	3	2	4	1	3	14.000	Tenang

Gambar 24 Plot hasil analisa K-indeks dan A-indeks saat terjadi gangguan magnet bumi di bulan Maret 2021



D. April 2021

1. Nilai variasi harian bulan April 2021

Tabel 31 Nilai variasi harian komponen H – *horizontal* (nT) April 2021

Tondano Magnetic Observatory

April 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39346.9	39361.2	39370.7	39376.2	39367.4	39354.3	39336.1	39322.7	39314.0	39316.3	39319.1	39323.5	39325.3	39325.5	39326.0	39326.4	39326.1	39327.0	39331.5	39333.8	39333.4	39334.6	39337.1	39349.3	39336.9
2	39369.5	39387.8	39402.5	39403.6	39392.4	39376.4	39358.0	39344.8	39337.7	39335.4	39332.2	39330.4	39325.7	39320.2	39317.9	39319.7	39327.3	39315.6	39312.6	39318.2	39320.8	39324.2	39330.8	39341.0	39343.5
3	39354.2	39365.3	39371.2	39372.8	39365.3	39353.0	39343.3	39336.7	39332.1	39329.7	39327.9	39324.2	39325.2	39323.1	39326.9	39326.9	39327.5	39326.6	39327.2	39328.7	39328.1	39330.0	39330.4	39330.2	39337.8
4	39333.5	39342.7	39358.0	39368.2	39364.5	39356.6	39345.9	39337.3	39333.1	39334.1	39334.3	39333.3	39330.2	39328.9	39331.3	39336.2	39333.1	39334.1	39334.8	39336.4	39336.9	39338.9	39342.9	39347.5	39340.5
5	39360.5	39376.9	39391.9	39396.9	39391.0	39381.9	39370.6	39361.4	39356.1	39352.1	39350.9	39341.7	39330.1	39323.4	39321.5	39326.6	39326.0	39328.2	39330.3	39333.1	39337.3	39342.6	39348.3	39355.4	39351.4
6	39366.1	39377.4	39395.9	39403.3	39395.0	39381.2	39370.0	39357.9	39350.6	39345.2	39344.5	39344.1	39341.8	39337.9	39337.6	39339.0	39337.6	39336.3	39336.8	39335.5	39335.3	39336.9	39341.6	39348.6	39354.0
7	39363.4	39380.9	39394.6	39391.1	39383.9	39370.6	39354.7	39347.6	39339.2	39309.5	39294.7	39298.7	39312.5	39317.3	39302.5	39298.0	39301.4	39307.6	39316.6	39318.1	39318.5	39322.0	39327.4	39335.6	39333.6
8	39347.4	39360.0	39366.0	39362.4	39350.0	39339.3	39334.3	39329.6	39327.5	39323.9	39321.0	39321.3	39322.6	39322.8	39321.5	39320.6	39321.1	39322.4	39325.0	39327.0	39327.2	39330.1	39332.5	39343.2	39333.3
9	39361.2	39378.1	39388.1	39385.1	39375.3	39367.3	39358.4	39348.6	39339.0	39331.6	39330.5	39329.3	39330.7	39330.1	39327.3	39327.9	39329.9	39330.3	39332.0	39333.4	39334.7	39335.6	39335.9	39340.8	39345.1
10	39349.0	39360.9	39372.3	39374.8	39368.8	39360.2	39351.0	39343.7	39336.9	39332.6	39329.1	39331.3	39331.7	39328.3	39326.5	39322.6	39325.0	39324.6	39330.2	39332.5	39332.4	39333.4	39331.7	39339.4	39340.4
11	39350.5	39365.7	39379.7	39385.8	39369.4	39352.0	39338.9	39330.3	39326.1	39321.2	39320.9	39323.3	39324.3	39324.2	39324.5	39323.6	39324.5	39325.6	39323.7	39324.7	39324.6	39324.1	39326.5	39335.9	39336.3
12	39350.6	39372.9	39389.8	39390.0	39375.8	39361.0	39345.4	39333.2	39326.6	39324.4	39324.5	39325.2	39322.4	39322.9	39319.0	39319.1	39318.5	39329.0	39326.1	39325.8	39326.3	39327.0	39332.6	39343.1	39338.8
13	39354.2	39368.2	39374.6	39375.9	39366.4	39352.0	39337.3	39326.3	39322.9	39321.7	39317.5	39307.5	39310.6	39313.4	39314.7	39319.3	39320.7	39324.0	39326.3	39325.3	39326.5	39327.8	39333.6	39339.3	39333.6
14	39348.5	39366.1	39378.2	39378.5	39366.7	39356.5	39350.5	39343.0	39337.2	39330.8	39328.5	39328.3	39324.7	39328.0	39328.6	39329.1	39328.1	39331.2	39337.6	39338.9	39338.9	39342.0	39341.2	39343.6	39342.7
15	39356.0	39364.8	39383.1	39390.1	39386.8	39359.7	39324.8	39318.1	39330.0	39332.8	39333.0	39331.0	39331.7	39332.7	39328.9	39330.4	39328.9	39328.0	39330.4	39330.6	39335.0	39335.4	39338.3	39344.6	39341.9
16	39367.4	39376.7	39380.2	39366.1	39359.3	39344.5	39328.5	39328.5	39307.8	39314.6	39319.6	39319.0	39308.0	39290.0	39294.7	39308.7	39315.0	39308.0	39311.3	39322.9	39304.5	39299.0	39300.0	39305.8	39324.2
17	39312.6	39325.2	39321.0	39318.7	39295.6	39280.3	39283.3	39283.3	39265.5	39277.3	39286.8	39294.4	39305.3	39292.9	39294.1	39302.5	39305.7	39302.2	39308.4	39310.8	39306.7	39304.8	39314.3	39317.4	39300.4
18	39325.5	39331.0	39332.2	39342.8	39340.1	39340.1	39326.7	39313.0	39287.9	39284.4	39284.7	39298.9	39304.8	39296.8	39300.1	39303.2	39308.5	39313.0	39317.0	39316.3	39313.3	39319.8	39325.9	39319.6	39314.4
19	39332.3	39342.6	39350.9	39346.2	39331.9	39331.9	39316.6	39312.3	39298.4	39295.5	39296.5	39303.8	39301.4	39309.5	39302.4	39302.9	39303.1	39309.4	39311.7	39312.8	39314.5	39317.0	39312.7	39318.4	39315.6
20	39323.4	39338.9	39350.1	39348.4	39341.5	39341.5	39334.6	39330.7	39305.3	39297.7	39311.6	39313.9	39307.8	39305.8	39308.3	39315.9	39318.2	39313.3	39319.8	39324.6	39322.0	39322.8	39322.2	39325.9	39322.7
21	39337.4	39357.7	39369.2	39364.0	39356.2	39356.2	39334.4	39318.0	39304.1	39311.1	39312.4	39311.7	39314.0	39310.0	39307.4	39307.6	39309.5	39311.8	39314.5	39315.7	39316.1	39317.0	39320.5	39326.3	39325.1
22	39338.3	39356.2	39365.3	39361.8	39354.5	39354.5	39344.0	39330.4	39317.7	39315.1	39314.1	39318.2	39322.0	39320.9	39318.2	39320.3	39322.2	39324.7	39325.2	39326.9	39326.9	39325.0	39324.1	39326.8	39331.4
23	39335.0	39347.5	39361.1	39362.2	39354.8	39354.8	39342.8	39331.0	39314.8	39312.4	39312.6	39315.7	39317.6	39314.2	39314.3	39316.2	39323.2	39329.3	39329.0	39332.2	39329.1	39329.9	39324.0	39321.5	39330.2
24	39330.3	39344.2	39352.0	39354.6	39346.3	39346.3	39331.9	39313.6	39292.7	39294.4	39304.4	39304.1	39303.4	39303.8	39305.9	39305.3	39307.4	39312.7	39317.5	39317.0	39318.0	39315.0	39320.3	39331.4	39319.7
25	39317.6	39323.6	39317.4	39307.8	39301.7	39301.7	39303.7	39308.0	39296.1	39283.8	39272.4	39258.2	39256.6	39276.8	39283.8	39287.0	39291.2	39296.0	39308.0	39311.2	39314.2	39316.1	39320.1	39329.9	39299.3
26	39327.2	39326.9	39322.1	39303.4	39281.5	39281.5	39274.9	39269.5	39295.5	39299.7	39299.5	39297.4	39293.5	39292.8	39296.2	39300.5	39304.1	39306.7	39307.6	39309.4	39311.2	39313.5	39316.7	39322.1	39302.2
27	39327.8	39330.1	39331.2	39325.1	39319.5	39319.5	39316.5	39310.0	39297.1	39301.9	39302.9	39305.2	39308.1	39304.9	39302.8	39306.3	39308.4	39308.9	39309.7	39311.4	39312.1	39315.3	39318.9	39321.9	39313.1
28	39330.3	39337.5	39340.9	39338.6	39334.5	39334.5	39330.1	39320.8	39314.6	39316.7	39317.3	39319.3	39320.7	39322.5	39322.7	39322.9	39324.6	39325.0	39325.5	39324.7	39323.5	39324.1	39324.3	39325.4	39325.9
29	39333.8	39348.7	39357.0	39360.0	39361.4	39361.4	39354.4	39342.6	39319.4	39313.9	39315.3	39315.0	39309.3	39308.7	39311.1	39314.4	39319.3	39320.8	39325.1	39329.6	39337.4	39338.8	39343.1	39348.0	39332.9
30	39354.3	39368.8	39380.2	39381.7	39374.6	39374.6	39362.6	39351.3	39338.2	39335.2	39330.7	39328.7	39329.2	39328.6	39330.7	39334.9	39334.5	39328.4	39334.1	39336.6	39337.5	39338.5	39342.1	39345.8	39345.9
HOURLY MEANS	39343.5	39356.1	39364.9	39364.5	39355.7	39348.2	39336.8	39328.1	39318.8	39316.5	39316.3	39316.5	39316.4	39315.2	39314.9	39317.1	39319.0	39320.0	39322.8	39324.8	39324.8	39326.0	39328.7	39334.1	39330.4

Tabel 32 Nilai variasi harian komponen Z – vertical (nT) April 2021

Tondano Magnetic Observatory

April 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-9027.1	-9023.9	-9023.3	-9015.8	-9008.9	-9008.1	-9009.8	-9016.8	-9016.8	-9021.5	-9020.3	-9020.9	-9020.3	-9021.2	-9021.6	-9022.5	-9023.9	-9024.8	-9025.6	-9026.3	-9025.0	-9024.1	-9030.9	-9034.9	-9021.4
2	-9035.2	-9031.8	-9022.2	-9019.1	-9015.0	-9012.9	-9011.3	-9016.6	-9016.6	-9022.5	-9022.2	-9022.2	-9021.1	-9020.7	-9021.5	-9024.4	-9025.8	-9021.8	-9025.5	-9026.5	-9025.7	-9025.0	-9029.5	-9030.4	-9022.7
3	-9030.8	-9029.9	-9028.6	-9024.4	-9018.5	-9015.5	-9016.6	-9017.4	-9017.4	-9018.7	-9018.5	-9019.4	-9021.4	-9020.8	-9023.1	-9022.7	-9023.6	-9023.9	-9024.6	-9024.9	-9023.9	-9024.0	-9028.1	-9030.7	-9022.8
4	-9029.1	-9027.2	-9021.8	-9012.4	-9000.9	-8995.4	-8996.8	-9005.0	-9005.0	-9015.9	-9016.7	-9017.8	-9018.3	-9019.5	-9021.3	-9022.1	-9021.5	-9023.5	-9023.9	-9024.0	-9023.0	-9024.6	-9028.3	-9025.3	-9017.5
5	-9018.0	-9009.8	-9007.9	-9007.0	-9001.5	-8999.8	-9003.3	-9010.2	-9010.2	-9015.7	-9015.9	-9015.5	-9015.7	-9018.7	-9021.4	-9021.3	-9021.4	-9022.4	-9022.3	-9022.9	-9025.1	-9034.0	-9034.2	-9016.5	
6	-9029.2	-9032.5	-9037.4	-9035.6	-9024.8	-9016.7	-9018.1	-9021.6	-9021.6	-9022.5	-9021.5	-9020.5	-9019.5	-9019.1	-9020.9	-9022.5	-9021.8	-9023.0	-9022.4	-9022.4	-9023.2	-9024.3	-9026.7	-9026.3	-9023.9
7	-9023.8	-9021.8	-9018.2	-9010.6	-9006.3	-9005.5	-9008.3	-9014.3	-9014.3	-9011.8	-9019.9	-9020.2	-9021.2	-9020.4	-9016.1	-9018.9	-9028.8	-9022.7	-9026.8	-9021.1	-9022.9	-9025.9	-9030.5	-9028.9	-9019.1
8	-9024.6	-9018.6	-9017.9	-9020.4	-9018.4	-9020.2	-9022.1	-9023.5	-9023.5	-9023.9	-9023.2	-9023.2	-9023.0	-9022.3	-9022.6	-9023.1	-9023.8	-9024.4	-9024.9	-9024.4	-9024.3	-9024.7	-9027.1	-9026.9	-9023.0
9	-9026.5	-9023.7	-9018.4	-9018.2	-9018.5	-9014.8	-9015.2	-9018.5	-9018.5	-9016.6	-9017.8	-9018.3	-9019.7	-9020.2	-9020.6	-9022.7	-9022.7	-9023.6	-9023.5	-9023.7	-9023.7	-9023.9	-9026.2	-9025.1	-9020.9
10	-9019.8	-9015.9	-9015.6	-9010.3	-9005.2	-9007.2	-9011.6	-9016.6	-9016.6	-9018.4	-9017.5	-9018.8	-9019.2	-9019.1	-9020.5	-9021.6	-9023.1	-9023.6	-9024.3	-9023.0	-9020.9	-9020.5	-9018.7	-9017.8	-9017.7
11	-9018.9	-9015.2	-9012.7	-9009.2	-9003.6	-9001.9	-9006.8	-9013.9	-9013.9	-9019.8	-9018.3	-9018.9	-9019.7	-9020.2	-9020.8	-9021.2	-9022.2	-9022.9	-9022.7	-9023.9	-9022.6	-9021.5	-9022.9	-9021.9	-9017.3
12	-9022.3	-9025.2	-9020.4	-9008.7	-9000.3	-9003.3	-9007.8	-9013.5	-9013.5	-9018.9	-9019.8	-9019.6	-9019.4	-9020.0	-9020.4	-9021.9	-9023.9	-9026.5	-9023.0	-9024.5	-9022.5	-9020.8	-9027.0	-9031.8	-9018.9
13	-9032.8	-9030.7	-9026.0	-9018.9	-9011.7	-9005.7	-9009.4	-9016.0	-9016.0	-9021.1	-9020.0	-9018.3	-9021.8	-9022.0	-9022.8	-9024.3	-9024.4	-9024.4	-9024.1	-9021.7	-9021.6	-9020.7	-9024.9	-9024.4	-9021.0
14	-9024.6	-9026.9	-9021.6	-9013.9	-9004.5	-9009.8	-9017.6	-9019.8	-9019.8	-9019.6	-9018.7	-9018.7	-9018.7	-9020.6	-9021.2	-9021.1	-9021.7	-9023.0	-9023.8	-9022.0	-9021.0	-9021.5	-9022.7	-9021.1	-9019.7
15	-9018.8	-9015.0	-9013.8	-9008.9	-9001.7	-9000.9	-9005.6	-9012.0	-9015.8	-9015.1	-9015.9	-9016.8	-9018.8	-9019.4	-9018.6	-9022.3	-9021.1	-9022.1	-9023.3	-9022.7	-9023.3	-9021.8	-9022.3	-9016.7	-9016.4
16	-9012.3	-9008.6	-9005.9	-8997.7	-9000.0	-9000.3	-9004.6	-9004.6	-9004.6	-9018.3	-9015.1	-9015.4	-9011.6	-9012.6	-9021.6	-9025.6	-9023.8	-9020.1	-9028.5	-9022.5	-9018.0	-9025.3	-9032.9	-9032.9	-9015.1
17	-9025.3	-9023.9	-9010.8	-9003.4	-9000.1	-9004.1	-9012.6	-9012.6	-9012.6	-9019.7	-9018.2	-9017.2	-9018.5	-9016.1	-9020.9	-9021.6	-9018.0	-9023.9	-9028.5	-9024.8	-9021.5	-9022.3	-9022.6	-9017.1	-9017.4
18	-9012.5	-9002.6	-9005.1	-9001.3	-9001.3	-9000.7	-9003.4	-9011.3	-9011.3	-9013.4	-9015.7	-9021.0	-9018.5	-9015.4	-9021.4	-9021.1	-9023.5	-9024.8	-9023.3	-9023.9	-9024.0	-9027.0	-9023.8	-9019.0	-9015.2
19	-9020.8	-9017.5	-9015.4	-9008.1	-9008.1	-9009.3	-9013.7	-9012.9	-9012.9	-9012.7	-9017.6	-9014.7	-9014.6	-9016.9	-9015.3	-9021.0	-9021.5	-9025.0	-9023.2	-9025.2	-9022.0	-9025.2	-9026.4	-9021.7	-9017.6
20	-9013.7	-9011.4	-9004.1	-8996.7	-8996.7	-8999.2	-9006.0	-9008.7	-9008.7	-9007.7	-9013.6	-9014.3	-9012.1	-9015.0	-9016.8	-9021.0	-9019.4	-9019.8	-9025.9	-9020.9	-9020.7	-9023.4	-9025.6	-9021.3	-9013.4
21	-9017.2	-9012.4	-9008.4	-9002.5	-9002.5	-8998.0	-9002.1	-9010.8	-9010.8	-9017.5	-9015.0	-9014.4	-9015.9	-9016.1	-9017.3	-9019.2	-9020.0	-9021.3	-9021.4	-9021.6	-9021.3	-9023.5	-9026.4	-9024.0	-9015.0
22	-9020.0	-9014.7	-9001.5	-8993.1	-8993.1	-8995.2	-8997.3	-9001.0	-9001.0	-9013.7	-9014.6	-9016.0	-9016.1	-9016.2	-9017.1	-9019.1	-9019.9	-9020.4	-9019.9	-9020.1	-9019.4	-9020.7	-9023.9	-9021.5	-9012.3
23	-9010.6	-9003.3	-8996.3	-8990.0	-8990.0	-8990.1	-8992.3	-9000.2	-9000.2	-9009.9	-9011.2	-9013.7	-9014.5	-9014.5	-9015.9	-9018.0	-9022.1	-9019.9	-9020.1	-9022.4	-9022.4	-9026.3	-9021.7	-9017.6	-9010.1
24	-9007.1	-9007.7	-9005.0	-8997.2	-8997.2	-8996.0	-8995.0	-8997.2	-8997.2	-9012.9	-9014.5	-9013.9	-9014.2	-9016.1	-9016.7	-9018.8	-9020.4	-9022.5	-9022.4	-9021.8	-9021.9	-9022.8	-9032.7	-9027.7	-9012.5
25	-9016.1	-9019.9	-9012.7	-9009.5	-9009.5	-9016.3	-9019.5	-9015.7	-9015.7	-9010.4	-9010.0	-9015.4	-9017.2	-9023.8	-9020.3	-9020.8	-9023.2	-9024.9	-9026.8	-9021.8	-9023.2	-9023.7	-9027.6	-9024.8	-9018.7
26	-9016.6	-9015.4	-9011.3	-9008.0	-9008.0	-9010.3	-9016.1	-9017.2	-9017.2	-9019.0	-9016.8	-9017.2	-9017.5	-9019.1	-9021.7	-9022.8	-9023.4	-9022.6	-9023.2	-9022.7	-9022.1	-9022.7	-9024.6	-9022.3	-9018.2
27	-9016.0	-9010.1	-9008.3	-9005.0	-9005.0	-9006.5	-9013.9	-9012.2	-9012.2	-9014.0	-9014.1	-9015.0	-9016.2	-9016.6	-9018.3	-9021.6	-9021.5	-9022.5	-9022.7	-9023.2	-9023.1	-9023.7	-9025.1	-9020.6	-9016.1
28	-9020.4	-9016.6	-9014.1	-9009.3	-9009.3	-9006.2	-9005.7	-9006.7	-9006.7	-9014.3	-9013.7	-9015.2	-9015.1	-9016.6	-9017.1	-9018.8	-9019.9	-9020.1	-9020.8	-9021.0	-9020.8	-9023.0	-9028.4	-9027.6	-9016.1
29	-9026.8	-9021.4	-9013.5	-9009.7	-9009.7	-9007.5	-9003.4	-9002.4	-9002.4	-9014.5	-9017.6	-9016.4	-9015.5	-9018.3	-9018.5	-9020.5	-9021.6	-9021.1	-9022.6	-9023.5	-9024.3	-9023.8	-9030.0	-9025.6	-9017.1
30	-9018.0	-9014.6	-9008.0	-8999.5	-8999.5	-8990.1	-8991.8	-8996.9	-9012.1	-9014.2	-9013.9	-9015.2	-9016.1	-9016.6	-9018.1	-9019.8	-9017.2	-9017.4	-9020.4	-9021.2	-9020.4	-9022.1	-9025.9	-9024.1	-9013.0
HOURLY MEANS	-9021.2	-9018.3	-9014.2	-9008.8	-9005.7	-9004.9	-9007.9	-9011.5	-9012.2	-9016.5	-9016.9	-9017.5	-9017.7	-9018.5	-9019.7	-9021.4	-9022.2	-9022.6	-9023.7	-9023.0	-9022.4	-9023.5	-9026.6	-9024.8	-9017.6

Tabel 33 Nilai Variasi harian komponen F – total (nT) April 2021

Tondano Magnetic Observatory

April 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	40369.2	40382.4	40391.5	40395.2	40385.0	40372.1	40354.8	40343.2	40334.7	40338.0	40340.5	40344.9	40346.6	40347.0	40347.5	40348.1	40348.2	40349.2	40353.8	40356.2	40355.5	40356.5	40360.4	40373.2	40358.1
2	40392.9	40410.1	40422.2	40422.6	40410.8	40394.7	40376.4	40364.7	40357.8	40356.9	40353.7	40351.9	40347.1	40341.7	40339.6	40342.0	40349.7	40337.4	40335.4	40341.0	40343.4	40346.6	40354.0	40364.1	40364.9
3	40377.1	40387.7	40393.2	40393.8	40385.2	40372.5	40363.3	40357.0	40352.5	40350.5	40348.7	40345.3	40346.7	40344.6	40348.7	40348.7	40349.5	40348.6	40349.4	40350.9	40350.1	40351.9	40353.3	40353.7	40359.3
4	40356.5	40365.0	40378.7	40386.6	40380.4	40371.5	40361.4	40354.9	40350.8	40354.1	40354.5	40353.8	40350.9	40349.9	40352.6	40357.6	40354.4	40355.8	40356.6	40358.2	40358.5	40360.7	40365.5	40369.3	40360.8
5	40380.3	40394.5	40408.7	40413.4	40406.4	40397.1	40386.9	40379.5	40374.3	40371.7	40370.5	40361.5	40350.2	40344.3	40343.1	40348.0	40347.5	40349.8	40351.9	40354.6	40358.8	40364.4	40372.0	40379.1	40371.2
6	40388.3	40400.0	40419.2	40426.0	40415.5	40400.2	40389.6	40378.7	40371.5	40366.4	40365.5	40364.9	40362.5	40358.5	40358.7	40360.4	40358.9	40357.9	40358.2	40356.9	40356.9	40358.7	40363.8	40370.6	40375.3
7	40384.5	40401.1	40413.6	40408.5	40400.6	40387.5	40372.5	40367.0	40358.8	40329.2	40316.6	40320.6	40334.3	40338.8	40323.4	40319.6	40325.1	40329.8	40339.6	40339.7	40340.5	40344.6	40350.9	40358.6	40354.4
8	40369.1	40380.0	40385.7	40382.7	40370.3	40360.1	40355.8	40351.5	40349.4	40346.0	40343.0	40343.3	40344.6	40344.6	40343.4	40342.6	40343.2	40344.7	40347.3	40349.1	40349.3	40352.2	40355.1	40365.5	40354.9
9	40382.9	40398.7	40407.3	40404.4	40394.9	40386.3	40377.7	40368.9	40359.5	40351.9	40351.1	40350.1	40351.7	40351.2	40348.6	40349.7	40351.6	40352.2	40353.8	40355.3	40356.5	40357.4	40358.2	40362.8	40365.9
10	40369.6	40380.3	40391.3	40392.6	40385.6	40377.7	40369.7	40363.7	40357.0	40353.2	40349.7	40352.0	40352.6	40349.2	40347.8	40344.3	40346.9	40346.7	40352.2	40354.2	40353.6	40354.5	40352.4	40359.7	40360.7
11	40370.8	40384.8	40397.9	40403.1	40385.9	40368.5	40356.8	40350.0	40345.9	40342.5	40341.8	40344.3	40345.5	40345.5	40345.9	40345.1	40346.2	40347.4	40345.6	40346.8	40346.4	40345.7	40348.3	40357.3	40356.6
12	40371.7	40394.1	40409.4	40407.1	40391.3	40377.5	40363.4	40352.8	40346.3	40345.4	40345.7	40346.3	40343.5	40344.2	40340.4	40340.9	40340.7	40351.5	40348.0	40348.0	40348.1	40348.4	40355.1	40366.5	40359.4
13	40377.5	40390.7	40395.9	40395.6	40384.7	40369.3	40355.8	40346.6	40343.3	40343.3	40338.9	40328.7	40332.6	40335.4	40336.8	40341.6	40343.0	40346.2	40348.4	40346.9	40348.0	40349.1	40355.7	40361.1	40354.8
14	40370.1	40387.8	40398.4	40397.0	40383.4	40374.6	40370.6	40363.7	40358.0	40351.8	40349.4	40349.1	40345.6	40349.2	40350.0	40350.5	40349.6	40352.9	40359.3	40360.2	40360.0	40363.2	40362.6	40364.6	40363.4
15	40376.1	40383.9	40401.5	40407.1	40402.3	40375.8	40342.8	40337.7	40350.1	40352.7	40353.1	40351.4	40352.5	40353.6	40349.7	40352.0	40350.3	40349.6	40352.2	40352.3	40356.7	40356.7	40359.7	40364.6	40361.8
16	40385.8	40394.0	40396.9	40381.3	40375.1	40360.8	40346.2	40346.2	40326.0	40335.7	40339.8	40339.3	40327.8	40310.4	40317.0	40331.5	40337.3	40329.6	40334.8	40344.7	40325.8	40322.1	40324.7	40330.4	40344.3
17	40335.3	40347.2	40340.3	40336.4	40313.1	40299.0	40303.9	40303.9	40286.6	40299.6	40308.5	40315.7	40326.7	40314.1	40316.2	40324.6	40326.9	40324.8	40331.9	40333.4	40328.7	40327.1	40336.4	40338.1	40321.6
18	40345.0	40348.2	40349.9	40359.3	40356.8	40356.6	40344.1	40332.6	40308.1	40305.2	40306.0	40320.9	40326.2	40317.7	40322.2	40325.2	40330.9	40335.6	40339.1	40338.7	40335.7	40342.7	40347.9	40340.8	40334.8
19	40353.5	40362.8	40370.4	40364.2	40350.3	40350.6	40336.6	40332.3	40318.6	40315.8	40317.9	40324.3	40322.0	40330.4	40323.2	40324.9	40325.2	40332.1	40333.9	40335.5	40336.4	40339.5	40335.7	40340.2	40336.5
20	40343.3	40357.9	40367.2	40363.8	40357.1	40357.6	40352.4	40349.3	40324.5	40316.8	40331.8	40334.1	40327.7	40326.4	40329.2	40337.6	40339.5	40334.7	40342.4	40346.0	40343.5	40344.8	40344.7	40347.4	40342.5
21	40357.7	40376.3	40386.7	40380.4	40372.7	40371.7	40351.4	40337.3	40323.8	40332.1	40332.8	40332.0	40334.6	40330.7	40328.4	40329.0	40331.1	40333.7	40336.3	40337.5	40337.8	40339.2	40343.2	40348.3	40345.2
22	40359.2	40375.4	40381.3	40376.0	40369.0	40369.4	40359.6	40347.2	40334.8	40335.2	40334.3	40338.6	40342.4	40341.4	40338.9	40341.4	40343.4	40346.0	40346.3	40348.1	40347.9	40346.3	40346.2	40348.3	40350.7
23	40353.9	40364.4	40376.1	40375.8	40368.6	40368.6	40357.4	40347.6	40331.9	40331.6	40332.1	40335.8	40337.7	40334.4	40334.9	40337.2	40344.9	40350.4	40350.1	40353.7	40350.7	40352.4	40345.6	40342.3	40349.1
24	40348.5	40362.1	40369.2	40370.0	40361.9	40361.6	40347.3	40330.0	40309.6	40314.8	40324.9	40324.5	40323.9	40324.7	40326.8	40326.8	40329.1	40334.8	40339.4	40338.8	40339.8	40337.1	40344.4	40354.2	40339.3
25	40338.2	40344.8	40337.2	40327.1	40321.1	40322.6	40325.3	40328.7	40317.1	40303.9	40292.7	40280.1	40278.9	40300.1	40306.1	40309.4	40314.0	40319.0	40331.1	40333.2	40336.4	40338.4	40343.1	40352.0	40320.8
26	40347.6	40347.0	40341.4	40322.4	40301.1	40301.6	40296.5	40291.5	40316.9	40321.3	40320.6	40318.7	40315.0	40314.6	40318.5	40323.0	40326.6	40328.9	40330.0	40331.6	40333.3	40335.5	40339.1	40343.9	40323.6
27	40348.1	40349.0	40349.6	40343.0	40337.5	40337.8	40336.6	40329.8	40317.3	40322.3	40323.4	40325.8	40328.9	40325.9	40324.1	40328.3	40330.4	40331.1	40331.9	40333.7	40334.3	40337.5	40341.4	40343.3	40333.8
28	40351.4	40357.7	40360.3	40357.0	40353.1	40352.4	40347.9	40339.1	40333.1	40336.8	40337.3	40339.6	40340.9	40343.0	40343.3	40343.8	40345.8	40346.2	40346.8	40346.1	40344.9	40346.0	40347.4	40348.3	40346.2
29	40356.3	40369.7	40376.0	40378.0	40379.3	40378.9	40371.1	40359.4	40336.8	40334.2	40336.2	40335.7	40329.9	40330.0	40332.4	40336.0	40341.0	40342.4	40346.9	40351.4	40359.2	40360.5	40366.1	40369.9	40353.2
30	40374.3	40387.7	40397.3	40396.9	40390.0	40387.9	40376.6	40366.6	40357.3	40354.9	40350.4	40348.7	40349.4	40348.9	40351.3	40355.8	40354.8	40349.0	40355.2	40357.8	40358.5	40359.8	40364.1	40367.4	40365.0
HOURLY MEANS	40364.5	40376.2	40383.8	40382.2	40373.0	40365.4	40355.0	40347.4	40338.4	40337.1	40337.0	40337.4	40337.3	40336.3	40336.3	40338.8	40340.9	40341.9	40344.9	40346.7	40346.5	40348.0	40351.2	40356.2	40350.9

Tabel 34 Nilai Variasi harian komponen X – *north* (nT) April 2021

Tondano Magnetic Observatory																							April 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39345.4	39359.7	39369.1	39374.5	39365.7	39352.6	39334.5	39321.0	39312.3	39314.6	39317.5	39321.8	39323.7	39323.9	39324.3	39324.8	39324.4	39325.3	39329.8	39332.1	39331.7	39332.9	39335.4	39347.6	39335.2
2	39367.8	39386.1	39400.7	39401.8	39390.6	39374.7	39356.4	39343.1	39336.0	39333.7	39330.5	39328.7	39324.0	39318.6	39316.2	39318.0	39325.6	39314.0	39310.9	39316.5	39319.1	39322.6	39329.1	39339.3	39341.8
3	39352.6	39363.6	39369.5	39371.1	39363.7	39351.4	39341.8	39335.1	39330.4	39327.9	39326.2	39322.5	39323.5	39321.5	39325.2	39325.2	39325.8	39324.9	39325.6	39327.0	39326.5	39328.3	39328.7	39328.6	39336.1
4	39331.8	39341.0	39356.3	39366.6	39362.9	39355.0	39344.3	39335.6	39331.3	39332.3	39332.6	39331.7	39328.5	39327.2	39329.6	39334.6	39331.4	39332.4	39333.1	39334.7	39335.3	39337.2	39341.2	39345.8	39338.9
5	39358.9	39375.3	39390.3	39395.2	39389.4	39380.3	39369.0	39359.7	39354.3	39350.4	39349.2	39340.0	39328.4	39321.7	39319.8	39324.9	39324.4	39326.5	39328.7	39331.5	39335.7	39340.9	39346.5	39353.8	39349.8
6	39364.5	39375.7	39394.2	39401.5	39393.3	39379.6	39368.4	39356.3	39348.9	39343.5	39342.8	39342.4	39340.2	39336.2	39335.9	39337.3	39335.9	39334.6	39335.1	39333.8	39333.6	39335.2	39339.9	39346.9	39352.3
7	39361.9	39379.3	39392.9	39389.4	39382.3	39369.1	39353.1	39346.0	39337.5	39307.7	39292.9	39297.0	39310.8	39315.7	39300.9	39296.4	39299.7	39306.0	39315.0	39316.5	39316.9	39320.4	39325.7	39334.0	39332.0
8	39345.9	39358.4	39364.4	39360.7	39348.4	39337.7	39332.8	39328.1	39325.8	39322.2	39319.4	39319.6	39321.0	39321.2	39319.9	39318.9	39319.4	39320.8	39323.4	39325.4	39325.6	39328.5	39330.8	39341.6	39331.7
9	39359.5	39376.3	39386.3	39383.3	39373.6	39365.6	39356.7	39346.9	39337.2	39329.9	39328.8	39327.7	39329.1	39328.5	39325.6	39326.3	39328.2	39328.7	39330.3	39331.8	39333.1	39334.0	39334.3	39339.2	39343.4
10	39347.5	39359.3	39370.6	39373.1	39367.1	39358.6	39349.3	39342.0	39335.2	39330.9	39327.4	39329.6	39330.0	39326.6	39324.9	39321.0	39323.3	39323.0	39328.5	39330.9	39330.7	39331.8	39330.2	39337.9	39338.7
11	39349.0	39364.1	39378.1	39384.2	39367.8	39350.4	39337.2	39328.6	39324.4	39319.6	39319.2	39321.6	39322.7	39322.6	39322.9	39321.9	39322.8	39323.9	39322.0	39323.1	39322.9	39322.5	39324.8	39334.4	39334.6
12	39349.1	39371.3	39388.0	39388.2	39374.1	39359.2	39343.7	39331.5	39324.9	39322.7	39322.8	39323.6	39320.7	39321.3	39317.3	39317.5	39316.8	39327.3	39324.5	39324.1	39324.7	39325.4	39330.9	39341.4	39337.1
13	39352.6	39366.5	39372.9	39374.3	39364.7	39350.4	39335.7	39324.7	39321.3	39320.1	39315.8	39305.8	39308.9	39311.8	39313.0	39317.6	39319.0	39322.3	39324.6	39323.6	39324.8	39326.2	39331.9	39337.7	39331.9
14	39346.9	39364.5	39376.5	39376.9	39365.1	39354.9	39348.9	39341.4	39335.5	39329.1	39326.9	39326.6	39323.0	39326.3	39327.0	39327.5	39326.4	39329.5	39335.9	39337.2	39337.3	39340.4	39339.6	39342.1	39341.1
15	39354.5	39363.4	39381.6	39388.5	39385.2	39358.1	39323.0	39316.3	39328.3	39331.1	39331.3	39329.4	39330.1	39331.0	39327.3	39328.7	39327.3	39326.3	39328.7	39328.9	39333.3	39333.7	39336.7	39343.1	39340.2
16	39365.8	39375.1	39378.6	39364.6	39357.7	39342.9	39326.9	39326.9	39306.1	39312.9	39318.0	39317.4	39306.4	39288.4	39293.0	39307.0	39313.3	39306.3	39309.6	39321.2	39302.8	39297.3	39298.2	39304.1	39322.5
17	39311.0	39323.6	39319.4	39317.2	39294.0	39278.6	39281.7	39281.7	39263.8	39275.6	39285.1	39292.8	39303.7	39291.3	39292.4	39300.9	39304.1	39300.5	39306.6	39309.0	39305.0	39303.2	39312.7	39315.8	39298.7
18	39324.0	39329.5	39330.6	39341.1	39338.4	39338.5	39325.0	39311.3	39286.1	39282.7	39283.1	39297.2	39303.2	39295.2	39298.4	39301.5	39306.8	39311.3	39315.3	39314.7	39311.6	39318.1	39324.2	39318.1	39312.7
19	39330.8	39341.1	39349.3	39344.6	39330.3	39330.3	39315.0	39310.6	39296.6	39293.8	39294.8	39302.1	39299.8	39307.9	39300.8	39301.3	39301.5	39307.7	39310.0	39311.1	39312.8	39315.3	39311.0	39316.9	39314.0
20	39321.9	39337.4	39348.6	39346.8	39340.0	39339.9	39333.0	39329.0	39303.5	39296.0	39310.0	39312.2	39306.2	39304.2	39306.6	39314.3	39316.6	39311.6	39318.1	39322.9	39320.4	39321.1	39320.5	39324.3	39321.0
21	39335.9	39356.1	39367.6	39362.4	39354.5	39354.6	39332.8	39316.3	39302.4	39309.4	39310.8	39310.0	39312.4	39308.4	39305.7	39305.9	39307.9	39310.2	39312.9	39314.1	39314.5	39315.4	39318.8	39324.6	39323.5
22	39336.7	39354.6	39363.7	39360.3	39353.0	39353.1	39342.5	39328.9	39316.0	39313.4	39312.4	39316.5	39320.4	39319.3	39316.5	39318.7	39320.5	39323.1	39323.5	39325.3	39325.3	39323.4	39322.4	39325.1	39329.8
23	39333.5	39346.0	39359.5	39360.7	39353.3	39353.3	39341.2	39329.3	39313.0	39310.6	39310.9	39314.1	39315.9	39312.6	39312.7	39314.6	39321.5	39327.7	39327.3	39330.5	39327.4	39328.2	39322.2	39319.9	39328.6
24	39328.9	39342.8	39350.7	39353.2	39344.9	39344.9	39330.3	39312.0	39290.9	39292.6	39302.7	39302.4	39301.8	39302.2	39304.3	39303.7	39305.8	39311.1	39315.9	39315.3	39316.3	39313.3	39318.4	39329.7	39318.1
25	39316.0	39322.1	39315.9	39306.2	39300.1	39300.1	39302.1	39306.4	39294.4	39282.1	39270.7	39256.6	39255.0	39275.2	39282.2	39285.4	39289.6	39294.3	39306.3	39309.6	39312.5	39314.4	39318.4	39328.2	39297.7
26	39325.6	39325.3	39320.5	39301.8	39280.0	39280.0	39273.4	39267.9	39293.9	39298.0	39297.9	39295.8	39291.9	39291.2	39294.6	39298.9	39302.5	39305.0	39306.0	39307.7	39309.6	39311.8	39315.0	39320.4	39300.6
27	39326.3	39328.6	39329.7	39323.6	39318.0	39318.0	39314.9	39308.3	39295.4	39300.1	39301.3	39303.6	39306.5	39303.3	39301.2	39304.6	39306.8	39307.3	39308.1	39309.8	39310.5	39313.6	39317.2	39320.2	39311.5
28	39328.7	39335.9	39339.3	39337.0	39332.9	39332.9	39328.5	39319.1	39312.9	39314.9	39315.6	39317.6	39319.0	39320.8	39321.0	39321.2	39323.0	39323.3	39323.8	39323.0	39321.8	39322.4	39322.6	39323.7	39324.2
29	39332.2	39347.2	39355.5	39358.5	39359.9	39359.8	39352.8	39340.9	39317.7	39312.2	39313.7	39313.4	39307.7	39307.1	39309.5	39312.8	39317.7	39319.2	39323.5	39327.9	39335.7	39337.1	39341.4	39346.4	39331.2
30	39352.8	39367.3	39378.7	39380.1	39373.1	39373.1	39361.0	39349.6	39336.5	39333.5	39329.0	39327.0	39327.5	39326.9	39329.0	39333.3	39332.9	39326.8	39332.5	39335.0	39335.9	39336.8	39340.4	39344.1	39344.3
HOURLY MEANS	39341.9	39354.6	39363.3	39362.9	39354.1	39346.6	39335.2	39326.5	39317.1	39314.8	39314.6	39314.9	39314.7	39313.6	39313.3	39315.5	39317.4	39318.4	39321.2	39323.1	39323.1	39324.4	39327.0	39332.5	39328.8

Tabel 35 Nilai Variasi harian komponen Y – east (nT) April 2021

Tondano Magnetic Observatory																							April 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	350.7	353.7	363.0	368.1	366.9	364.1	360.4	364.8	366.9	366.8	363.6	362.4	361.6	361.5	361.1	361.4	362.8	363.3	363.9	364.6	364.3	363.0	367.2	363.3	362.9
2	362.7	367.9	371.9	374.9	373.2	364.7	354.7	356.8	360.5	363.6	362.9	362.4	361.9	361.6	360.0	361.5	363.4	361.3	363.2	362.0	361.2	360.9	366.5	361.8	363.4
3	358.4	361.3	365.7	363.8	356.8	353.1	352.8	360.9	369.0	370.6	365.2	363.5	363.1	361.2	361.0	361.2	361.5	361.5	360.8	360.4	358.6	357.0	362.9	362.4	361.4
4	359.1	361.8	365.0	360.8	352.9	349.6	355.6	366.5	373.8	372.0	366.4	363.6	361.8	361.1	361.6	361.7	362.1	362.9	362.1	360.9	358.5	359.5	366.4	362.1	362.0
5	355.3	355.0	356.2	362.1	359.9	356.4	357.8	365.2	372.1	373.2	368.4	365.7	364.0	362.6	362.2	360.0	360.1	359.9	359.0	357.4	355.6	358.3	370.4	363.7	361.7
6	356.2	361.4	368.4	372.9	365.1	355.0	354.1	356.5	362.8	367.4	367.4	365.0	362.9	361.2	361.3	362.8	362.6	363.3	361.6	360.5	358.9	358.6	359.4	355.3	361.7
7	353.2	357.5	362.5	360.4	352.5	349.4	352.6	360.8	368.6	370.6	371.5	363.6	360.7	359.4	355.9	354.0	361.7	356.8	359.7	355.2	355.3	358.3	364.4	356.0	359.2
8	349.2	353.5	359.4	360.1	357.4	348.4	345.1	348.9	356.9	360.5	360.8	360.5	360.5	359.4	359.6	359.5	359.3	359.2	359.4	358.9	358.2	357.3	361.2	362.2	357.3
9	364.3	370.2	372.5	376.5	371.8	362.1	366.4	370.6	368.8	367.1	364.3	363.0	362.2	361.8	361.8	362.0	361.1	361.4	360.9	360.6	359.9	359.3	360.3	355.0	364.3
10	350.9	354.4	363.7	367.3	366.5	363.4	365.2	368.3	369.6	368.1	365.6	364.3	362.9	362.1	361.4	361.4	360.8	362.0	362.4	361.6	358.8	353.9	347.6	338.6	360.9
11	341.4	354.0	361.0	359.7	357.0	356.7	360.9	364.6	365.1	364.6	361.4	360.7	359.9	359.7	360.1	361.4	362.2	362.8	363.1	363.6	361.2	359.1	359.2	350.4	359.6
12	348.2	360.2	375.3	378.4	369.9	366.2	366.0	364.5	364.6	363.8	362.6	360.8	360.0	358.8	358.8	358.7	360.3	362.2	361.7	363.4	360.7	356.9	361.5	357.6	362.5
13	355.8	363.1	365.9	361.9	358.6	355.7	355.2	357.7	361.3	360.7	361.0	359.8	358.4	357.4	357.9	360.2	362.0	363.9	364.0	361.9	358.5	354.5	357.2	353.2	359.4
14	352.7	355.7	358.7	354.9	348.1	348.9	354.1	359.3	363.3	365.8	362.9	361.8	361.3	359.7	359.5	360.4	361.4	362.3	363.6	362.7	361.5	360.7	359.1	347.8	358.6
15	340.5	340.5	347.3	353.9	356.3	358.5	368.0	371.3	369.4	366.7	363.2	361.4	360.8	360.2	360.2	363.2	363.1	363.4	363.6	363.1	362.8	360.6	357.9	348.9	359.4
16	344.5	349.8	352.8	348.9	349.2	352.7	357.3	357.3	367.1	366.7	359.2	357.3	353.2	351.7	354.9	360.0	362.7	363.1	369.5	364.0	363.0	369.0	376.1	368.3	359.1
17	351.3	355.5	355.2	353.2	353.0	357.3	362.7	362.7	365.8	364.3	357.3	353.8	352.6	354.9	356.9	356.7	353.8	359.3	366.8	366.9	364.6	364.0	361.3	350.9	358.4
18	345.1	347.0	360.0	364.6	364.6	360.8	362.0	369.0	371.9	362.9	358.9	359.6	356.3	354.3	356.0	356.0	358.2	361.4	361.2	363.1	364.3	366.3	361.4	347.8	359.7
19	339.0	345.7	351.9	357.3	357.2	359.2	363.0	365.7	370.0	364.4	364.9	359.0	357.2	355.8	354.6	357.9	358.7	361.9	362.4	365.9	362.5	365.2	365.2	351.2	359.0
20	343.1	346.0	347.3	348.5	348.4	351.5	359.0	365.3	373.1	368.9	362.4	360.7	358.5	358.7	359.0	361.5	360.9	362.2	365.9	362.4	360.7	363.3	366.4	356.4	358.8
21	349.3	348.7	356.5	357.5	357.4	352.7	358.2	363.9	368.1	365.6	361.3	358.7	358.0	358.3	358.0	357.8	358.5	359.8	359.5	359.1	358.0	359.9	365.9	362.5	358.9
22	358.4	358.5	350.8	340.7	340.7	338.5	342.9	349.0	365.0	365.2	362.3	360.4	358.7	359.3	359.8	360.2	360.2	360.1	359.7	358.7	356.9	357.1	364.0	360.4	356.1
23	349.7	346.2	346.7	345.4	345.3	349.1	348.7	357.7	376.0	370.0	361.9	359.3	358.7	357.8	357.3	357.6	360.2	360.3	362.0	364.8	367.5	371.8	370.7	360.4	358.5
24	336.6	328.0	328.4	331.6	331.5	337.4	348.5	362.8	377.1	373.8	364.7	361.9	360.1	358.0	357.9	358.4	359.0	360.7	361.0	362.2	362.0	364.7	377.3	366.6	355.4
25	354.6	345.2	347.2	349.0	349.0	350.4	352.2	357.1	368.0	364.6	356.0	356.8	352.9	353.7	353.9	355.2	358.1	360.5	363.7	361.7	362.7	365.4	371.9	362.2	357.2
26	350.2	347.5	346.4	346.9	346.7	347.6	349.7	351.5	362.9	361.4	356.8	355.1	354.3	353.7	354.3	355.7	357.3	357.7	360.0	359.8	358.1	357.6	362.1	357.9	354.6
27	349.1	343.9	344.2	341.9	341.8	346.4	357.2	366.5	368.5	366.7	362.2	359.2	357.4	356.2	356.2	357.5	357.1	357.9	358.0	357.9	357.5	358.9	365.2	362.8	356.2
28	357.9	353.1	351.6	352.4	352.3	354.0	354.3	358.0	369.6	367.7	362.7	360.7	359.0	359.0	358.8	359.2	359.6	360.0	360.5	360.8	360.8	363.6	372.3	365.2	359.7
29	355.0	348.3	343.2	342.9	342.9	351.2	354.9	363.2	366.9	364.1	362.3	359.0	355.8	355.7	354.9	355.3	356.3	356.7	357.3	358.5	360.3	362.4	370.1	358.0	356.5
30	346.4	346.7	347.0	347.6	347.5	350.3	356.3	357.4	365.7	365.9	362.0	360.8	360.0	359.7	360.1	360.2	358.0	357.3	358.0	358.4	358.4	361.5	366.7	358.0	357.1
HOURLY MEANS	351.0	352.7	356.2	356.8	354.7	353.7	356.5	361.5	367.6	366.5	362.7	360.7	359.2	358.5	358.5	359.3	360.1	360.8	361.8	361.4	360.4	361.0	364.6	357.6	359.3

Tabel 36 Nilai Variasi harian komponen D – *declination* (menit) April 2021

Tondano Magnetic Observatory

April 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	30.66	30.90	31.71	32.15	32.05	31.82	31.51	31.91	32.10	32.09	31.81	31.69	31.63	31.62	31.58	31.60	31.73	31.77	31.82	31.88	31.85	31.74	32.10	31.75	31.73
2	31.68	32.12	32.47	32.72	32.58	31.86	30.99	31.19	31.52	31.79	31.74	31.69	31.65	31.63	31.49	31.62	31.78	31.61	31.78	31.67	31.60	31.56	32.05	31.63	31.77
3	31.32	31.56	31.94	31.78	31.17	30.86	30.84	31.56	32.27	32.41	31.94	31.79	31.76	31.59	31.57	31.58	31.61	31.61	31.55	31.51	31.36	31.22	31.74	31.69	31.59
4	31.40	31.63	31.90	31.52	30.83	30.55	31.09	32.04	32.69	32.53	32.04	31.79	31.64	31.58	31.62	31.63	31.66	31.73	31.66	31.55	31.35	31.43	32.03	31.65	31.65
5	31.05	31.00	31.10	31.61	31.42	31.12	31.26	31.91	32.52	32.62	32.20	31.97	31.83	31.71	31.68	31.49	31.49	31.47	31.40	31.25	31.09	31.32	32.37	31.79	31.61
6	31.12	31.56	32.16	32.55	31.87	31.00	30.93	31.15	31.71	32.11	32.11	31.91	31.72	31.58	31.59	31.72	31.70	31.77	31.61	31.52	31.38	31.35	31.42	31.05	31.61
7	30.86	31.22	31.65	31.46	30.79	30.52	30.81	31.54	32.22	32.43	32.51	31.82	31.55	31.44	31.14	30.98	31.66	31.22	31.46	31.07	31.08	31.34	31.86	31.13	31.41
8	30.52	30.89	31.40	31.46	31.24	30.46	30.18	30.51	31.21	31.53	31.56	31.53	31.53	31.43	31.45	31.45	31.42	31.41	31.43	31.39	31.32	31.24	31.58	31.66	31.24
9	31.83	32.33	32.53	32.88	32.47	31.64	32.01	32.39	32.24	32.10	31.86	31.74	31.67	31.64	31.64	31.66	31.58	31.60	31.56	31.53	31.46	31.42	31.50	31.03	31.85
10	30.67	30.97	31.77	32.08	32.02	31.76	31.92	32.19	32.31	32.19	31.97	31.85	31.74	31.66	31.61	31.61	31.56	31.66	31.69	31.62	31.37	30.94	30.39	29.61	31.55
11	29.84	30.93	31.53	31.41	31.19	31.17	31.55	31.89	31.93	31.89	31.61	31.54	31.47	31.46	31.49	31.61	31.68	31.73	31.76	31.80	31.59	31.41	31.42	30.64	31.44
12	30.43	31.47	32.77	33.04	32.31	31.99	31.99	31.87	31.89	31.82	31.71	31.55	31.48	31.38	31.38	31.37	31.52	31.67	31.63	31.78	31.55	31.21	31.61	31.26	31.70
13	31.09	31.72	31.96	31.61	31.33	31.09	31.06	31.28	31.60	31.55	31.57	31.48	31.36	31.27	31.31	31.50	31.66	31.83	31.83	31.65	31.35	31.00	31.23	30.88	31.43
14	30.83	31.08	31.33	30.99	30.41	30.49	30.95	31.41	31.76	31.99	31.74	31.64	31.60	31.46	31.44	31.51	31.61	31.68	31.79	31.71	31.60	31.53	31.39	30.40	31.35
15	29.76	29.75	30.33	30.90	31.11	31.33	32.19	32.48	32.30	32.07	31.75	31.60	31.55	31.50	31.50	31.76	31.75	31.78	31.80	31.75	31.72	31.53	31.29	30.49	31.42
16	30.10	30.56	30.81	30.49	30.52	30.83	31.25	31.25	32.12	32.08	31.42	31.26	30.90	30.78	31.06	31.50	31.73	31.77	32.33	31.84	31.77	32.29	32.92	32.23	31.41
17	30.73	31.09	31.07	30.90	30.90	31.28	31.76	31.76	32.04	31.90	31.28	30.97	30.86	31.07	31.24	31.21	30.96	31.44	32.09	32.10	31.90	31.85	31.61	30.70	31.36
18	30.18	30.34	31.48	31.87	31.87	31.54	31.66	32.28	32.56	31.77	31.42	31.47	31.18	31.01	31.15	31.15	31.34	31.61	31.60	31.76	31.87	32.04	31.61	30.42	31.47
19	29.64	30.22	30.76	31.23	31.23	31.41	31.75	31.99	32.38	31.90	31.93	31.41	31.26	31.13	31.03	31.32	31.39	31.66	31.70	32.01	31.71	31.95	31.95	30.72	31.40
20	30.01	30.25	30.36	30.46	30.46	30.73	31.39	31.94	32.65	32.28	31.70	31.55	31.37	31.39	31.41	31.62	31.57	31.69	32.01	31.70	31.55	31.77	32.05	31.17	31.38
21	30.54	30.47	31.15	31.24	31.24	30.82	31.32	31.83	32.21	31.99	31.61	31.38	31.32	31.35	31.33	31.30	31.37	31.48	31.45	31.42	31.31	31.48	32.00	31.70	31.39
22	31.33	31.33	30.65	29.77	29.77	29.58	29.97	30.52	31.93	31.95	31.69	31.53	31.37	31.43	31.47	31.50	31.50	31.49	31.46	31.37	31.21	31.23	31.84	31.52	31.14
23	30.57	30.26	30.30	30.18	30.18	30.50	30.48	31.27	32.89	32.37	31.66	31.43	31.37	31.30	31.26	31.28	31.51	31.51	31.65	31.90	32.14	32.51	32.42	31.52	31.35
24	29.44	28.67	28.70	28.98	28.98	29.49	30.48	31.74	33.00	32.71	31.91	31.67	31.51	31.33	31.32	31.36	31.41	31.55	31.57	31.69	31.67	31.90	33.00	32.05	31.09
25	31.02	30.19	30.37	30.54	30.54	30.67	30.82	31.24	32.21	31.92	31.18	31.26	30.92	30.97	30.99	31.09	31.35	31.55	31.82	31.65	31.73	31.97	32.53	31.67	31.26
26	30.63	30.39	30.30	30.36	30.36	30.44	30.62	30.79	31.77	31.63	31.23	31.08	31.01	30.96	31.00	31.12	31.26	31.30	31.49	31.48	31.33	31.28	31.68	31.30	31.03
27	30.53	30.08	30.10	29.90	29.90	30.30	31.25	32.07	32.25	32.09	31.70	31.43	31.27	31.17	31.17	31.28	31.24	31.32	31.32	31.31	31.27	31.40	31.95	31.73	31.17
28	31.30	30.88	30.74	30.81	30.81	30.95	30.98	31.32	32.33	32.17	31.72	31.55	31.40	31.40	31.38	31.41	31.45	31.49	31.53	31.56	31.56	31.80	32.56	31.94	31.46
29	31.04	30.45	29.99	29.96	29.96	30.69	31.02	31.75	32.09	31.85	31.69	31.41	31.13	31.12	31.05	31.08	31.17	31.20	31.25	31.35	31.50	31.68	32.35	31.30	31.17
30	30.27	30.28	30.30	30.35	30.35	30.60	31.13	31.24	31.97	31.99	31.66	31.55	31.48	31.45	31.49	31.49	31.31	31.24	31.30	31.33	31.33	31.60	32.06	31.30	31.21
HOURLY MEANS	30.68	30.82	31.12	31.17	31.00	30.92	31.17	31.61	32.16	32.06	31.73	31.55	31.42	31.36	31.36	31.43	31.50	31.56	31.65	31.60	31.52	31.57	31.88	31.26	31.42

Tabel 37 Nilai variasi harian komponen I – *inclination* (derajat) April 2021

Tondano Magnetic Observatory																							April 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-12.9	-12.9	-12.91	-12.90	-12.90	-12.90	-12.91	-12.92	-12.92	-12.93	-12.93	-12.93	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.92
2	-12.9	-12.9	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.93	-12.9	-12.9	-12.9	-12.92
3	-12.9	-12.9	-12.9	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.92
4	-12.9	-12.9	-12.92	-12.90	-12.88	-12.88	-12.89	-12.90	-12.90	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.92	-12.93	-12.93	-12.92	-12.92
5	-12.9	-12.9	-12.89	-12.88	-12.88	-12.88	-12.89	-12.90	-12.90	-12.91	-12.91	-12.91	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.92	-12.93	-12.94	-12.93	-12.91
6	-12.9	-12.9	-12.93	-12.92	-12.91	-12.90	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.92
7	-12.9	-12.9	-12.90	-12.89	-12.89	-12.89	-12.90	-12.91	-12.91	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.93	-12.94	-12.93	-12.93	-12.93	-12.94	-12.93	-12.92
8	-12.9	-12.9	-12.91	-12.91	-12.91	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93
9	-12.9	-12.9	-12.90	-12.90	-12.91	-12.90	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92
10	-12.9	-12.9	-12.90	-12.89	-12.89	-12.90	-12.90	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.92	-12.92	-12.92	-12.92
11	-12.9	-12.9	-12.90	-12.89	-12.89	-12.89	-12.90	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.92
12	-12.9	-12.9	-12.90	-12.89	-12.88	-12.89	-12.90	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.9	-12.9	-12.9	-12.9	-12.9	-12.9	-12.9	-12.9	-12.93	-12.92
13	-12.9	-12.9	-12.92	-12.91	-12.90	-12.90	-12.91	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.9	-12.9	-12.9	-12.9	-12.9	-12.9	-12.9	-12.9	-12.93	-12.92
14	-12.9	-12.9	-12.91	-12.90	-12.89	-12.90	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92
15	-12.9	-12.9	-12.90	-12.89	-12.88	-12.89	-12.90	-12.92	-12.92	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.92	-12.93	-12.93	-12.93	-12.93	-12.92	-12.92	-12.91	-12.91
16	-12.9	-12.9	-12.89	-12.88	-12.89	-12.89	-12.90	-12.90	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.94	-12.94	-12.93	-12.93	-12.94	-12.93	-12.93	-12.94	-12.95	-12.95	-12.92
17	-12.9	-12.9	-12.91	-12.90	-12.91	-12.92	-12.93	-12.93	-12.93	-12.94	-12.93	-12.93	-12.93	-12.93	-12.94	-12.93	-12.93	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93	-12.92	-12.93
18	-12.9	-12.9	-12.90	-12.89	-12.89	-12.89	-12.90	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.93	-12.92	-12.92
19	-12.9	-12.9	-12.91	-12.90	-12.9	-12.9	-12.9	-12.9	-12.9	-12.92	-12.93	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.94	-12.93	-12.94	-12.93	-12.93	-12.94	-12.93	-12.92
20	-12.9	-12.9	-12.89	-12.88	-12.89	-12.89	-12.90	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92
21	-12.9	-12.9	-12.89	-12.89	-12.89	-12.88	-12.90	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92
22	-12.9	-12.9	-12.89	-12.88	-12.88	-12.88	-12.89	-12.90	-12.90	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.91
23	-12.9	-12.9	-12.88	-12.87	-12.87	-12.87	-12.88	-12.89	-12.90	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.9	-12.91
24	-12.9	-12.9	-12.89	-12.88	-12.89	-12.88	-12.89	-12.90	-12.90	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.93	-12.92
25	-12.9	-12.9	-12.92	-12.91	-12.92	-12.93	-12.93	-12.92	-12.93	-12.92	-12.93	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93	-12.94	-12.93	-12.93
26	-12.9	-12.9	-12.91	-12.91	-12.92	-12.92	-12.93	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93
27	-12.9	-12.9	-12.91	-12.90	-12.90	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92
28	-12.9	-12.9	-12.91	-12.90	-12.91	-12.90	-12.90	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.94	-12.93	-12.92
29	-12.9	-12.9	-12.90	-12.90	-12.90	-12.90	-12.89	-12.89	-12.90	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.93	-12.92	-12.92
30	-12.9	-12.9	-12.89	-12.88	-12.88	-12.87	-12.9	-12.9	-12.9	-12.9	-12.9	-12.9	-12.9	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.92	-12.91
HOURLY MEANS	-12.92	-12.91	-12.90	-12.90	-12.89	-12.90	-12.90	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92

2. Gangguan badai magnet

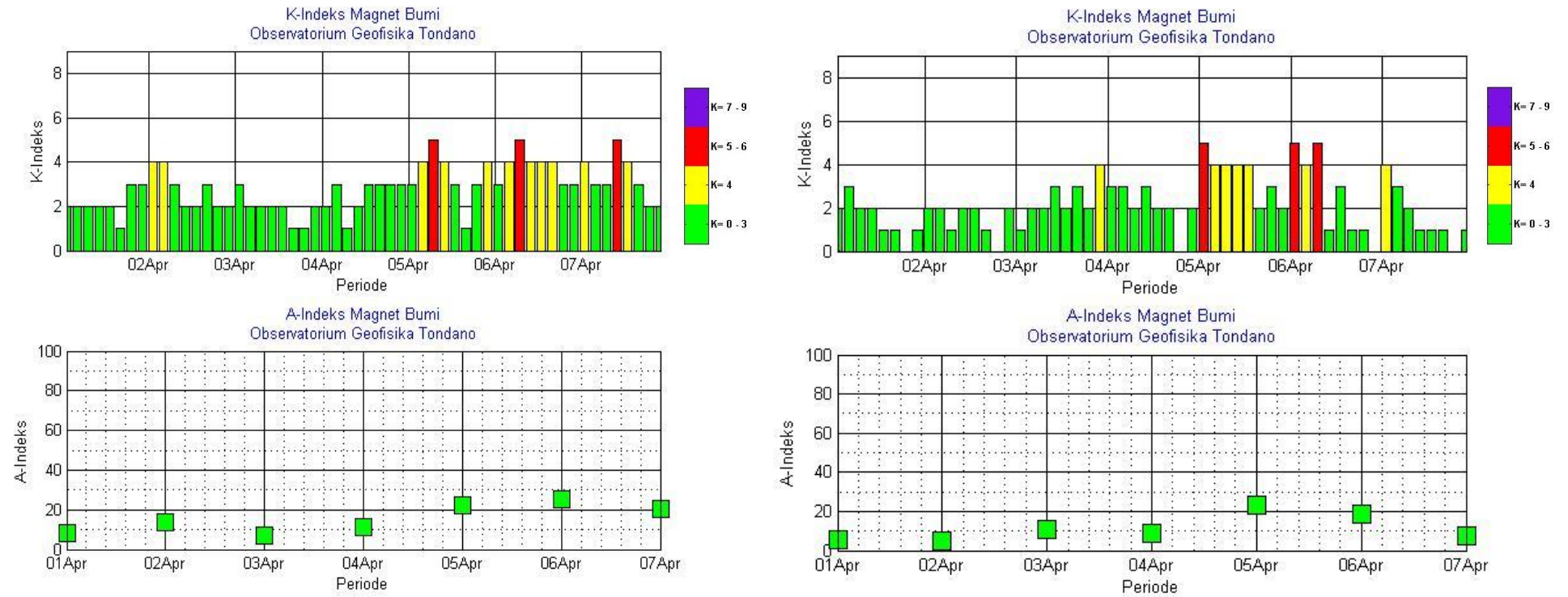
Tabel 38 Monitoring waktu gangguan pada pengamatan magnet bumi April 2021

Kejadian rekaman magnet bumi							Durasi gangguan	Keterangan
No	Hari			Waktu				
	Tanggal	Bulan	Tahun	Jam	Menit	Detik		
1	1	4	2021					
2	2	4	2021					
3	3	4	2021					
4	4	4	2021					
5	5	4	2021					
6	6	4	2021					
7	7	4	2021					
8	8	4	2021					
9	9	4	2021					
10	10	4	2021					
11	11	4	2021					
12	12	4	2021					
13	13	4	2021					
14	14	4	2021					
15	15	4	2021					
16	16	4	2021					
17	17	4	2021					
18	18	4	2021					
19	19	4	2021					
20	20	4	2021					
21	21	4	2021					
22	22	4	2021					
23	23	4	2021					
24	24	4	2021					
25	25	4	2021					
26	26	4	2021					
27	27	4	2021					
28	28	4	2021					
29	29	4	2021					
30	30	4	2021					

Tabel 39 Hasil analisa K-indeks dan A-indeks April 2021

Tanggal	K-1	K-2	K-3	K-4	K-5	K-6	K-7	K-8	A Indeks	Keterangan
1	2	2	2	2	2	1	3	3	8.500	Tenang
2	4	4	3	2	2	3	2	2	14.000	Tenang
3	3	2	2	2	2	1	1	2	7.000	Tenang
4	2	3	1	2	3	3	3	3	11.500	Tenang
5	3	4	5	4	3	1	3	4	22.125	Tenang
6	3	4	5	4	4	4	3	3	25.125	Tenang
7	4	3	3	5	4	3	2	2	20.125	Tenang
8	3	2	3	2	1	0	1	2	7.125	Tenang
9	3	3	3	2	1	2	3	2	10.500	Tenang
10	2	3	3	2	1	1	2	2	8.000	Tenang
11	1	3	1	1	2	1	1	2	5.500	Tenang
12	3	3	1	1	1	3	1	2	8.000	Tenang
13	2	1	1	3	3	2	1	2	7.500	Tenang
14	2	3	2	2	3	2	3	3	11.000	Tenang
15	2	4	4	2	2	2	2	3	13.000	Tenang
16	4	3	2	3	4	3	4	2	17.500	Tenang
17	4	4	3	4	3	3	2	2	17.500	Tenang
18	4	3	3	3	3	3	2	3	15.500	Tenang
19	3	4	3	3	3	2	1	3	14.000	Tenang
20	3	3	3	3	2	2	3	2	12.000	Tenang
21	2	3	2	2	1	1	0	1	5.625	Tenang
22	2	2	1	2	2	1	0	2	5.125	Tenang
23	1	2	2	3	2	3	2	4	11.000	Tenang
24	3	3	2	3	2	2	0	2	9.125	Tenang
25	5	4	4	4	4	2	3	2	23.125	Tenang
26	5	4	5	1	3	1	1	0	18.375	Tenang
27	4	3	2	1	1	1	0	1	7.625	Tenang
28	3	3	3	1	2	0	1	2	8.125	Tenang
29	2	3	2	1	2	2	3	3	9.500	Tenang
30	2	2	3	2	2	3	3	3	11.000	Tenang

Gambar 25 Plot hasil analisa K-indeks dan A-indeks saat terjadi gangguan magnet bumi di bulan April 2021



E. Mei 2021

1. Nilai variasi harian bulan Mei 2021

Tabel 40 Nilai variasi harian komponen H – *horizontal* (nT) Mei 2021

Tondano Magnetic Observatory

Mei 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39358.1	39364.7	39368.7	39366.0	39361.3	39357.0	39355.4	39342.5	39328.3	39323.4	39322.1	39326.0	39326.2	39328.0	39330.7	39328.4	39328.3	39331.1	39331.2	39331.2	39330.6	39334.3	39341.1	39350.2	39340.2
2	39361.0	39373.3	39371.5	39357.2	39340.3	39324.0	39314.5	39310.9	39319.6	39315.4	39318.3	39320.2	39322.9	39323.0	39325.5	39328.3	39328.7	39332.1	39333.3	39335.5	39339.4	39346.3	39354.3	39373.3	39336.2
3	39384.4	39386.8	39390.1	39388.3	39386.2	39379.7	39360.4	39342.9	39332.0	39329.7	39328.0	39325.1	39324.8	39322.5	39323.7	39324.6	39327.6	39325.8	39324.8	39325.3	39325.9	39329.2	39334.9	39344.6	39344.5
4	39356.8	39375.2	39382.2	39384.5	39378.8	39365.2	39357.4	39347.2	39339.9	39333.0	39331.5	39332.5	39331.0	39330.3	39329.4	39329.5	39329.0	39329.3	39329.0	39330.4	39330.6	39333.9	39338.6	39346.8	39344.7
5	39358.9	39370.7	39377.4	39379.3	39374.3	39365.2	39353.7	39341.2	39332.4	39330.6	39330.5	39329.9	39329.0	39328.1	39328.1	39328.0	39328.1	39329.1	39330.2	39332.2	39335.6	39335.2	39338.7	39344.8	39343.0
6	39355.5	39367.5	39376.4	39383.3	39380.1	39366.5	39350.3	39334.2	39326.0	39324.2	39325.4	39325.4	39324.3	39318.7	39319.3	39321.7	39325.4	39326.6	39328.1	39330.3	39332.0	39334.0	39341.7	39349.2	39340.3
7	39360.8	39370.5	39371.9	39378.3	39377.8	39369.4	39359.9	39349.7	39339.9	39335.8	39333.7	39333.8	39334.0	39331.5	39330.7	39332.2	39333.3	39331.7	39331.8	39333.8	39338.6	39340.8	39350.1	39361.2	39347.1
8	39370.4	39376.2	39376.4	39371.7	39367.0	39364.1	39353.4	39341.0	39332.3	39331.8	39327.1	39322.7	39321.5	39326.0	39327.8	39330.3	39331.1	39332.5	39333.1	39332.5	39334.4	39338.3	39345.2	39351.0	39343.2
9	39358.4	39368.5	39372.1	39370.7	39367.1	39360.0	39348.3	39341.0	39336.7	39339.4	39337.8	39337.8	39338.6	39338.0	39334.6	39333.7	39333.9	39334.2	39337.2	39340.6	39342.3	39348.2	39358.1	39371.0	39347.8
10	39388.0	39399.7	39408.3	39409.0	39400.5	39381.1	39365.7	39354.6	39348.2	39345.9	39342.9	39337.6	39333.9	39326.0	39322.8	39321.2	39320.8	39320.0	39322.8	39326.3	39330.4	39330.0	39331.5	39337.4	39350.2
11	39345.9	39360.4	39368.0	39371.5	39367.9	39359.6	39352.6	39344.1	39334.0	39329.1	39332.8	39333.5	39332.8	39332.4	39332.6	39332.9	39332.8	39331.8	39333.2	39333.8	39332.9	39334.2	39336.3	39337.8	39341.8
12	39347.6	39363.3	39375.3	39378.5	39375.9	39368.3	39362.6	39358.9	39350.5	39346.6	39343.4	39338.3	39306.2	39252.8	39233.9	39258.0	39263.0	39268.8	39276.6	39282.6	39284.4	39294.0	39302.3	39308.8	39318.4
13	39312.3	39313.2	39313.0	39316.0	39315.1	39316.8	39317.2	39311.5	39302.9	39304.8	39304.2	39307.6	39310.3	39307.3	39306.7	39303.3	39303.5	39302.7	39304.3	39304.4	39307.7	39311.7	39317.0	39324.9	39309.9
14	39338.9	39357.1	39363.9	39360.8	39355.7	39346.9	39334.3	39324.7	39317.2	39314.9	39315.6	39315.8	39316.0	39318.0	39317.9	39318.8	39320.5	39322.1	39322.5	39321.8	39323.4	39322.0	39327.7	39338.0	39329.8
15	39343.6	39363.9	39378.9	39374.3	39369.5	39364.6	39353.6	39328.0	39313.5	39308.8	39312.0	39312.9	39315.3	39314.1	39311.8	39313.5	39315.2	39315.8	39317.4	39317.6	39317.4	39320.9	39327.5	39335.2	39331.1
16	39345.1	39356.4	39359.3	39359.6	39353.1	39342.1	39332.2	39332.2	39314.8	39314.8	39314.0	39307.5	39312.3	39318.7	39321.6	39321.4	39322.1	39319.1	39319.7	39318.8	39312.9	39311.0	39315.5	39325.4	39327.1
17	39340.7	39358.2	39361.2	39357.0	39348.0	39338.0	39324.6	39324.6	39313.6	39313.4	39312.7	39313.1	39314.4	39314.6	39316.5	39318.1	39320.2	39325.2	39330.8	39332.5	39328.9	39328.3	39331.6	39334.9	39329.2
18	39351.1	39365.9	39365.3	39346.1	39335.6	39335.6	39333.5	39313.4	39309.9	39311.5	39302.1	39302.6	39308.1	39309.3	39314.9	39316.0	39316.6	39317.4	39319.1	39320.2	39322.8	39326.3	39331.3	39337.8	39325.5
19	39348.5	39360.8	39377.6	39380.5	39373.2	39373.2	39367.3	39354.9	39339.2	39332.7	39331.9	39330.9	39331.9	39330.0	39331.1	39333.5	39333.7	39334.0	39330.1	39328.6	39326.7	39331.3	39344.6	39356.8	39345.1
20	39366.7	39374.5	39364.8	39358.9	39354.2	39354.2	39339.0	39322.3	39294.7	39297.2	39293.5	39275.7	39274.4	39289.6	39290.6	39290.6	39296.7	39297.0	39312.5	39306.2	39302.6	39304.6	39315.1	39321.8	39316.6
21	39332.7	39340.4	39339.8	39339.6	39334.1	39334.1	39327.6	39321.5	39312.3	39308.9	39315.6	39316.0	39313.9	39313.6	39314.6	39318.8	39317.8	39317.5	39318.7	39318.1	39319.4	39321.2	39329.3	39339.3	39323.5
22	39350.3	39360.0	39363.7	39358.3	39350.4	39350.4	39340.8	39330.6	39314.6	39313.0	39312.0	39314.4	39318.2	39317.8	39315.8	39313.9	39314.8	39317.2	39318.2	39319.7	39322.7	39325.4	39331.4	39339.8	39329.7
23	39356.5	39367.5	39371.0	39372.6	39371.9	39371.9	39367.0	39351.7	39324.0	39324.7	39325.8	39327.3	39328.9	39328.2	39326.8	39324.8	39327.0	39329.5	39330.4	39331.1	39331.7	39335.5	39343.8	39349.7	39342.5
24	39352.0	39359.3	39361.7	39364.1	39360.0	39360.0	39353.1	39344.8	39325.8	39321.4	39319.8	39319.9	39321.4	39322.2	39322.8	39324.0	39324.6	39325.8	39328.2	39328.8	39328.5	39331.2	39340.7	39355.1	39337.3
25	39371.8	39382.4	39385.1	39379.2	39366.8	39366.8	39354.1	39346.1	39332.6	39329.7	39326.0	39321.9	39321.9	39325.2	39326.6	39328.1	39330.5	39332.2	39333.9	39335.4	39333.5	39334.6	39342.4	39349.9	39344.0
26	39360.3	39368.4	39372.3	39375.5	39371.9	39371.9	39363.6	39349.2	39331.7	39330.4	39329.4	39329.8	39332.2	39343.9	39344.7	39352.1	39358.6	39357.1	39345.2	39347.8	39342.4	39346.1	39363.2	39368.0	39352.3
27	39390.5	39387.1	39379.8	39372.2	39347.9	39347.9	39341.2	39334.1	39283.1	39285.2	39285.9	39290.8	39300.1	39313.2	39314.6	39314.7	39313.7	39311.1	39313.5	39317.1	39318.0	39323.6	39334.9	39345.6	39327.7
28	39356.8	39368.5	39371.6	39363.5	39350.1	39350.1	39336.0	39327.9	39317.1	39319.3	39319.8	39319.8	39320.4	39320.5	39320.9	39321.6	39323.5	39324.4	39323.0	39322.0	39321.9	39327.5	39338.7	39350.8	39334.0
29	39361.9	39369.5	39369.8	39369.8	39365.0	39365.0	39358.3	39347.8	39325.9	39322.5	39321.3	39316.4	39318.5	39319.4	39313.2	39311.3	39313.8	39315.3	39321.3	39324.0	39329.3	39339.0	39336.5	39344.1	39336.6
30	39357.7	39367.9	39364.2	39361.8	39356.0	39356.0	39343.3	39335.4	39323.7	39328.7	39330.0	39332.8	39333.4	39332.3	39331.0	39331.7	39333.0	39334.3	39334.4	39333.3	39333.6	39332.9	39340.7	39346.5	39340.6
31	39356.5	39367.5	39370.9	39372.6	39371.9	39367.0	39351.7	39333.7	39324.0	39324.7	39325.8	39327.3	39328.9	39328.2	39326.8	39324.8	39327.0	39329.5	39330.4	39331.1	39331.7	39335.5	39343.8	39349.7	39340.9
HOURLY MEANS	39356.1	39366.6	39370.1	39368.4	39362.2	39357.2	39347.5	39336.9	39323.9	39322.3	39321.6	39320.8	39320.8	39320.1	39319.6	39321.0	39322.4	39323.2	39324.7	39325.6	39326.2	39329.3	39336.4	39344.8	39336.2

Tabel 41 Nilai variasi harian komponen Z – vertical (nT) Mei 2021

Tondano Magnetic Observatory																							Mei 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-9018.1	-9010.7	-9006.8	-9005.5	-9004.4	-9008.4	-9009.3	-9007.1	-9007.1	-9016.0	-9013.7	-9016.5	-9017.4	-9018.6	-9018.9	-9019.8	-9021.4	-9021.7	-9021.5	-9020.8	-9020.8	-9023.8	-9027.8	-9025.2	-9015.9
2	-9018.7	-9013.9	-9011.1	-9011.9	-9011.7	-9017.2	-9017.9	-9024.3	-9024.3	-9018.1	-9018.2	-9017.8	-9018.7	-9018.6	-9019.3	-9019.9	-9019.3	-9022.4	-9021.7	-9022.9	-9023.9	-9025.2	-9031.6	-9035.8	-9020.2
3	-9027.9	-9021.7	-9021.5	-9014.3	-9013.9	-9012.7	-9013.3	-9015.4	-9015.4	-9014.5	-9015.3	-9016.3	-9016.4	-9017.2	-9018.6	-9018.6	-9020.5	-9019.2	-9019.8	-9021.3	-9021.9	-9023.3	-9024.5	-9020.4	-9018.5
4	-9015.5	-9010.4	-9000.9	-8998.6	-9003.1	-9005.0	-9006.2	-9009.5	-9009.5	-9012.3	-9014.0	-9015.4	-9015.0	-9016.2	-9017.0	-9017.9	-9019.0	-9019.6	-9019.8	-9020.6	-9020.2	-9022.1	-9027.2	-9027.3	-9014.3
5	-9022.3	-9012.5	-9002.9	-8994.1	-8988.6	-8990.3	-8994.5	-9000.7	-9000.7	-9009.0	-9011.3	-9013.3	-9013.9	-9014.6	-9015.7	-9016.5	-9017.5	-9018.5	-9018.5	-9019.1	-9018.9	-9019.4	-9027.7	-9026.8	-9011.1
6	-9023.1	-9014.4	-9006.6	-8999.8	-8999.9	-9000.2	-8998.3	-8996.7	-8996.7	-9011.1	-9014.5	-9015.8	-9016.1	-9016.2	-9017.4	-9017.3	-9018.1	-9017.9	-9018.5	-9018.6	-9018.3	-9019.4	-9028.3	-9027.0	-9012.9
7	-9019.8	-9015.7	-9012.0	-9010.1	-9005.2	-9007.8	-9012.1	-9013.7	-9013.7	-9015.7	-9016.9	-9017.6	-9016.7	-9015.9	-9017.9	-9019.1	-9018.4	-9018.0	-9018.7	-9019.7	-9020.4	-9021.0	-9026.4	-9021.4	-9016.4
8	-9013.8	-9007.8	-9007.4	-9008.8	-9012.2	-9012.3	-9010.9	-9012.5	-9012.5	-9015.4	-9015.9	-9017.1	-9017.2	-9018.6	-9017.7	-9018.3	-9018.3	-9018.4	-9017.7	-9018.7	-9019.9	-9021.0	-9027.0	-9024.0	-9016.0
9	-9018.4	-9012.5	-9007.9	-9006.8	-9009.3	-9014.1	-9014.8	-9014.2	-9014.2	-9017.6	-9014.6	-9015.5	-9016.0	-9015.3	-9015.2	-9017.2	-9017.3	-9017.5	-9018.7	-9019.1	-9019.3	-9021.1	-9022.7	-9017.6	-9015.7
10	-9010.1	-9001.8	-8998.1	-8999.1	-9004.8	-9010.9	-9013.0	-9019.6	-9019.6	-9016.0	-9015.6	-9015.6	-9017.0	-9014.9	-9016.8	-9018.2	-9019.2	-9020.1	-9020.6	-9020.6	-9021.2	-9019.7	-9021.7	-9017.3	-9014.7
11	-9015.2	-9015.8	-9015.3	-9013.8	-9011.9	-9014.1	-9014.5	-9013.0	-9013.0	-9013.2	-9015.0	-9015.7	-9015.9	-9016.8	-9017.4	-9017.9	-9018.0	-9018.2	-9019.4	-9019.1	-9019.4	-9020.2	-9022.5	-9020.7	-9016.5
12	-9014.0	-9007.9	-9002.8	-8998.8	-8999.0	-9000.1	-9005.4	-9003.3	-9003.3	-9006.4	-9007.7	-9010.3	-9002.9	-9001.0	-9019.2	-9020.8	-9030.3	-9023.5	-9022.7	-9022.9	-9023.9	-9024.2	-9023.3	-9012.3	-9011.9
13	-9007.3	-9006.5	-9005.2	-9006.9	-9009.0	-9007.8	-9010.5	-9011.9	-9011.9	-9012.5	-9012.8	-9014.2	-9013.7	-9013.6	-9015.2	-9016.7	-9017.9	-9018.1	-9020.4	-9020.5	-9021.8	-9023.2	-9030.0	-9030.1	-9014.9
14	-9026.6	-9024.7	-9016.4	-9012.2	-9010.4	-9006.1	-9005.0	-9006.3	-9006.3	-9010.9	-9013.6	-9014.8	-9015.4	-9016.3	-9016.5	-9017.0	-9017.9	-9019.2	-9020.1	-9020.4	-9019.7	-9020.5	-9024.4	-9022.7	-9016.0
15	-9015.3	-9017.7	-9011.0	-9002.4	-9004.1	-9011.4	-9008.7	-9005.2	-9011.9	-9013.6	-9016.3	-9016.2	-9015.9	-9015.7	-9017.2	-9018.7	-9019.7	-9019.7	-9020.4	-9019.3	-9020.6	-9023.7	-9026.3	-9023.3	-9015.6
16	-9023.3	-9026.3	-9020.2	-9016.2	-9013.6	-9014.1	-9016.5	-9016.5	-9016.5	-9017.0	-9016.4	-9016.2	-9019.9	-9018.9	-9017.7	-9018.0	-9018.8	-9018.3	-9019.9	-9019.5	-9020.8	-9021.2	-9024.5	-9022.0	-9018.9
17	-9017.7	-9013.1	-9006.2	-9004.7	-9004.3	-9004.3	-9006.9	-9006.9	-9006.9	-9014.9	-9014.4	-9015.7	-9016.0	-9016.6	-9017.9	-9017.2	-9018.9	-9019.8	-9022.3	-9018.5	-9019.1	-9020.6	-9029.1	-9029.7	-9015.1
18	-9031.6	-9024.6	-9008.9	-8992.5	-8992.5	-8997.0	-9001.6	-9003.8	-9003.8	-9018.8	-9014.9	-9017.2	-9018.6	-9017.3	-9017.3	-9017.6	-9018.4	-9017.9	-9018.9	-9018.7	-9020.1	-9022.4	-9026.3	-9026.7	-9014.5
19	-9021.9	-9014.4	-9011.4	-9003.9	-9003.9	-9001.6	-9002.8	-9005.1	-9005.1	-9013.2	-9015.6	-9015.6	-9015.2	-9015.7	-9016.6	-9017.8	-9018.3	-9018.6	-9016.8	-9019.4	-9020.0	-9023.4	-9028.8	-9025.9	-9014.6
20	-9020.3	-9006.4	-8993.9	-8994.0	-8994.0	-9002.4	-9008.1	-9011.7	-9011.7	-9013.6	-9010.7	-9010.8	-9017.9	-9020.5	-9015.5	-9016.6	-9020.2	-9021.3	-9025.0	-9015.8	-9020.0	-9023.3	-9023.5	-9017.4	-9013.1
21	-9012.3	-9008.9	-9011.4	-9009.4	-9009.4	-9011.9	-9014.7	-9016.4	-9016.4	-9014.0	-9019.9	-9018.6	-9018.1	-9018.1	-9019.8	-9020.7	-9019.7	-9020.1	-9021.1	-9022.6	-9022.6	-9023.5	-9027.2	-9023.6	-9017.5
22	-9019.2	-9015.0	-9006.2	-9001.1	-9001.1	-9001.3	-9004.1	-9009.8	-9009.8	-9013.1	-9014.3	-9017.0	-9017.7	-9016.9	-9016.3	-9017.2	-9019.1	-9019.8	-9020.6	-9022.3	-9022.4	-9022.8	-9027.8	-9022.9	-9014.9
23	-9021.4	-9014.8	-9009.3	-9013.9	-9013.9	-9018.9	-9016.2	-9012.2	-9012.2	-9013.8	-9013.9	-9014.6	-9015.7	-9015.2	-9015.4	-9016.2	-9017.5	-9017.7	-9017.8	-9018.3	-9019.0	-9021.3	-9025.4	-9021.5	-9016.5
24	-9020.6	-9014.5	-9009.5	-9009.0	-9009.0	-9010.2	-9013.1	-9011.4	-9011.4	-9012.2	-9015.4	-9017.2	-9016.3	-9016.9	-9017.4	-9018.0	-9018.3	-9018.9	-9019.9	-9020.0	-9020.2	-9022.2	-9027.8	-9026.7	-9016.5
25	-9021.0	-9012.8	-9003.7	-9000.0	-9000.0	-9005.5	-9009.7	-9013.5	-9013.5	-9014.4	-9014.0	-9014.3	-9016.1	-9017.2	-9017.4	-9017.7	-9018.1	-9018.1	-9018.6	-9018.6	-9018.8	-9021.3	-9027.0	-9022.4	-9014.7
26	-9017.1	-9010.9	-9008.2	-9009.1	-9009.1	-9007.5	-9012.6	-9013.3	-9013.3	-9010.8	-9011.2	-9013.8	-9015.1	-9014.8	-9015.6	-9016.9	-9017.0	-9013.4	-9010.2	-9017.5	-9015.8	-9020.0	-9026.0	-9017.8	-9014.0
27	-9017.8	-8997.3	-8994.0	-8999.6	-8999.6	-9000.9	-9007.5	-9013.1	-9013.1	-9020.0	-9015.7	-9015.2	-9017.1	-9019.2	-9013.4	-9013.6	-9013.6	-9016.0	-9017.3	-9018.1	-9018.5	-9020.6	-9025.2	-9021.8	-9012.9
28	-9013.8	-9007.9	-9006.8	-9003.4	-9003.4	-9005.1	-9012.6	-9018.0	-9018.0	-9014.9	-9013.9	-9014.7	-9014.5	-9015.0	-9015.9	-9015.7	-9016.8	-9016.7	-9016.5	-9017.0	-9019.2	-9022.3	-9027.0	-9025.0	-9014.8
29	-9016.5	-9008.0	-9001.7	-9001.7	-9001.7	-9001.2	-9002.9	-9005.8	-9005.8	-9011.0	-9011.5	-9012.2	-9015.4	-9013.9	-9014.4	-9014.6	-9014.8	-9018.0	-9018.9	-9018.6	-9024.1	-9023.8	-9021.2	-9020.7	-9012.4
30	-9016.6	-9009.0	-8999.9	-8995.1	-8995.1	-8995.5	-8998.4	-9005.9	-9013.6	-9013.1	-9013.1	-9014.9	-9013.1	-9013.9	-9014.7	-9016.2	-9016.7	-9017.3	-9017.5	-9017.2	-9019.4	-9021.1	-9026.3	-9024.9	-9012.0
31	-9021.4	-9014.8	-9009.3	-9013.9	-9018.9	-9016.2	-9012.2	-9009.0	-9010.4	-9013.8	-9013.9	-9014.6	-9015.7	-9015.2	-9015.4	-9016.2	-9017.5	-9017.7	-9017.8	-9018.3	-9019.0	-9021.3	-9025.4	-9021.5	-9016.2
HOURLY MEANS	-9018.7	-9012.7	-9007.3	-9004.9	-9005.1	-9006.8	-9008.8	-9010.5	-9011.0	-9013.9	-9014.3	-9015.3	-9015.8	-9016.0	-9016.8	-9017.6	-9018.6	-9018.8	-9019.3	-9019.5	-9020.3	-9021.9	-9026.1	-9023.3	-9015.1

Tabel 42 Nilai Variasi harian komponen F – total (nT) Mei 2021

Tondano Magnetic Observatory

Mei 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	40378.1	40382.8	40385.9	40382.9	40378.1	40374.8	40373.4	40360.4	40346.6	40343.8	40341.9	40346.4	40346.7	40348.8	40351.5	40349.5	40349.8	40352.5	40352.6	40352.4	40351.8	40356.1	40363.6	40371.9	40360.1
2	40381.0	40391.9	40389.5	40375.8	40359.2	40344.6	40335.5	40333.4	40341.9	40336.4	40339.3	40341.0	40343.9	40343.9	40346.6	40349.4	40349.6	40353.7	40354.7	40357.0	40361.1	40368.1	40377.3	40396.8	40357.2
3	40405.9	40406.8	40409.9	40406.6	40404.5	40397.9	40379.2	40362.6	40352.0	40349.5	40348.1	40345.4	40345.2	40343.1	40344.7	40345.5	40348.8	40346.8	40345.9	40346.8	40347.6	40351.0	40356.9	40365.4	40364.8
4	40376.2	40393.0	40397.7	40399.5	40394.9	40382.1	40374.7	40365.5	40358.3	40352.3	40351.2	40352.4	40350.9	40350.5	40349.8	40350.1	40349.9	40350.4	40350.1	40351.5	40351.7	40355.4	40361.1	40369.1	40364.1
5	40379.8	40389.1	40393.5	40393.3	40387.3	40378.8	40368.5	40357.7	40349.1	40349.2	40349.6	40349.5	40348.8	40348.0	40348.3	40348.4	40348.7	40349.9	40350.9	40353.1	40356.3	40356.0	40361.3	40367.1	40361.8
6	40376.7	40386.4	40393.3	40398.5	40395.4	40382.2	40366.0	40349.9	40342.0	40343.4	40345.3	40345.6	40344.7	40339.3	40340.1	40342.4	40346.2	40347.3	40348.9	40351.0	40352.6	40354.9	40364.4	40371.4	40359.5
7	40381.0	40389.5	40390.2	40395.9	40394.4	40386.7	40378.4	40368.9	40359.3	40355.8	40354.0	40354.3	40354.2	40351.7	40351.2	40353.0	40353.9	40352.3	40352.6	40354.7	40359.5	40361.8	40372.1	40381.8	40367.0
8	40389.1	40393.4	40393.5	40389.2	40385.4	40382.6	40371.9	40360.1	40351.6	40351.8	40347.4	40343.3	40342.1	40346.8	40348.4	40351.0	40351.8	40353.2	40353.6	40353.2	40355.3	40359.4	40367.5	40372.4	40363.1
9	40378.4	40387.0	40389.4	40387.8	40384.9	40379.0	40367.7	40360.6	40356.4	40359.7	40357.4	40357.7	40358.5	40357.8	40354.5	40354.1	40354.3	40354.7	40357.8	40361.2	40362.9	40369.1	40379.1	40390.5	40367.5
10	40405.4	40414.9	40422.6	40423.4	40416.4	40398.9	40384.3	40375.0	40368.8	40365.6	40362.7	40357.5	40354.2	40346.0	40343.3	40342.1	40341.9	40341.3	40344.2	40347.6	40351.8	40351.0	40352.9	40357.7	40369.6
11	40365.5	40379.8	40387.1	40390.1	40386.2	40378.6	40371.9	40363.3	40353.4	40348.7	40352.7	40353.6	40352.9	40352.8	40353.1	40353.5	40353.4	40352.4	40354.1	40354.5	40353.7	40355.2	40357.7	40358.8	40361.8
12	40366.9	40380.8	40391.4	40393.6	40391.1	40383.9	40379.6	40375.5	40367.4	40364.2	40361.4	40357.0	40324.0	40271.6	40257.3	40281.1	40288.0	40292.2	40299.6	40305.6	40307.4	40316.9	40324.8	40328.7	40337.9
13	40331.0	40331.7	40331.2	40334.5	40334.1	40335.5	40336.5	40331.2	40322.9	40324.8	40324.3	40328.0	40330.4	40327.6	40327.3	40324.3	40324.7	40324.1	40326.1	40326.2	40329.8	40334.0	40340.6	40348.4	40330.4
14	40361.2	40378.5	40383.3	40379.3	40374.0	40364.4	40351.9	40342.9	40335.5	40334.3	40335.6	40336.1	40336.4	40338.6	40338.5	40339.4	40341.3	40343.2	40343.8	40343.2	40344.5	40343.4	40349.8	40359.5	40349.9
15	40363.3	40383.6	40396.7	40390.3	40386.1	40382.9	40371.5	40345.8	40333.2	40329.0	40332.7	40333.6	40335.8	40334.6	40332.7	40334.7	40336.6	40337.2	40338.9	40338.8	40339.0	40343.0	40350.0	40356.8	40351.1
16	40366.5	40378.2	40379.6	40379.1	40372.2	40361.5	40352.4	40352.4	40335.4	40335.6	40334.7	40328.3	40333.8	40339.8	40342.3	40342.3	40343.1	40340.1	40341.0	40340.1	40334.6	40332.9	40337.9	40347.0	40348.0
17	40361.0	40377.0	40378.4	40374.0	40365.1	40355.4	40342.9	40342.9	40332.1	40333.8	40333.0	40333.6	40335.0	40335.3	40337.4	40338.8	40341.2	40346.3	40352.4	40353.2	40349.8	40349.5	40354.6	40358.0	40349.2
18	40374.2	40387.1	40383.0	40360.6	40350.4	40351.4	40350.4	40331.2	40327.9	40332.8	40322.8	40323.7	40329.4	40330.3	40335.7	40336.9	40337.6	40338.3	40340.2	40341.2	40344.1	40348.0	40353.8	40360.2	40345.5
19	40369.5	40379.8	40395.6	40396.7	40389.6	40389.1	40383.6	40372.0	40356.7	40352.2	40352.0	40351.0	40351.8	40350.1	40351.4	40353.9	40354.3	40354.6	40350.5	40349.5	40347.9	40353.1	40367.3	40378.5	40364.6
20	40386.9	40391.4	40379.2	40373.4	40368.8	40370.7	40357.2	40341.8	40314.8	40317.7	40313.4	40296.1	40296.4	40311.8	40311.7	40312.0	40318.6	40319.2	40335.2	40326.9	40324.4	40327.1	40337.3	40342.5	40336.4
21	40352.0	40358.8	40358.7	40358.1	40352.7	40353.3	40347.6	40342.0	40333.0	40329.2	40337.0	40337.1	40335.0	40334.6	40336.0	40340.3	40339.1	40338.9	40340.3	40340.1	40341.3	40343.3	40352.0	40361.0	40344.2
22	40370.6	40379.2	40380.9	40374.4	40366.8	40366.8	40358.0	40349.3	40333.8	40333.0	40332.2	40335.2	40339.0	40338.5	40336.4	40334.8	40336.1	40338.5	40339.7	40341.6	40344.4	40347.2	40354.2	40361.3	40349.7
23	40377.3	40386.4	40388.7	40391.2	40390.6	40391.7	40386.2	40370.5	40343.5	40344.5	40345.6	40347.2	40349.0	40348.3	40346.9	40345.1	40347.6	40350.1	40351.0	40351.7	40352.5	40356.7	40365.8	40370.6	40362.4
24	40372.6	40378.4	40379.6	40381.9	40377.8	40378.1	40372.1	40363.6	40345.1	40340.9	40340.1	40340.6	40341.9	40342.7	40343.4	40344.8	40345.5	40346.7	40349.3	40349.9	40349.6	40352.7	40363.3	40377.1	40357.4
25	40392.1	40400.5	40401.1	40394.5	40382.5	40383.7	40372.3	40365.3	40352.2	40349.5	40345.8	40341.9	40342.3	40345.7	40347.2	40348.7	40351.2	40352.7	40354.6	40356.0	40354.2	40355.9	40364.7	40371.0	40363.6
26	40379.9	40386.5	40389.6	40393.0	40389.5	40389.2	40382.2	40368.2	40351.2	40349.4	40348.5	40349.5	40352.1	40363.5	40364.5	40371.9	40378.3	40376.0	40363.7	40367.9	40362.2	40366.7	40384.8	40387.6	40371.5
27	40409.6	40401.7	40393.9	40387.7	40364.0	40364.3	40359.1	40353.5	40303.8	40307.4	40307.1	40311.7	40321.3	40334.5	40334.6	40334.7	40333.7	40331.8	40334.4	40338.1	40339.1	40345.0	40357.0	40366.7	40347.3
28	40375.8	40385.9	40388.6	40380.1	40367.0	40367.3	40355.2	40348.6	40338.1	40339.5	40339.8	40339.9	40340.5	40340.7	40341.3	40341.9	40344.0	40344.9	40343.5	40342.6	40343.0	40349.1	40361.1	40372.5	40353.8
29	40381.3	40386.9	40385.8	40385.8	40381.1	40381.0	40374.9	40365.3	40343.9	40341.7	40340.7	40336.1	40338.9	40339.4	40333.5	40331.6	40334.1	40336.3	40342.4	40344.9	40351.3	40360.7	40357.7	40365.0	40355.9
30	40377.3	40385.6	40380.0	40376.6	40370.9	40370.9	40359.2	40353.2	40343.5	40348.3	40349.5	40352.7	40352.9	40352.0	40350.9	40351.9	40353.3	40354.7	40354.8	40353.7	40354.4	40354.1	40362.9	40368.3	40359.6
31	40377.3	40386.4	40388.6	40391.2	40391.7	40386.2	40370.5	40352.2	40343.1	40344.5	40345.6	40347.2	40349.0	40348.3	40346.9	40345.1	40347.6	40350.1	40351.0	40351.7	40352.5	40356.7	40365.8	40370.6	40360.8
HOURLY MEANS	40376.2	40385.1	40387.3	40385.1	40379.1	40374.6	40365.6	40355.6	40343.1	40342.2	40341.7	40341.1	40341.2	40340.5	40340.2	40341.7	40343.4	40344.2	40345.7	40346.6	40347.4	40350.8	40358.7	40366.3	40356.0

Tabel 43 Nilai Variasi harian komponen X – *north* (nT) Mei 2021

Tondano Magnetic Observatory

Mei 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39356.6	39363.2	39367.2	39364.5	39359.8	39355.3	39353.7	39340.8	39326.6	39321.7	39320.4	39324.4	39324.5	39326.3	39329.1	39326.8	39326.7	39329.4	39329.5	39329.5	39328.9	39332.6	39339.3	39348.6	39338.6
2	39359.6	39371.9	39370.1	39355.8	39338.8	39322.4	39313.0	39309.3	39317.9	39313.7	39316.7	39318.6	39321.3	39321.3	39323.9	39326.7	39327.0	39330.5	39331.7	39333.8	39337.8	39344.6	39352.5	39371.6	39334.6
3	39382.7	39385.2	39388.5	39386.8	39384.7	39378.1	39358.8	39341.2	39330.3	39328.0	39326.4	39323.4	39323.2	39320.8	39322.1	39323.0	39325.9	39324.2	39323.1	39323.7	39324.3	39327.6	39333.3	39343.0	39342.9
4	39355.3	39373.7	39380.7	39383.0	39377.3	39363.6	39355.7	39345.5	39338.1	39331.3	39329.9	39330.8	39329.4	39328.7	39327.8	39327.9	39327.4	39327.7	39327.4	39328.7	39328.9	39332.3	39336.9	39345.2	39343.1
5	39357.4	39369.3	39376.0	39377.9	39372.9	39363.7	39352.1	39339.5	39330.7	39328.9	39328.9	39328.3	39327.4	39326.4	39326.5	39326.4	39326.5	39327.5	39328.6	39330.6	39334.0	39333.5	39337.0	39343.2	39341.4
6	39353.9	39365.9	39374.8	39381.8	39378.6	39364.9	39348.6	39332.6	39324.4	39322.5	39323.7	39322.7	39317.1	39317.7	39320.0	39323.8	39325.0	39326.5	39328.6	39330.3	39332.4	39340.0	39347.5	39338.6	
7	39359.2	39368.9	39370.4	39376.6	39376.2	39367.7	39358.2	39348.1	39338.2	39334.1	39332.1	39332.2	39332.3	39329.9	39329.0	39330.6	39331.6	39330.1	39330.2	39332.2	39337.0	39339.1	39348.4	39359.5	39345.5
8	39368.8	39374.7	39374.9	39370.3	39365.7	39362.6	39351.9	39339.4	39330.7	39330.1	39325.5	39321.1	39319.9	39324.3	39326.1	39328.7	39329.5	39330.9	39331.4	39330.8	39332.7	39336.6	39343.5	39349.3	39341.6
9	39356.7	39366.9	39370.5	39369.2	39365.6	39358.4	39346.7	39339.4	39335.1	39337.7	39336.1	39336.2	39336.9	39336.3	39333.0	39332.1	39332.3	39332.6	39335.6	39339.0	39340.7	39346.5	39356.4	39369.4	39346.2
10	39386.4	39398.1	39406.8	39407.5	39399.0	39379.6	39364.2	39353.0	39346.6	39344.2	39341.2	39336.0	39332.2	39324.3	39321.1	39319.6	39319.1	39318.4	39321.2	39324.7	39328.8	39328.4	39329.8	39335.8	39348.6
11	39344.3	39358.9	39366.6	39370.0	39366.4	39358.1	39351.1	39342.5	39332.3	39327.5	39331.2	39331.9	39331.2	39330.8	39331.0	39331.3	39331.2	39330.2	39331.6	39332.1	39331.2	39332.6	39334.6	39336.2	39340.2
12	39346.0	39361.7	39373.8	39376.9	39374.3	39366.7	39360.9	39357.2	39348.8	39345.0	39341.8	39336.7	39304.6	39251.3	39232.3	39256.5	39261.3	39267.2	39274.9	39281.0	39282.7	39292.3	39300.6	39307.2	39316.7
13	39310.8	39311.8	39311.6	39314.6	39313.7	39315.3	39315.6	39309.8	39301.2	39303.1	39302.5	39306.0	39308.6	39305.7	39305.1	39301.7	39301.8	39301.1	39302.7	39302.7	39306.1	39310.1	39315.2	39323.2	39308.3
14	39337.3	39355.5	39362.4	39359.3	39354.2	39345.3	39332.7	39323.1	39315.6	39313.2	39314.0	39314.2	39314.4	39316.4	39316.3	39317.1	39318.9	39320.4	39320.8	39320.2	39321.7	39320.3	39326.0	39336.3	39328.2
15	39342.0	39362.3	39377.3	39372.8	39368.0	39363.1	39352.0	39326.4	39311.9	39307.2	39310.4	39311.3	39313.7	39312.5	39310.2	39311.9	39313.6	39314.2	39315.8	39315.9	39315.8	39319.3	39325.8	39333.5	39329.5
16	39343.5	39354.8	39357.8	39358.2	39351.7	39340.6	39330.6	39330.6	39313.1	39313.2	39312.4	39305.9	39310.6	39317.1	39320.0	39319.8	39320.5	39317.5	39318.0	39317.2	39311.3	39309.4	39313.8	39323.7	39325.5
17	39339.1	39356.7	39359.7	39355.6	39346.6	39336.5	39323.1	39323.1	39312.0	39311.8	39311.1	39311.5	39312.8	39313.0	39314.8	39316.5	39318.6	39323.5	39329.1	39330.8	39327.3	39326.6	39329.7	39333.0	39327.6
18	39349.2	39364.1	39363.5	39344.5	39334.0	39334.1	39332.0	39311.8	39308.3	39309.9	39300.5	39301.0	39306.5	39307.8	39313.3	39314.4	39315.0	39315.8	39317.5	39318.6	39321.2	39324.7	39329.6	39336.1	39323.9
19	39346.9	39359.3	39376.2	39379.1	39371.8	39371.8	39365.8	39353.4	39337.6	39331.0	39330.3	39329.3	39330.3	39328.4	39329.5	39331.9	39332.1	39332.3	39328.5	39326.9	39325.1	39329.6	39342.9	39355.1	39343.5
20	39365.1	39372.9	39363.4	39357.5	39352.7	39352.7	39337.5	39320.8	39293.1	39295.6	39291.9	39274.1	39272.9	39288.0	39289.1	39289.1	39295.1	39295.4	39310.9	39304.6	39301.0	39303.0	39313.3	39320.1	39315.0
21	39331.2	39338.9	39338.3	39338.1	39332.6	39332.6	39326.1	39319.9	39310.7	39307.3	39314.0	39314.4	39312.4	39312.0	39313.0	39317.2	39316.2	39315.9	39317.1	39316.5	39317.8	39319.6	39327.6	39337.6	39322.0
22	39348.7	39358.5	39362.3	39356.9	39349.0	39349.0	39339.3	39329.0	39312.9	39311.4	39310.4	39312.8	39316.6	39316.2	39314.2	39312.3	39313.2	39315.6	39316.6	39318.1	39321.0	39323.8	39329.7	39338.2	39328.2
23	39354.9	39366.0	39369.6	39371.2	39370.6	39370.6	39365.5	39350.1	39322.4	39323.1	39324.2	39325.7	39327.3	39326.7	39325.2	39323.2	39325.5	39327.9	39328.8	39329.5	39330.1	39333.8	39342.1	39347.9	39340.9
24	39350.3	39357.8	39360.2	39362.7	39358.5	39358.5	39351.5	39343.2	39324.2	39319.8	39318.2	39318.3	39319.8	39320.6	39321.2	39322.4	39323.1	39324.2	39326.6	39327.2	39326.9	39329.5	39339.0	39353.4	39335.7
25	39370.2	39380.8	39383.5	39377.7	39365.3	39365.4	39352.7	39344.6	39331.0	39328.1	39324.4	39320.3	39320.3	39323.6	39325.1	39326.5	39328.9	39330.5	39332.3	39333.8	39331.9	39333.0	39340.7	39348.2	39342.4
26	39358.7	39367.0	39370.8	39374.1	39370.5	39370.5	39362.1	39347.6	39330.0	39328.7	39327.8	39328.3	39330.6	39342.3	39343.2	39350.5	39356.9	39355.5	39343.6	39346.2	39340.7	39344.4	39361.5	39366.3	39350.7
27	39388.9	39385.6	39378.4	39370.8	39346.5	39346.5	39339.7	39332.5	39281.4	39283.5	39284.2	39289.2	39298.5	39311.6	39313.1	39313.1	39312.1	39309.6	39311.9	39315.5	39316.4	39322.0	39333.1	39343.9	39326.2
28	39355.1	39366.8	39369.9	39362.0	39348.6	39348.6	39334.5	39326.3	39315.5	39317.6	39318.2	39318.2	39318.8	39318.9	39319.3	39320.0	39321.9	39322.8	39321.4	39320.4	39320.3	39325.8	39337.0	39349.1	39332.4
29	39360.2	39368.0	39368.4	39368.4	39363.6	39363.6	39356.8	39346.3	39324.2	39320.8	39319.7	39314.8	39316.9	39317.8	39311.7	39309.7	39312.2	39313.8	39319.7	39322.4	39327.7	39337.4	39334.8	39342.4	39335.1
30	39356.0	39366.3	39362.7	39360.4	39354.6	39354.6	39342.0	39334.0	39322.0	39327.1	39328.4	39331.3	39331.9	39330.8	39329.5	39330.1	39331.4	39332.7	39332.8	39331.7	39331.9	39331.2	39339.0	39344.9	39339.1
31	39354.9	39366.0	39369.5	39371.2	39370.6	39365.5	39350.1	39332.2	39322.4	39323.1	39324.2	39325.7	39327.3	39326.7	39325.2	39323.2	39325.5	39327.9	39328.8	39329.5	39330.1	39333.8	39342.1	39347.9	39339.3
HOURLY MEANS	39354.5	39365.1	39368.6	39366.9	39360.7	39355.7	39346.0	39335.3	39322.2	39320.6	39320.0	39319.2	39319.2	39318.5	39318.0	39319.4	39320.8	39321.6	39323.1	39324.0	39324.6	39327.6	39334.7	39343.1	39334.6

Tabel 44 Nilai Variasi harian komponen Y – east (nT) Mei 2021

Tondano Magnetic Observatory																							Mei 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	347.1	339.6	341.9	344.9	349.6	358.8	365.6	368.9	372.7	370.3	361.9	359.1	358.4	358.2	358.4	359.7	361.4	361.7	362.3	361.6	360.3	363.0	367.0	355.6	358.7
2	336.4	326.7	328.9	332.6	337.2	347.1	349.5	359.2	364.0	364.5	359.2	357.2	357.6	358.2	358.9	359.1	358.6	360.0	360.5	360.8	361.4	364.9	373.9	368.9	354.4
3	359.8	351.9	351.0	346.5	345.3	349.0	357.4	366.9	368.5	365.9	361.6	359.9	358.3	357.0	356.5	355.6	356.6	356.7	355.9	356.1	355.8	356.0	356.2	347.6	356.3
4	341.6	339.0	340.6	345.0	349.6	355.9	360.7	367.1	367.6	365.5	359.8	359.0	358.4	357.6	357.2	357.4	358.1	357.9	358.0	357.9	357.6	358.3	365.1	357.8	356.4
5	348.9	337.4	329.5	330.4	337.1	349.7	358.7	366.3	367.1	364.4	359.6	358.9	358.9	358.2	357.9	358.0	358.5	359.1	358.8	358.6	357.0	357.9	368.2	361.8	355.0
6	356.7	353.0	347.5	345.5	348.3	352.6	356.5	358.4	363.6	363.0	361.1	360.8	359.6	359.3	359.2	357.6	357.2	357.4	357.8	357.3	356.7	358.5	369.2	364.7	357.6
7	356.6	351.8	353.7	360.0	361.1	359.2	362.2	363.0	362.4	362.4	361.0	360.1	358.8	356.7	356.4	357.4	357.2	356.9	358.3	358.6	358.8	360.7	368.2	364.6	359.4
8	356.1	348.1	340.6	330.5	328.9	334.3	345.1	356.2	359.5	360.3	359.9	360.4	359.0	359.0	358.0	357.8	358.1	357.9	357.3	357.8	358.1	360.7	370.9	369.3	354.3
9	361.6	357.0	349.5	342.8	343.2	349.1	356.1	360.4	363.1	362.8	359.2	358.9	358.4	356.7	355.7	356.7	357.1	357.8	358.3	358.8	359.3	361.7	368.9	362.8	357.3
10	353.5	347.7	344.1	339.1	338.2	342.8	346.7	353.8	360.1	361.7	359.0	358.1	359.1	357.1	356.0	356.8	357.5	358.4	358.7	358.3	358.9	358.0	363.0	357.9	354.4
11	351.7	348.0	341.0	335.3	339.5	343.6	348.7	356.3	362.9	361.8	358.1	357.0	356.6	356.3	356.2	356.2	356.5	357.0	358.1	357.7	357.8	358.0	359.0	353.1	353.6
12	348.5	346.1	344.3	348.6	353.8	357.4	363.2	365.5	366.9	358.9	353.9	353.5	352.0	347.5	354.2	347.1	361.0	360.4	360.5	361.7	365.1	366.6	367.9	352.9	356.6
13	339.3	331.2	328.0	329.2	329.7	342.7	356.5	364.2	365.7	363.0	358.6	356.8	356.0	356.0	357.0	358.1	358.6	358.6	360.0	360.6	360.6	363.5	371.5	367.0	353.8
14	355.0	348.9	342.6	342.5	347.5	350.2	349.5	354.1	356.5	356.3	355.4	356.4	356.7	356.7	357.0	357.3	357.7	358.9	361.2	362.4	361.5	362.3	368.9	367.1	356.0
15	358.7	355.9	352.2	344.5	346.4	348.1	350.4	351.6	356.8	355.0	353.8	354.2	353.9	353.4	354.8	356.5	357.6	357.6	358.8	358.0	358.4	360.1	365.5	363.1	355.2
16	354.8	349.4	340.0	333.5	335.3	339.1	346.5	346.5	359.2	359.3	355.6	354.8	356.2	354.7	354.1	354.9	356.0	357.0	357.9	357.5	360.1	361.5	367.8	365.9	353.2
17	358.2	349.0	338.1	331.9	331.9	337.4	341.8	341.8	358.0	358.0	354.0	354.1	353.9	354.5	355.4	354.4	355.3	357.4	361.0	359.7	360.9	364.0	381.6	386.5	354.1
18	384.0	377.7	369.6	352.1	352.0	343.3	342.1	347.1	358.3	358.9	354.6	351.6	351.3	352.5	352.0	353.1	355.1	355.7	356.4	355.7	356.5	360.2	368.1	364.1	357.2
19	355.6	346.2	338.3	332.8	332.7	331.8	340.4	348.6	360.7	359.2	354.5	353.1	352.6	353.1	353.5	354.9	356.1	357.3	356.2	358.3	359.1	363.3	369.9	362.8	352.1
20	356.2	348.9	337.4	334.9	334.8	341.2	347.6	349.8	354.0	352.7	347.4	348.3	350.9	351.0	350.0	350.0	354.5	357.9	362.9	357.1	359.3	364.1	366.2	357.7	351.4
21	350.4	346.2	347.3	344.5	344.5	343.3	346.0	349.5	356.2	353.9	352.1	350.8	350.4	349.0	350.5	352.0	351.9	352.6	353.1	355.3	356.0	358.8	365.4	362.1	351.7
22	350.9	340.4	334.4	331.9	331.8	336.2	345.4	351.5	362.7	359.7	354.6	354.2	353.8	352.8	352.5	352.5	353.7	354.4	355.8	357.9	358.6	360.1	366.8	360.6	351.4
23	355.7	346.1	332.5	325.5	325.5	328.4	339.6	348.7	354.2	355.5	352.6	351.3	351.9	351.9	352.2	353.0	353.1	353.3	354.0	354.7	355.3	358.8	367.0	365.9	349.4
24	357.3	348.1	344.9	341.7	341.7	343.8	351.9	356.9	354.5	353.7	353.7	355.3	353.0	352.7	352.5	352.9	353.2	353.6	354.7	356.1	357.3	361.5	369.9	368.6	353.7
25	362.2	353.8	346.3	338.8	338.7	332.9	336.0	343.4	354.8	355.5	354.5	353.8	353.2	352.7	353.5	354.4	355.2	355.6	356.7	356.8	357.0	359.7	366.7	360.3	352.2
26	350.1	341.2	335.9	334.1	334.1	338.0	347.6	351.7	363.6	360.9	354.5	354.4	353.7	351.0	352.6	355.1	357.7	358.3	354.4	359.3	358.5	361.9	371.7	365.2	352.7
27	361.7	345.8	338.8	338.5	338.3	336.3	341.4	348.7	366.2	368.2	358.7	354.1	353.9	355.1	349.7	348.1	347.7	350.3	351.9	353.6	355.0	359.6	369.8	367.7	352.5
28	363.8	361.1	356.0	347.4	347.3	342.4	343.7	350.0	359.2	359.7	354.3	353.4	352.7	351.1	351.3	350.4	350.6	350.7	350.7	351.5	353.8	358.9	370.6	372.0	354.3
29	363.7	351.1	341.8	337.2	337.2	334.0	344.3	350.3	359.9	362.4	355.3	354.7	353.9	351.8	351.6	349.6	347.5	349.7	351.3	351.7	357.1	362.6	367.7	368.6	352.3
30	365.1	353.8	343.9	335.4	335.4	329.6	329.4	338.7	359.7	357.8	352.3	351.0	350.5	350.8	351.2	352.2	353.0	354.3	355.4	354.6	356.8	360.7	368.2	364.4	351.0
31	355.7	346.1	332.7	325.5	328.4	339.6	348.7	351.4	354.2	355.5	352.6	351.3	351.9	351.9	352.2	353.0	353.1	353.3	354.0	354.7	355.3	358.8	367.0	365.9	350.5
HOURLY MEANS	355.4	348.0	342.4	338.8	340.2	343.2	349.0	354.4	361.1	360.2	356.2	355.4	355.0	354.3	354.4	354.6	355.7	356.4	357.1	357.4	358.2	360.8	368.0	363.6	354.2

Tabel 45 Nilai Variasi harian komponen D – *declination* (menit) Mei 2021

Tondano Magnetic Observatory																							Mei 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	30.33	29.67	29.87	30.13	30.55	31.35	31.95	32.25	32.59	32.39	31.65	31.40	31.34	31.33	31.34	31.46	31.60	31.63	31.68	31.62	31.51	31.74	32.08	31.08	31.36
2	29.39	28.54	28.73	29.07	29.48	30.36	30.57	31.43	31.84	31.89	31.42	31.25	31.27	31.33	31.39	31.41	31.36	31.48	31.52	31.55	31.59	31.89	32.67	32.23	30.98
3	31.42	30.73	30.65	30.26	30.15	30.48	31.23	32.08	32.22	32.00	31.62	31.48	31.34	31.23	31.18	31.10	31.18	31.19	31.13	31.14	31.12	31.13	31.14	30.38	31.15
4	29.85	29.61	29.74	30.13	30.53	31.10	31.52	32.08	32.13	31.95	31.46	31.39	31.34	31.27	31.23	31.26	31.32	31.30	31.31	31.30	31.27	31.33	31.92	31.27	31.15
5	30.49	29.48	28.78	28.85	29.45	30.55	31.35	32.02	32.10	31.87	31.44	31.39	31.39	31.32	31.29	31.31	31.36	31.41	31.38	31.35	31.22	31.30	32.19	31.63	31.04
6	31.17	30.84	30.36	30.17	30.42	30.80	31.16	31.34	31.80	31.75	31.58	31.55	31.45	31.43	31.42	31.28	31.24	31.25	31.29	31.24	31.19	31.35	32.28	31.88	31.26
7	31.16	30.73	30.90	31.44	31.54	31.38	31.65	31.72	31.68	31.68	31.57	31.48	31.37	31.19	31.17	31.25	31.24	31.21	31.33	31.35	31.37	31.53	32.18	31.86	31.42
8	31.10	30.40	29.75	28.87	28.73	29.21	30.16	31.14	31.43	31.50	31.47	31.52	31.40	31.40	31.30	31.29	31.31	31.30	31.25	31.28	31.31	31.54	32.42	32.28	30.97
9	31.60	31.19	30.53	29.94	29.98	30.50	31.13	31.51	31.75	31.72	31.41	31.38	31.33	31.18	31.10	31.19	31.22	31.29	31.32	31.37	31.41	31.62	32.23	31.69	31.23
10	30.87	30.35	30.03	29.59	29.52	29.93	30.29	30.92	31.47	31.62	31.39	31.31	31.40	31.23	31.14	31.21	31.27	31.35	31.37	31.34	31.38	31.30	31.74	31.29	30.97
11	30.74	30.41	29.79	29.29	29.66	30.02	30.47	31.14	31.73	31.64	31.31	31.21	31.18	31.15	31.14	31.15	31.18	31.22	31.31	31.27	31.28	31.30	31.39	30.87	30.91
12	30.46	30.24	30.08	30.45	30.90	31.22	31.73	31.94	32.07	31.37	30.94	30.91	30.80	30.44	31.04	30.41	31.62	31.57	31.56	31.66	31.96	32.09	32.20	30.88	31.19
13	29.68	28.98	28.70	28.80	28.84	29.98	31.19	31.86	32.00	31.76	31.37	31.22	31.14	31.15	31.23	31.33	31.38	31.38	31.50	31.56	31.56	31.80	32.49	32.09	30.96
14	31.03	30.49	29.94	29.93	30.37	30.61	30.56	30.97	31.19	31.17	31.09	31.18	31.21	31.20	31.23	31.25	31.28	31.39	31.59	31.69	31.62	31.69	32.26	32.10	31.13
15	31.36	31.10	30.76	30.09	30.26	30.41	30.62	30.75	31.21	31.06	30.95	30.98	30.96	30.92	31.04	31.18	31.28	31.28	31.39	31.32	31.35	31.49	31.97	31.75	31.06
16	31.02	30.53	29.71	29.14	29.31	29.65	30.30	30.30	31.42	31.43	31.11	31.05	31.17	31.03	30.98	31.04	31.14	31.23	31.30	31.27	31.50	31.63	32.18	32.00	30.89
17	31.31	30.50	29.54	29.00	29.01	29.49	29.89	29.89	31.32	31.32	30.97	30.98	30.96	31.01	31.09	31.00	31.08	31.25	31.57	31.45	31.56	31.83	33.37	33.79	30.97
18	33.56	33.00	32.30	30.77	30.77	30.02	29.91	30.37	31.35	31.40	31.03	30.77	30.74	30.84	30.79	30.89	31.06	31.12	31.18	31.11	31.18	31.50	32.19	31.83	31.24
19	31.08	30.25	29.54	29.07	29.07	28.98	29.74	30.46	31.54	31.41	30.99	30.88	30.83	30.88	30.91	31.03	31.14	31.24	31.15	31.34	31.41	31.77	32.34	31.71	30.78
20	31.12	30.47	29.48	29.26	29.26	29.82	30.39	30.59	30.98	30.87	30.41	30.50	30.72	30.72	30.64	30.64	31.03	31.32	31.75	31.24	31.44	31.86	32.03	31.29	30.74
21	30.64	30.27	30.36	30.12	30.12	30.02	30.25	30.57	31.17	30.96	30.80	30.68	30.66	30.53	30.66	30.79	30.79	30.85	30.89	31.08	31.14	31.38	31.96	31.66	30.76
22	30.67	29.74	29.22	29.00	29.00	29.38	30.19	30.73	31.73	31.46	31.02	30.98	30.95	30.86	30.83	30.84	30.94	31.00	31.13	31.31	31.37	31.49	32.07	31.53	30.73
23	31.09	30.23	29.05	28.43	28.43	28.69	29.67	30.48	30.98	31.09	30.84	30.72	30.77	30.77	30.80	30.87	30.88	30.90	30.95	31.02	31.07	31.37	32.08	31.98	30.55
24	31.23	30.42	30.13	29.85	29.85	30.04	30.75	31.20	31.00	30.94	30.93	31.08	30.88	30.85	30.83	30.87	30.89	30.92	31.02	31.14	31.25	31.61	32.34	32.21	30.93
25	31.64	30.89	30.24	29.59	29.59	29.09	29.36	30.02	31.03	31.09	31.01	30.94	30.89	30.84	30.91	31.00	31.06	31.10	31.18	31.19	31.21	31.45	32.05	31.49	30.79
26	30.59	29.81	29.35	29.19	29.19	29.53	30.37	30.74	31.80	31.56	31.00	31.00	30.93	30.68	30.82	31.03	31.26	31.31	30.98	31.40	31.34	31.64	32.48	31.91	30.83
27	31.58	30.20	29.59	29.57	29.57	29.40	29.84	30.49	32.06	32.23	31.41	31.00	30.97	31.07	30.59	30.45	30.42	30.65	30.78	30.93	31.05	31.46	32.33	32.14	30.82
28	31.80	31.54	31.10	30.36	30.36	29.92	30.05	30.61	31.42	31.46	30.99	30.92	30.85	30.71	30.72	30.65	30.67	30.68	30.67	30.74	30.95	31.39	32.40	32.51	30.98
29	31.78	30.67	29.86	29.46	29.46	29.18	30.09	30.62	31.47	31.69	31.07	31.03	30.96	30.77	30.76	30.59	30.40	30.59	30.72	30.76	31.23	31.70	32.15	32.23	30.80
30	31.90	30.90	30.04	29.31	29.31	28.81	28.79	29.61	31.46	31.29	30.80	30.69	30.65	30.67	30.71	30.80	30.87	30.98	31.07	31.01	31.20	31.54	32.19	31.85	30.69
31	31.09	30.23	29.06	28.43	28.69	29.67	30.48	30.73	30.98	31.09	30.84	30.72	30.77	30.77	30.80	30.87	30.88	30.90	30.95	31.02	31.07	31.37	32.08	31.98	30.64
HOURL MEANS	31.06	30.40	29.91	29.60	29.72	29.99	30.51	30.99	31.58	31.51	31.16	31.08	31.05	30.99	31.00	31.01	31.11	31.17	31.23	31.26	31.33	31.55	32.17	31.79	30.96

Tabel 46 Nilai variasi harian komponen I – *inclination* (derajat) Mei 2021

Tondano Magnetic Observatory

Mei 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-12.91	-12.90	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.92	-12.91
2	-12.91	-12.90	-12.90	-12.90	-12.91	-12.92	-12.92	-12.93	-12.93	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.92
3	-12.92	-12.91	-12.91	-12.90	-12.90	-12.90	-12.90	-12.91	-12.92	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.92	-12.92
4	-12.91	-12.89	-12.88	-12.88	-12.88	-12.89	-12.89	-12.90	-12.90	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.91
5	-12.92	-12.90	-12.88	-12.87	-12.86	-12.87	-12.88	-12.89	-12.89	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.91
6	-12.92	-12.90	-12.89	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.91
7	-12.91	-12.90	-12.90	-12.89	-12.89	-12.89	-12.90	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91	-12.91
8	-12.90	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.92	-12.91
9	-12.91	-12.90	-12.89	-12.89	-12.90	-12.90	-12.91	-12.91	-12.91	-12.92	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91	-12.91
10	-12.89	-12.88	-12.87	-12.87	-12.88	-12.89	-12.90	-12.91	-12.92	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91
11	-12.91	-12.91	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91
12	-12.91	-12.90	-12.88	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.90	-12.90	-12.91	-12.91	-12.92	-12.92	-12.95	-12.95	-12.96	-12.95	-12.94	-12.94	-12.94	-12.94	-12.94	-12.91
13	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.92
14	-12.93	-12.92	-12.91	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.92	-12.92
15	-12.91	-12.91	-12.89	-12.88	-12.89	-12.90	-12.90	-12.90	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92
16	-12.92	-12.92	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92
17	-12.92	-12.90	-12.89	-12.89	-12.89	-12.90	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.92	-12.92	-12.92	-12.93	-12.93	-12.92
18	-12.93	-12.92	-12.90	-12.88	-12.88	-12.89	-12.90	-12.91	-12.91	-12.93	-12.92	-12.93	-12.93	-12.93	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.92
19	-12.92	-12.90	-12.90	-12.88	-12.89	-12.88	-12.89	-12.89	-12.90	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.92	-12.91
20	-12.91	-12.89	-12.88	-12.88	-12.88	-12.89	-12.90	-12.91	-12.92	-12.92	-12.92	-12.93	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.93	-12.94	-12.93	-12.92	-12.92
21	-12.91	-12.90	-12.91	-12.90	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.93	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.92
22	-12.91	-12.91	-12.89	-12.89	-12.89	-12.89	-12.90	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.92	-12.92
23	-12.92	-12.90	-12.89	-12.90	-12.90	-12.91	-12.91	-12.90	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.92	-12.91
24	-12.92	-12.91	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.92	-12.92
25	-12.91	-12.90	-12.88	-12.88	-12.88	-12.89	-12.90	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.92	-12.91
26	-12.91	-12.90	-12.89	-12.89	-12.89	-12.89	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.90	-12.91	-12.91	-12.92	-12.92	-12.91	-12.91
27	-12.90	-12.87	-12.87	-12.88	-12.89	-12.89	-12.90	-12.91	-12.93	-12.94	-12.93	-12.93	-12.93	-12.93	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.92	-12.91
28	-12.91	-12.89	-12.89	-12.89	-12.89	-12.90	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.92	-12.91
29	-12.91	-12.89	-12.88	-12.88	-12.89	-12.89	-12.89	-12.90	-12.90	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.92	-12.92	-12.92	-12.91
30	-12.91	-12.90	-12.88	-12.88	-12.88	-12.88	-12.89	-12.90	-12.92	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.92	-12.91
31	-12.92	-12.90	-12.89	-12.90	-12.91	-12.91	-12.90	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.92	-12.91
HOURLY MEANS	-12.91	-12.90	-12.89	-12.89	-12.89	-12.90	-12.90	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.92	-12.91

2. Gangguan badai magnet

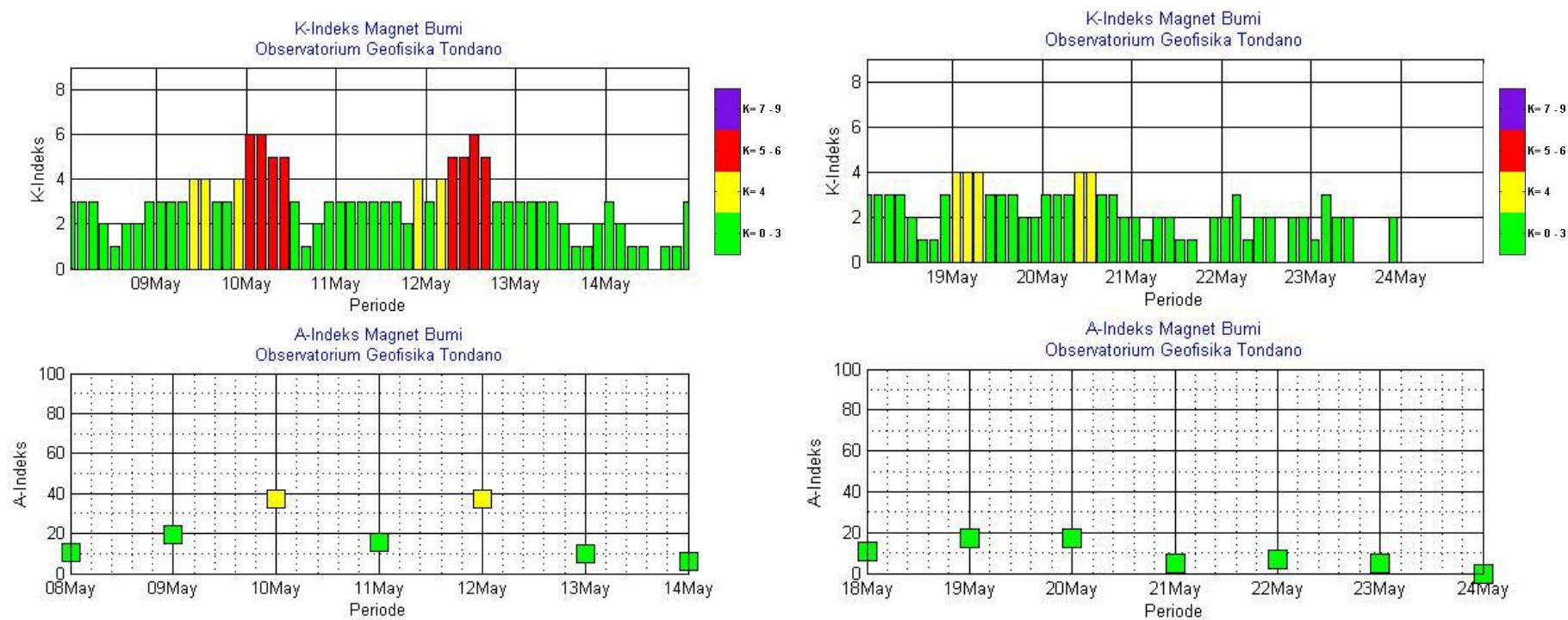
Tabel 47 Monitoring waktu gangguan pada pengamatan magnet bumi Mei 2021

Kejadian rekaman magnet bumi							Durasi gangguan	Keterangan
No	Hari			Waktu				
	Tanggal	Bulan	Tahun	Jam	Menit	Detik		
1	1	5	2021					
2	2	5	2021					
3	3	5	2021					
4	4	5	2021					
5	5	5	2021					
6	6	5	2021					
7	7	5	2021					
8	8	5	2021					
9	9	5	2021					
10	10	5	2021	2	0	0	4j0m	Badai Kecil
11	11	5	2021					
12	12	5	2021	6	38	0	9j36m	Badai Kecil
13	13	5	2021					
14	14	5	2021					
15	15	5	2021					
16	16	5	2021					
17	17	5	2021					
18	18	5	2021					
19	19	5	2021					
20	20	5	2021					
21	21	5	2021					
22	22	5	2021					
23	23	5	2021					
24	24	5	2021					
25	25	5	2021					
26	26	5	2021					
27	27	5	2021					
28	28	5	2021					
29	29	5	2021					
30	30	5	2021					
31	31	5	2021					

Tabel 48 Hasil analisa K-indeks dan A-indeks Mei 2021

Tanggal	K-1	K-2	K-3	K-4	K-5	K-6	K-7	K-8	A Indeks	Keterangan
1	3	2	3	2	3	2	1	2	9.500	Tenang
2	4	4	4	2	1	2	3	4	17.500	Tenang
3	5	4	4	2	1	2	1	2	16.125	Tenang
4	4	4	3	3	2	1	1	3	14.000	Tenang
5	3	4	3	2	2	1	2	3	12.000	Tenang
6	3	4	2	2	2	1	1	2	9.500	Tenang
7	3	4	4	4	3	3	3	3	19.500	Tenang
8	3	3	3	2	1	2	2	3	10.500	Tenang
9	3	3	3	4	4	3	3	4	19.500	Tenang
10	6	6	5	5	3	1	2	3	37.000	Badai Kecil
11	3	3	3	3	3	3	2	4	15.500	Tenang
12	3	4	5	5	6	5	3	3	37.000	Badai Kecil
13	3	3	3	3	2	1	1	2	10.000	Tenang
14	3	2	1	1	0	1	1	3	6.125	Tenang
15	4	3	4	2	2	0	0	3	12.250	Tenang
16	2	2	1	2	2	2	2	3	7.500	Tenang
17	3	3	3	0	1	2	2	3	9.625	Tenang
18	3	3	3	3	2	1	1	3	11.000	Tenang
19	4	4	4	3	3	3	2	2	17.500	Tenang
20	3	3	3	4	4	3	3	2	17.000	Tenang
21	2	1	2	2	1	1	0	2	4.625	Tenang
22	2	3	1	2	2	0	2	2	6.625	Tenang
23	1	3	2	2	0	0	0	2	4.875	Tenang
24	0	0	0	0	0	0	0	0	0.000	Tenang
25	4	3	2	2	1	2	2	2	10.000	Tenang
26	3	3	2	3	4	5	5	4	25.250	Tenang
27	5	4	5	3	3	2	2	2	21.750	Tenang
28	3	3	3	1	1	0	1	1	7.125	Tenang
29	3	2	2	2	3	2	3	3	11.000	Tenang
30	2	2	3	3	3	3	2	3	12.000	Tenang
31	3	3	3	2	2	1	1	3	10.000	Tenang

Gambar 26 Plot hasil analisa K-indeks dan A-indeks saat terjadi gangguan magnet bumi di bulan Mei 2021



F. Juni 2021

1. Nilai variasi harian bulan Juni 2021

Tabel 49 Nilai variasi harian komponen H – *horizontal* (nT) Juni 2021

Tondano Magnetic Observatory																							Juni 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39353.6	39365.9	39372.6	39369.8	39359.9	39348.4	39340.2	39334.8	39331.1	39330.2	39330.2	39330.4	39330.6	39330.7	39332.0	39332.1	39333.1	39334.3	39335.3	39335.2	39335.2	39336.3	39340.9	39349.1	39341.3
2	39363.8	39377.3	39379.3	39377.0	39368.6	39354.5	39346.2	39340.7	39335.5	39334.5	39334.5	39333.9	39334.3	39338.3	39342.2	39339.1	39338.3	39338.2	39342.3	39341.8	39340.2	39342.2	39348.9	39354.4	39347.8
3	39371.2	39389.3	39390.3	39385.4	39378.7	39377.5	39367.4	39343.7	39320.1	39313.0	39316.9	39317.4	39316.3	39314.2	39316.2	39321.4	39324.6	39327.6	39331.5	39334.6	39334.8	39336.7	39344.7	39353.5	39342.8
4	39364.9	39371.4	39372.4	39370.2	39361.0	39352.1	39347.4	39341.2	39333.9	39329.7	39328.5	39325.6	39326.5	39330.7	39331.5	39329.6	39331.2	39331.6	39331.3	39328.7	39330.0	39332.5	39336.6	39345.0	39341.0
5	39354.8	39362.6	39365.1	39363.9	39356.1	39349.8	39347.3	39341.4	39334.4	39332.4	39332.0	39330.4	39329.9	39332.8	39336.5	39337.8	39337.5	39338.3	39336.7	39336.3	39338.4	39341.8	39346.7	39348.4	39343.0
6	39351.0	39354.6	39351.8	39344.5	39339.2	39334.7	39329.5	39327.1	39324.2	39328.1	39330.8	39332.3	39333.1	39333.2	39333.8	39334.0	39335.0	39336.1	39337.3	39341.1	39340.1	39346.5	39359.9	39364.1	39339.3
7	39375.0	39388.6	39390.9	39387.3	39370.4	39359.0	39361.3	39362.6	39352.2	39346.9	39349.8	39341.4	39330.8	39328.4	39336.9	39336.0	39335.8	39335.4	39335.8	39336.3	39326.3	39325.6	39329.5	39339.8	39349.3
8	39344.4	39354.2	39354.2	39356.6	39352.3	39347.6	39337.2	39324.6	39315.6	39314.5	39316.8	39321.6	39322.0	39321.3	39320.3	39322.7	39325.7	39326.7	39326.6	39327.9	39329.6	39331.6	39338.7	39344.5	39332.4
9	39353.9	39363.2	39367.6	39367.3	39361.3	39354.3	39350.6	39338.4	39331.2	39328.1	39327.4	39326.5	39326.0	39326.2	39326.7	39327.9	39329.4	39331.9	39334.4	39334.2	39334.3	39339.5	39348.6	39361.0	39341.2
10	39353.9	39363.2	39367.6	39367.3	39361.3	39354.3	39350.6	39338.4	39331.2	39328.1	39327.4	39326.5	39326.0	39326.2	39326.7	39327.9	39329.4	39331.9	39334.4	39334.2	39334.3	39339.5	39348.6	39361.0	39341.2
11	39358.6	39375.7	39383.8	39375.6	39361.2	39349.4	39329.0	39301.1	39286.0	39277.8	39272.1	39266.8	39267.4	39265.5	39277.8	39287.1	39296.5	39302.3	39306.9	39312.1	39316.1	39323.4	39336.5	39347.8	39315.7
12	39357.1	39358.5	39349.7	39340.1	39331.6	39319.8	39322.5	39319.3	39320.5	39321.3	39321.5	39324.1	39320.6	39320.7	39321.4	39324.6	39323.5	39323.9	39325.1	39327.7	39329.9	39332.3	39332.9	39346.0	39329.8
13	39356.3	39353.8	39356.7	39352.4	39348.1	39343.2	39336.2	39329.1	39324.2	39320.6	39321.8	39322.8	39324.9	39325.9	39326.9	39328.0	39328.5	39327.5	39328.3	39328.5	39329.2	39332.5	39339.5	39347.8	39334.7
14	39359.9	39370.3	39371.7	39369.4	39363.4	39358.1	39346.9	39334.7	39326.8	39324.1	39323.6	39325.8	39329.1	39328.1	39328.1	39328.5	39329.1	39330.2	39330.5	39332.5	39334.1	39336.3	39342.6	39353.5	39340.7
15	39369.6	39378.6	39377.1	39373.4	39367.0	39354.0	39343.3	39339.6	39345.2	39345.7	39349.3	39346.1	39342.8	39322.8	39322.2	39328.4	39331.8	39323.6	39323.9	39323.4	39323.1	39334.5	39341.0	39345.4	39343.8
16	39354.1	39348.6	39345.2	39347.1	39341.8	39333.7	39321.8	39321.8	39303.6	39308.3	39312.7	39309.9	39315.7	39315.9	39314.5	39318.3	39324.3	39317.1	39315.0	39316.2	39318.4	39320.1	39323.0	39331.2	39324.1
17	39344.9	39355.7	39362.2	39359.8	39351.7	39343.4	39331.5	39331.5	39320.5	39318.1	39317.8	39316.1	39318.7	39321.6	39321.4	39321.4	39322.6	39324.4	39324.2	39324.6	39326.1	39327.3	39333.5	39339.4	39331.6
18	39348.3	39356.2	39354.8	39352.3	39344.8	39344.8	39339.3	39330.3	39322.7	39314.0	39304.8	39305.0	39312.6	39310.3	39311.5	39314.2	39316.6	39319.0	39320.8	39320.5	39321.1	39323.3	39332.5	39344.0	39327.7
19	39354.1	39364.2	39369.2	39369.3	39361.2	39361.2	39350.0	39339.6	39321.9	39319.0	39319.7	39322.1	39322.5	39324.0	39327.6	39326.0	39325.7	39325.6	39325.5	39328.3	39328.5	39329.8	39335.3	39344.7	39337.3
20	39357.0	39362.5	39369.7	39369.7	39361.7	39361.7	39353.8	39345.4	39328.1	39326.0	39325.2	39325.3	39326.9	39329.2	39330.9	39331.4	39333.3	39333.8	39334.3	39334.3	39334.0	39334.6	39340.3	39347.3	39341.5
21	39356.0	39366.1	39372.7	39372.2	39365.0	39365.0	39361.3	39358.9	39339.2	39334.2	39334.8	39335.0	39334.0	39332.2	39335.4	39336.1	39336.0	39334.8	39334.3	39333.7	39334.6	39337.2	39345.2	39355.8	39346.2
22	39367.0	39370.7	39381.5	39383.7	39373.7	39373.7	39352.2	39330.4	39316.1	39312.4	39314.3	39317.9	39317.0	39323.1	39327.6	39328.3	39328.1	39327.7	39328.0	39328.5	39329.7	39332.5	39337.4	39345.7	39339.5
23	39358.0	39366.2	39373.8	39370.1	39366.0	39366.0	39357.3	39348.2	39330.6	39333.9	39334.3	39332.0	39333.0	39332.8	39331.5	39330.6	39331.5	39331.4	39330.8	39330.3	39332.4	39335.2	39341.5	39350.5	39343.7
24	39361.1	39371.0	39374.1	39373.7	39364.5	39364.5	39353.8	39343.8	39321.3	39325.3	39329.2	39330.6	39330.4	39329.9	39330.8	39333.6	39336.0	39337.0	39337.2	39337.9	39339.8	39340.6	39347.3	39357.0	39344.6
25	39367.2	39364.9	39355.4	39353.6	39353.6	39353.6	39353.6	39347.7	39325.5	39318.9	39318.6	39317.9	39319.0	39321.7	39322.2	39323.8	39324.2	39324.4	39324.2	39324.1	39325.4	39329.9	39339.4	39349.7	39335.8
26	39358.8	39366.7	39372.4	39373.2	39366.6	39366.6	39359.4	39349.0	39327.4	39323.1	39322.3	39320.8	39320.6	39321.5	39323.9	39324.3	39326.0	39328.3	39328.5	39329.4	39329.9	39332.5	39343.2	39358.1	39340.5
27	39372.8	39382.4	39386.7	39383.6	39379.9	39379.9	39370.2	39357.9	39329.1	39326.9	39328.3	39328.3	39326.9	39327.5	39326.3	39326.5	39328.0	39330.7	39331.0	39333.2	39331.6	39334.6	39345.1	39361.9	39347.1
28	39376.7	39388.0	39396.8	39391.4	39381.4	39381.4	39369.2	39353.5	39334.4	39334.1	39332.9	39332.1	39333.8	39332.2	39331.0	39331.3	39331.3	39330.9	39330.8	39330.7	39330.8	39335.2	39341.2	39354.7	39349.4
29	39366.4	39376.1	39380.6	39378.1	39369.9	39369.9	39362.5	39353.2	39335.4	39334.4	39336.4	39337.4	39337.6	39338.0	39335.3	39334.7	39333.5	39329.5	39328.8	39329.0	39334.4	39337.0	39345.8	39355.8	39347.5
30	39368.1	39379.3	39389.7	39402.2	39402.9	39402.9	39384.9	39361.2	39319.1	39296.7	39295.4	39304.8	39307.0	39309.5	39312.4	39310.5	39315.9	39314.7	39321.9	39324.9	39317.5	39313.3	39318.6	39326.9	39337.5
HOURLY MEANS	39359.9	39368.2	39371.2	39369.4	39362.2	39357.5	39349.2	39339.6	39326.2	39323.3	39323.6	39323.6	39323.9	39323.8	39325.4	39326.5	39328.1	39328.3	39329.2	39330.0	39330.3	39333.1	39340.2	39349.5	39339.3

Tabel 50 Nilai variasi harian komponen Z – vertical (nT) Juni 2021

Tondano Magnetic Observatory																							Jun 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-9017.9	-9017.9	-9015.8	-9014.2	-9010.6	-9014.6	-9016.0	-9015.5	-9015.5	-9011.4	-9013.1	-9015.0	-9015.3	-9015.7	-9016.4	-9017.0	-9017.4	-9017.8	-9018.0	-9018.3	-9019.6	-9020.7	-9021.2	-9015.4	-9016.3
2	-9012.6	-9011.1	-9000.5	-8998.7	-8999.6	-9004.6	-9009.1	-9010.0	-9010.0	-9007.4	-9010.5	-9013.1	-9013.8	-9015.2	-9013.1	-9013.9	-9015.3	-9016.8	-9018.4	-9017.8	-9017.6	-9019.4	-9023.7	-9024.7	-9012.4
3	-9027.8	-9024.8	-9013.8	-9007.8	-9000.2	-9001.5	-9001.2	-8999.3	-8999.3	-9007.8	-9012.3	-9013.2	-9014.7	-9013.4	-9014.2	-9017.8	-9016.0	-9016.4	-9017.5	-9018.3	-9017.6	-9018.7	-9019.5	-9017.2	-9012.9
4	-9014.3	-9009.7	-9006.6	-9005.7	-9008.6	-9012.4	-9014.9	-9011.1	-9011.1	-9008.4	-9009.9	-9013.6	-9015.1	-9015.4	-9013.1	-9014.1	-9015.2	-9015.3	-9014.9	-9015.9	-9017.8	-9017.9	-9019.7	-9016.0	-9013.2
5	-9008.6	-8999.8	-8996.9	-8993.3	-9000.8	-9012.2	-9015.9	-9016.8	-9016.8	-9010.6	-9012.4	-9013.3	-9014.1	-9014.8	-9014.4	-9013.3	-9014.1	-9014.9	-9013.8	-9016.4	-9016.9	-9017.6	-9017.7	-9012.5	-9011.6
6	-9006.8	-9006.3	-9006.4	-9006.3	-9007.6	-9015.7	-9014.9	-9013.3	-9013.3	-9013.4	-9012.3	-9013.3	-9013.2	-9013.3	-9014.1	-9014.7	-9015.4	-9015.8	-9015.8	-9017.2	-9016.1	-9019.4	-9024.0	-9017.7	-9013.6
7	-9008.8	-9005.9	-9003.5	-9005.0	-9009.6	-9018.2	-9027.1	-9024.3	-9024.3	-9011.3	-9012.3	-9012.1	-9011.8	-9014.6	-9016.9	-9015.3	-9016.2	-9016.1	-9017.6	-9016.0	-9019.9	-9023.1	-9026.5	-9019.2	-9015.6
8	-9010.9	-9001.1	-8998.1	-8998.5	-9002.1	-9001.6	-9003.3	-9007.2	-9007.2	-9009.9	-9013.0	-9015.7	-9015.0	-9014.1	-9014.2	-9015.0	-9015.7	-9016.1	-9015.9	-9017.0	-9017.6	-9018.3	-9020.9	-9018.7	-9011.1
9	-9013.2	-9003.7	-8999.3	-8997.5	-8998.6	-9007.7	-9013.6	-9015.8	-9015.8	-9010.6	-9011.3	-9013.2	-9014.0	-9014.1	-9015.1	-9015.6	-9016.4	-9016.8	-9017.3	-9016.4	-9017.9	-9021.0	-9026.0	-9025.2	-9013.2
10	-9013.2	-9003.7	-8999.3	-8997.5	-8998.6	-9007.7	-9013.6	-9015.8	-9015.8	-9010.6	-9011.3	-9013.2	-9014.0	-9014.1	-9015.1	-9015.6	-9016.4	-9016.8	-9017.3	-9016.4	-9017.9	-9021.0	-9026.0	-9025.2	-9013.2
11	-9009.9	-9007.2	-8994.2	-8983.9	-8990.5	-8998.5	-9000.5	-9001.5	-9001.5	-9010.5	-9013.1	-9014.2	-9014.3	-9014.6	-9018.1	-9017.5	-9019.1	-9017.9	-9018.3	-9020.3	-9019.7	-9021.2	-9027.7	-9026.8	-9010.9
12	-9021.9	-9013.9	-9012.7	-9013.9	-9012.6	-9013.6	-9017.6	-9015.1	-9015.1	-9010.9	-9009.7	-9012.1	-9011.5	-9014.3	-9014.0	-9015.8	-9015.1	-9016.7	-9017.0	-9016.8	-9016.8	-9019.5	-9021.8	-9022.8	-9015.5
13	-9014.2	-9012.4	-9003.4	-8998.8	-8997.4	-9002.3	-9005.2	-9008.7	-9008.7	-9009.5	-9010.0	-9011.4	-9012.3	-9013.1	-9014.2	-9014.4	-9015.5	-9017.1	-9017.4	-9017.4	-9018.7	-9020.8	-9024.0	-9021.4	-9012.0
14	-9017.4	-9008.3	-8996.6	-8996.4	-8998.2	-9005.2	-9005.5	-9005.3	-9005.3	-9011.9	-9012.4	-9012.7	-9014.0	-9013.6	-9015.1	-9015.8	-9016.2	-9016.5	-9016.9	-9017.7	-9018.3	-9020.7	-9024.9	-9021.9	-9012.0
15	-9018.1	-9013.1	-9005.3	-8999.5	-8993.9	-8995.1	-9001.5	-9005.3	-9009.5	-9006.1	-9005.7	-9006.1	-9006.2	-9007.6	-9014.4	-9016.5	-9015.6	-9016.9	-9019.4	-9017.8	-9021.4	-9023.7	-9026.4	-9024.1	-9011.2
16	-9024.8	-9022.7	-9020.5	-9014.5	-9007.4	-9010.0	-9006.4	-9006.4	-9006.4	-9014.7	-9015.4	-9014.7	-9015.4	-9013.5	-9014.4	-9016.2	-9017.8	-9013.8	-9016.5	-9017.8	-9017.7	-9018.3	-9021.9	-9026.4	-9015.6
17	-9025.5	-9016.9	-9008.8	-9002.8	-8999.3	-8997.2	-9000.4	-9000.4	-9000.4	-9009.0	-9010.9	-9010.9	-9012.4	-9013.6	-9013.8	-9014.2	-9015.7	-9016.5	-9017.2	-9018.3	-9017.9	-9018.7	-9023.7	-9021.8	-9011.9
18	-9018.3	-9011.4	-9001.5	-8998.3	-8998.3	-8999.9	-9002.6	-9003.7	-9003.7	-9006.4	-9006.9	-9012.0	-9012.8	-9011.9	-9013.6	-9014.7	-9014.3	-9016.0	-9016.6	-9016.9	-9017.2	-9018.5	-9021.0	-9024.2	-9010.9
19	-9021.0	-9007.8	-8998.8	-8999.4	-8999.4	-9000.5	-9002.2	-9003.5	-9003.5	-9008.1	-9010.8	-9013.2	-9013.5	-9014.3	-9014.8	-9014.3	-9015.3	-9015.3	-9015.8	-9016.8	-9017.6	-9018.6	-9022.8	-9020.5	-9011.2
20	-9011.1	-9004.1	-9002.7	-8998.8	-8998.8	-9002.4	-9006.6	-9011.6	-9011.6	-9013.0	-9012.8	-9013.8	-9014.4	-9014.6	-9015.1	-9015.6	-9016.1	-9015.8	-9016.3	-9016.8	-9018.0	-9019.2	-9023.5	-9021.8	-9012.3
21	-9019.4	-9011.9	-9006.2	-9001.9	-9001.9	-8999.4	-9005.4	-9012.3	-9012.3	-9006.4	-9009.8	-9011.9	-9011.9	-9011.9	-9014.1	-9014.1	-9014.4	-9014.7	-9015.5	-9017.5	-9018.1	-9017.9	-9020.0	-9019.3	-9012.0
22	-9016.5	-9014.2	-9010.8	-9007.3	-9007.3	-8999.3	-9002.7	-9012.5	-9012.5	-9007.8	-9012.4	-9012.3	-9011.1	-9012.6	-9012.5	-9012.9	-9014.3	-9015.6	-9015.2	-9016.1	-9017.7	-9019.6	-9023.4	-9022.5	-9012.9
23	-9017.1	-9016.0	-9011.7	-9009.5	-9009.5	-9007.3	-9006.8	-9005.0	-9005.0	-9006.8	-9008.2	-9010.6	-9012.0	-9013.0	-9013.0	-9013.4	-9014.3	-9014.1	-9014.1	-9014.8	-9016.4	-9017.4	-9019.4	-9017.2	-9012.2
24	-9011.4	-9006.5	-9001.8	-9002.4	-9002.4	-9001.7	-9002.1	-9004.8	-9004.8	-9012.2	-9013.4	-9013.9	-9013.3	-9013.1	-9013.6	-9015.4	-9015.6	-9016.3	-9016.3	-9017.2	-9017.0	-9017.5	-9018.1	-9014.3	-9011.0
25	-9007.4	-8999.9	-8995.5	-8999.1	-8999.1	-8999.9	-9005.6	-9006.2	-9006.2	-9004.2	-9007.4	-9009.1	-9011.3	-9011.4	-9011.0	-9012.1	-9012.0	-9012.3	-9013.3	-9013.9	-9014.8	-9016.8	-9017.9	-9012.8	-9008.3
26	-9006.4	-9003.9	-9002.3	-9001.6	-9001.6	-9002.2	-9007.0	-9005.8	-9005.8	-9008.0	-9011.8	-9014.2	-9011.9	-9012.8	-9011.7	-9011.3	-9013.0	-9012.9	-9012.9	-9014.1	-9014.4	-9015.4	-9020.1	-9023.4	-9010.2
27	-9020.0	-9011.0	-9006.4	-9009.0	-9009.0	-9012.6	-9012.6	-9013.0	-9013.0	-9012.4	-9012.9	-9013.9	-9013.7	-9012.8	-9012.9	-9014.7	-9015.0	-9015.6	-9015.1	-9015.3	-9015.3	-9018.1	-9020.2	-9020.2	-9013.9
28	-9013.0	-9006.2	-9000.4	-8995.7	-8995.7	-9001.4	-9006.4	-9006.5	-9006.5	-9007.2	-9007.9	-9009.1	-9008.9	-9009.7	-9011.5	-9012.2	-9012.9	-9013.7	-9014.5	-9015.2	-9016.4	-9018.4	-9024.0	-9026.5	-9010.0
29	-9023.2	-9015.6	-9004.7	-8990.2	-8990.2	-8991.1	-8997.5	-8999.5	-8999.5	-9009.2	-9009.5	-9010.9	-9011.0	-9010.0	-9010.5	-9012.6	-9011.3	-9013.4	-9014.0	-9014.2	-9016.6	-9018.5	-9025.2	-9025.0	-9009.3
30	-9024.7	-9022.6	-9019.8	-9015.4	-9015.4	-9006.0	-9002.0	-9001.7	-9001.9	-9004.9	-9011.3	-9014.0	-9011.6	-9012.8	-9011.3	-9010.5	-9013.9	-9013.2	-9015.1	-9013.6	-9012.0	-9017.8	-9027.1	-9028.7	-9013.6
HOURLY MEANS	-9015.9	-9010.3	-9004.8	-9002.1	-9002.1	-9004.7	-9007.5	-9008.6	-9008.7	-9009.3	-9011.0	-9012.6	-9012.8	-9013.2	-9013.9	-9014.5	-9015.2	-9015.6	-9016.1	-9016.6	-9017.4	-9019.1	-9022.6	-9021.1	-9012.3

Tabel 51 Nilai Variasi harian komponen F – total (nT) Juni 2021

Tondano Magnetic Observatory

Juni 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	40373.6	40385.6	40391.7	40388.6	40378.1	40367.9	40360.1	40354.7	40351.2	40349.4	40349.8	40350.3	40350.6	40350.8	40352.2	40352.5	40353.6	40354.8	40355.8	40355.8	40356.1	40357.4	40362.0	40368.7	40361.3
2	40382.4	40395.2	40394.8	40392.1	40384.2	40371.6	40364.4	40359.2	40354.2	40352.6	40353.3	40353.3	40353.9	40358.1	40361.4	40358.6	40358.1	40358.3	40362.7	40362.1	40360.5	40362.8	40370.4	40375.9	40366.7
3	40393.0	40409.9	40408.5	40402.3	40394.1	40393.3	40383.3	40359.8	40336.8	40331.8	40336.6	40337.3	40336.5	40334.2	40336.4	40342.2	40344.9	40348.0	40352.0	40355.2	40355.2	40357.3	40365.3	40373.3	40362.0
4	40383.8	40389.1	40389.4	40387.1	40378.8	40370.9	40366.8	40360.0	40352.9	40348.2	40347.4	40345.3	40346.6	40350.8	40351.0	40349.4	40351.2	40351.5	40351.2	40348.9	40350.6	40353.0	40357.4	40364.8	40360.3
5	40372.7	40378.4	40380.1	40378.1	40372.2	40368.7	40367.0	40361.5	40354.6	40351.3	40351.3	40350.0	40349.7	40352.6	40356.2	40357.2	40357.1	40358.0	40356.2	40356.4	40358.6	40362.0	40366.9	40367.3	40361.8
6	40368.6	40372.0	40369.3	40362.2	40357.3	40354.7	40349.4	40346.7	40343.9	40347.7	40350.2	40351.8	40352.5	40352.7	40353.5	40353.8	40354.9	40356.1	40357.3	40361.3	40360.1	40367.0	40381.1	40383.8	40358.7
7	40392.4	40405.0	40406.8	40403.6	40388.1	40378.9	40383.2	40383.8	40373.6	40365.6	40368.7	40360.4	40350.1	40348.3	40357.1	40355.9	40355.9	40355.5	40356.2	40356.3	40347.4	40347.5	40352.0	40360.4	40368.9
8	40363.1	40370.5	40369.8	40372.2	40368.8	40364.1	40354.3	40343.0	40334.2	40333.7	40336.6	40341.9	40342.1	40341.3	40340.3	40342.9	40345.9	40347.0	40346.8	40348.4	40350.1	40352.2	40359.7	40364.9	40351.4
9	40372.9	40379.7	40383.1	40382.4	40376.8	40372.0	40369.7	40358.3	40351.3	40347.1	40346.6	40346.1	40345.8	40346.1	40346.7	40348.0	40349.7	40352.2	40354.7	40354.3	40354.8	40360.5	40370.6	40382.5	40360.5
10	40372.9	40379.7	40383.1	40382.4	40376.8	40372.0	40369.7	40358.3	40351.3	40347.1	40346.6	40346.1	40345.8	40346.1	40346.7	40348.0	40349.7	40352.2	40354.7	40354.3	40354.8	40360.5	40370.6	40382.5	40360.5
11	40376.7	40392.7	40397.7	40387.5	40374.9	40365.1	40345.8	40318.8	40304.0	40298.1	40293.1	40288.2	40288.8	40287.0	40299.8	40308.7	40318.2	40323.6	40328.2	40333.7	40337.4	40344.9	40359.1	40369.9	40335.1
12	40377.9	40377.5	40368.6	40359.6	40351.0	40339.7	40343.2	40339.6	40340.7	40340.6	40340.5	40343.6	40340.0	40340.7	40341.3	40344.9	40343.6	40344.4	40345.6	40348.1	40350.3	40353.2	40354.3	40367.3	40349.8
13	40375.4	40372.6	40373.4	40368.2	40363.7	40360.0	40353.8	40347.7	40342.9	40339.6	40340.9	40342.2	40344.4	40345.5	40346.7	40347.9	40348.6	40348.0	40348.9	40349.1	40350.0	40353.7	40361.2	40368.7	40353.9
14	40379.7	40387.8	40386.5	40384.3	40378.8	40375.2	40364.3	40352.4	40344.6	40343.5	40343.1	40345.3	40348.8	40347.8	40348.1	40348.7	40349.4	40350.5	40350.8	40353.0	40354.7	40357.3	40364.5	40374.4	40359.7
15	40389.2	40396.9	40393.7	40388.8	40381.3	40368.9	40359.9	40357.1	40363.5	40363.3	40366.7	40363.7	40360.4	40341.3	40342.2	40348.7	40351.9	40344.1	40345.0	40344.2	40344.6	40356.2	40363.2	40367.0	40362.6
16	40375.6	40369.8	40366.0	40366.5	40359.8	40352.4	40340.1	40340.1	40322.3	40328.8	40333.2	40330.3	40336.1	40335.9	40334.7	40338.8	40345.0	40337.1	40335.6	40337.1	40339.2	40341.0	40344.7	40353.6	40344.3
17	40366.8	40375.4	40380.0	40376.3	40367.6	40359.0	40348.1	40348.1	40337.4	40337.0	40337.1	40335.4	40338.4	40341.5	40341.3	40341.4	40342.9	40344.8	40344.8	40345.4	40346.7	40348.2	40355.3	40360.6	40350.8
18	40368.5	40374.7	40371.1	40368.0	40360.7	40361.0	40356.3	40347.7	40340.3	40332.4	40323.6	40324.9	40332.5	40330.0	40331.6	40334.5	40336.8	40339.4	40341.3	40341.1	40341.8	40344.2	40353.8	40365.7	40346.8
19	40374.7	40381.6	40384.5	40384.8	40376.9	40377.2	40366.6	40356.7	40339.5	40337.7	40338.9	40341.9	40342.3	40343.9	40347.6	40345.9	40345.8	40345.7	40345.7	40348.7	40349.1	40350.6	40356.9	40365.6	40356.2
20	40375.4	40379.2	40385.9	40385.0	40377.2	40378.0	40371.3	40364.2	40347.3	40345.6	40344.8	40345.1	40346.8	40349.1	40350.8	40351.4	40353.4	40353.8	40354.4	40354.6	40354.6	40355.4	40361.9	40368.3	40360.6
21	40376.3	40384.4	40389.7	40388.1	40381.1	40380.6	40378.3	40377.5	40358.3	40352.1	40353.5	40354.1	40353.2	40351.4	40355.0	40355.7	40355.7	40354.6	40354.3	40354.1	40355.1	40357.7	40365.9	40376.1	40365.1
22	40386.3	40389.4	40399.3	40400.6	40390.9	40389.1	40368.9	40349.8	40335.9	40331.2	40334.1	40337.5	40336.4	40342.7	40347.1	40347.9	40348.0	40347.8	40348.1	40348.7	40350.3	40353.4	40359.1	40367.0	40358.7
23	40377.8	40385.5	40392.0	40387.8	40383.8	40383.4	40374.7	40365.5	40348.3	40351.9	40352.6	40350.9	40352.2	40352.2	40351.0	40350.2	40351.2	40351.1	40350.5	40350.2	40352.6	40355.6	40362.1	40370.4	40362.7
24	40379.5	40388.1	40390.0	40389.7	40380.8	40380.7	40370.2	40361.2	40339.2	40344.8	40348.8	40350.3	40350.0	40349.4	40350.4	40353.6	40355.9	40357.0	40357.3	40358.2	40359.9	40360.9	40367.5	40376.1	40363.3
25	40384.5	40380.6	40370.3	40369.9	40369.4	40369.6	40370.9	40365.2	40343.6	40336.7	40337.1	40336.8	40338.5	40341.0	40341.5	40343.3	40343.6	40343.8	40343.9	40344.0	40345.4	40350.3	40359.7	40368.7	40354.1
26	40376.1	40383.3	40388.4	40389.1	40382.7	40382.8	40376.8	40366.4	40345.4	40341.7	40341.7	40340.9	40340.1	40341.1	40343.3	40343.5	40345.6	40347.8	40348.1	40349.2	40349.8	40352.4	40364.0	40379.2	40359.1
27	40392.8	40400.1	40403.3	40400.9	40397.3	40398.1	40388.6	40376.7	40348.6	40346.3	40347.9	40348.1	40346.6	40347.0	40345.9	40346.5	40348.0	40350.8	40351.0	40353.1	40351.6	40355.1	40365.8	40382.2	40366.3
28	40395.0	40404.5	40411.8	40405.5	40395.7	40397.0	40386.2	40370.9	40352.3	40352.2	40351.2	40350.6	40352.3	40351.0	40350.2	40350.6	40350.8	40350.6	40350.7	40350.7	40351.1	40355.8	40362.9	40376.6	40367.8
29	40387.2	40395.1	40397.0	40391.3	40383.3	40383.5	40377.7	40369.1	40351.8	40352.9	40355.0	40356.2	40356.4	40356.6	40354.1	40354.0	40352.5	40349.1	40348.6	40348.8	40354.6	40357.5	40367.6	40377.4	40365.7
30	40389.3	40399.7	40409.2	40420.5	40421.1	40419.0	40400.6	40377.4	40336.5	40315.2	40315.4	40325.2	40326.7	40329.5	40332.0	40329.9	40336.0	40334.7	40342.0	40344.7	40337.1	40334.3	40341.5	40350.0	40357.0
HOURLY MEANS	40379.3	40386.1	40387.8	40385.4	40378.4	40374.5	40367.0	40357.9	40344.9	40342.2	40342.9	40343.1	40343.5	40343.5	40345.2	40346.5	40348.1	40348.4	40349.4	40350.3	40350.8	40353.9	40361.6	40370.3	40358.4

Tabel 52 Nilai Variasi harian komponen X – *north* (nT) Juni 2021

Tondano Magnetic Observatory

Juni 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39352.0	39364.4	39371.2	39368.4	39358.6	39347.1	39338.7	39333.2	39329.5	39328.6	39328.7	39328.8	39329.0	39329.1	39330.4	39330.5	39331.6	39332.8	39333.7	39333.6	39333.6	39334.7	39339.3	39347.4	39339.8
2	39362.1	39375.6	39377.7	39375.4	39367.1	39353.0	39344.7	39339.1	39333.9	39332.9	39333.0	39332.4	39332.8	39336.7	39340.6	39337.5	39336.7	39336.6	39340.7	39340.1	39338.6	39340.5	39347.2	39352.6	39346.1
3	39369.5	39387.6	39388.8	39384.0	39377.3	39376.1	39365.9	39342.1	39318.5	39311.4	39315.3	39315.8	39314.7	39312.7	39314.7	39319.8	39323.0	39326.1	39329.9	39333.0	39333.2	39335.1	39343.0	39351.8	39341.2
4	39363.3	39369.8	39370.9	39368.6	39359.5	39350.6	39345.8	39339.6	39332.2	39328.1	39326.9	39324.0	39325.0	39329.2	39329.9	39328.0	39329.6	39330.0	39329.7	39327.2	39328.4	39330.9	39334.9	39343.3	39339.4
5	39353.1	39361.0	39363.6	39362.4	39354.6	39348.3	39345.7	39339.8	39332.8	39330.8	39330.4	39328.8	39328.3	39331.2	39334.9	39336.2	39335.9	39336.7	39335.1	39334.7	39336.8	39340.1	39345.1	39346.7	39341.4
6	39349.4	39353.1	39350.3	39343.1	39337.7	39333.2	39327.8	39325.4	39322.6	39326.4	39329.3	39330.7	39331.5	39331.6	39332.2	39332.5	39333.4	39334.5	39335.7	39339.5	39338.5	39344.9	39358.1	39362.4	39337.7
7	39373.3	39387.0	39389.5	39385.9	39369.0	39357.6	39359.8	39361.0	39350.6	39345.4	39348.3	39339.9	39329.3	39326.9	39335.3	39334.4	39334.2	39333.9	39334.2	39334.7	39324.6	39324.0	39327.7	39338.1	39347.7
8	39342.8	39352.7	39352.8	39355.2	39350.9	39346.1	39335.6	39323.0	39314.0	39312.9	39315.2	39320.0	39320.4	39319.7	39318.7	39321.1	39324.1	39325.1	39325.0	39326.3	39328.0	39330.0	39337.0	39342.8	39330.8
9	39352.3	39361.6	39366.1	39365.9	39360.0	39352.9	39349.1	39336.8	39329.6	39326.5	39325.8	39324.9	39324.5	39324.7	39325.1	39326.3	39327.9	39330.4	39332.8	39332.6	39332.7	39337.8	39346.9	39359.3	39339.7
10	39352.3	39361.6	39366.1	39365.9	39360.0	39352.9	39349.1	39336.8	39329.6	39326.5	39325.8	39324.9	39324.5	39324.7	39325.1	39326.3	39327.9	39330.4	39332.8	39332.6	39332.7	39337.8	39346.9	39359.3	39339.7
11	39357.0	39374.1	39382.2	39374.1	39359.8	39347.9	39327.6	39299.6	39284.4	39276.2	39270.5	39265.2	39265.9	39263.9	39276.3	39285.6	39294.9	39300.8	39305.3	39310.5	39314.5	39321.8	39334.7	39346.0	39314.1
12	39355.4	39357.0	39348.3	39338.7	39330.2	39318.4	39321.0	39317.8	39318.9	39319.8	39320.0	39322.6	39319.1	39319.2	39319.9	39323.0	39321.9	39322.3	39323.5	39326.1	39328.3	39330.6	39331.2	39344.3	39328.2
13	39354.6	39352.2	39355.1	39350.9	39346.6	39341.6	39334.6	39327.5	39322.6	39319.0	39320.3	39321.3	39323.4	39324.3	39325.3	39326.5	39326.9	39325.9	39326.8	39326.9	39327.6	39330.9	39337.8	39346.0	39333.1
14	39358.2	39368.7	39370.2	39368.0	39362.0	39356.7	39345.4	39333.1	39325.1	39322.5	39322.0	39324.3	39327.6	39326.6	39326.6	39327.0	39327.6	39328.7	39328.9	39330.9	39332.6	39334.7	39341.0	39351.9	39339.2
15	39368.0	39377.1	39375.6	39372.0	39365.5	39352.5	39341.9	39338.0	39343.6	39344.2	39347.8	39344.6	39341.3	39321.4	39320.7	39326.8	39330.3	39321.9	39322.3	39321.8	39321.4	39332.7	39339.2	39343.7	39342.3
16	39352.4	39347.1	39343.7	39345.7	39340.4	39332.3	39320.4	39320.4	39302.0	39306.8	39311.2	39308.3	39314.1	39314.4	39313.0	39316.7	39322.7	39315.5	39313.4	39314.6	39316.8	39318.5	39321.3	39329.5	39322.6
17	39343.2	39354.1	39360.7	39358.3	39350.2	39341.9	39329.9	39329.9	39318.9	39316.5	39316.2	39314.5	39317.2	39320.1	39319.8	39319.8	39321.0	39322.8	39322.6	39323.0	39324.5	39325.8	39331.9	39337.7	39330.0
18	39346.7	39354.6	39353.3	39350.7	39343.3	39343.3	39337.8	39328.8	39321.1	39312.4	39303.3	39303.4	39311.1	39308.7	39309.9	39312.7	39315.1	39317.4	39319.2	39318.9	39319.5	39321.7	39330.9	39342.4	39326.1
19	39352.4	39362.6	39367.6	39367.7	39359.7	39359.7	39348.5	39338.1	39320.3	39317.5	39318.1	39320.6	39321.0	39322.4	39326.1	39324.5	39324.1	39324.0	39323.9	39326.8	39326.9	39328.2	39333.7	39343.1	39335.7
20	39355.4	39360.9	39368.2	39368.2	39360.3	39360.3	39352.3	39343.8	39326.5	39324.4	39323.6	39323.8	39325.4	39327.7	39329.4	39329.8	39331.8	39332.2	39332.7	39332.8	39332.4	39333.0	39338.6	39345.6	39340.0
21	39354.3	39364.5	39371.2	39370.7	39363.5	39363.5	39359.8	39357.3	39337.6	39332.7	39333.3	39333.5	39332.5	39330.7	39333.9	39334.6	39334.5	39333.3	39332.8	39332.2	39333.0	39335.6	39343.6	39354.1	39344.7
22	39365.3	39369.0	39380.0	39382.2	39372.2	39372.3	39350.8	39328.9	39314.6	39310.8	39312.8	39316.4	39315.5	39321.6	39326.1	39326.8	39326.6	39326.1	39326.5	39327.0	39328.2	39330.9	39335.7	39344.1	39337.9
23	39356.4	39364.7	39372.4	39368.7	39364.6	39364.7	39355.9	39346.8	39329.1	39332.4	39332.8	39330.5	39331.5	39331.3	39330.0	39329.1	39330.0	39329.9	39329.2	39328.8	39330.9	39333.6	39339.8	39348.8	39342.2
24	39359.4	39369.4	39372.6	39372.2	39363.1	39363.1	39352.2	39342.3	39319.6	39323.8	39327.6	39329.1	39328.9	39328.4	39329.2	39332.1	39334.4	39335.4	39335.6	39336.3	39338.2	39339.0	39345.6	39355.3	39343.0
25	39365.6	39363.5	39354.0	39352.8	39352.3	39352.2	39352.2	39346.1	39323.9	39317.3	39317.1	39316.4	39317.5	39320.2	39320.7	39322.3	39322.7	39322.9	39322.7	39322.6	39323.9	39328.3	39337.8	39348.1	39334.3
26	39357.3	39365.2	39371.0	39371.9	39365.3	39365.3	39358.1	39347.6	39325.8	39321.6	39320.7	39319.3	39319.0	39319.9	39322.4	39322.8	39324.5	39326.8	39327.0	39327.9	39328.4	39330.9	39341.6	39356.5	39339.0
27	39371.2	39380.9	39385.2	39382.2	39378.5	39378.6	39368.9	39356.5	39327.6	39325.3	39326.8	39326.8	39325.4	39326.0	39324.8	39325.0	39326.5	39329.2	39329.5	39331.6	39330.1	39333.0	39343.5	39360.2	39345.5
28	39375.1	39386.4	39395.4	39390.0	39380.0	39380.0	39367.7	39351.9	39332.8	39332.5	39331.4	39330.5	39332.3	39330.7	39329.5	39329.8	39329.8	39329.4	39329.3	39329.2	39329.3	39333.6	39339.5	39353.0	39347.9
29	39364.7	39374.6	39379.2	39376.8	39368.6	39368.6	39361.1	39351.8	39333.9	39332.8	39334.9	39335.9	39336.1	39336.5	39333.8	39333.2	39332.0	39328.0	39327.3	39327.4	39332.9	39335.4	39344.1	39354.1	39346.0
30	39366.4	39377.7	39388.2	39400.7	39401.4	39401.4	39383.4	39359.7	39317.6	39295.1	39293.9	39303.3	39305.5	39308.0	39310.9	39309.0	39314.4	39313.2	39320.4	39323.4	39315.9	39311.8	39317.0	39325.3	39336.0
HOURLY MEANS	39358.3	39366.6	39369.7	39367.9	39360.7	39356.1	39347.7	39338.1	39324.6	39321.8	39322.1	39322.0	39322.3	39322.3	39323.8	39325.0	39326.5	39326.7	39327.6	39328.4	39328.7	39331.5	39338.5	39347.8	39337.7

Tabel 53 Nilai Variasi harian komponen Y – east (nT) Juni 2021

Tondano Magnetic Observatory

Juni 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	360.0	351.2	339.0	326.7	323.2	328.7	339.9	352.1	362.0	357.5	351.7	351.9	351.5	351.4	351.4	352.1	352.4	353.0	353.6	354.1	355.2	356.9	362.2	365.6	350.1
2	364.2	362.3	355.5	349.3	346.5	343.6	347.4	354.0	353.2	352.6	348.8	349.7	349.8	351.7	351.1	353.4	355.6	358.5	360.6	361.8	361.0	361.8	371.4	374.6	355.8
3	372.7	361.1	346.1	334.3	332.4	338.7	346.3	352.6	354.4	353.2	350.4	349.0	350.7	350.2	349.6	353.0	352.4	352.5	353.9	355.6	356.4	358.7	363.4	360.3	352.0
4	354.6	348.5	348.5	350.5	347.6	347.7	353.9	356.5	357.6	356.8	350.4	352.1	352.6	351.7	350.4	352.0	352.6	353.3	352.6	353.0	353.3	352.9	358.2	362.8	352.9
5	365.1	355.4	344.1	339.8	341.2	347.4	351.3	357.2	355.9	354.9	353.0	352.7	353.0	353.3	353.3	352.5	353.3	354.4	353.3	355.3	356.4	359.3	363.7	362.2	353.7
6	355.6	347.9	338.6	337.3	340.5	351.2	359.4	359.7	358.9	357.2	352.3	351.2	350.5	350.3	350.7	350.9	351.5	352.5	353.1	354.5	355.2	360.7	374.2	374.1	353.7
7	358.8	348.3	337.3	331.9	329.7	334.8	350.4	355.8	350.4	350.0	347.3	348.6	349.4	349.3	349.5	350.2	352.0	352.5	354.7	353.9	359.3	364.1	372.6	367.3	350.8
8	358.4	346.0	335.6	328.6	332.9	342.1	348.6	354.8	355.5	351.1	349.5	351.6	352.5	352.0	351.6	351.1	351.9	353.0	353.3	353.8	354.3	355.7	360.9	361.7	350.3
9	357.8	348.8	341.3	333.3	325.9	330.3	342.3	355.1	359.4	354.3	350.0	350.1	349.9	350.0	350.5	351.2	352.1	352.7	353.2	353.2	353.9	358.9	369.1	368.0	350.5
10	357.8	348.8	341.3	333.3	325.9	330.3	342.3	355.1	359.4	354.3	350.0	350.1	349.9	350.0	350.5	351.2	352.1	352.7	353.2	353.2	353.9	358.9	369.1	368.0	350.5
11	362.2	356.8	346.5	338.3	334.1	336.4	337.3	342.5	352.5	353.6	351.9	351.3	349.3	347.6	348.0	348.4	350.9	351.7	353.3	354.8	354.8	358.4	371.7	372.8	351.0
12	363.1	347.1	333.6	327.8	325.4	326.6	338.7	346.8	351.6	351.3	346.4	346.4	345.9	346.9	347.6	348.5	349.3	351.3	353.4	353.7	355.8	358.4	365.1	369.7	347.9
13	364.1	361.4	349.8	343.7	344.9	346.5	348.4	353.8	358.8	354.5	349.4	349.4	349.3	348.8	349.2	349.0	350.1	353.2	353.6	352.9	353.9	358.5	367.1	369.2	353.3
14	365.0	356.1	340.8	338.3	340.7	342.8	347.8	352.1	356.5	354.5	350.5	348.1	347.9	346.6	346.6	347.0	347.3	347.9	348.6	349.5	350.6	353.2	359.8	360.6	350.0
15	356.0	349.7	339.0	335.4	332.9	334.9	340.0	350.5	355.7	350.6	343.5	341.9	339.1	342.6	347.7	350.0	350.5	356.2	360.2	359.6	363.2	366.7	372.2	366.5	350.2
16	359.1	353.1	343.7	333.4	328.3	331.4	331.6	331.6	345.7	349.6	347.5	346.9	346.2	345.7	346.9	348.5	351.6	350.5	351.6	352.2	351.6	352.5	359.0	361.4	346.7
17	359.8	352.5	345.5	347.2	341.8	344.2	343.9	343.9	349.8	349.6	348.0	346.4	345.4	345.9	347.0	347.5	348.5	349.4	350.9	352.6	351.5	351.8	359.5	356.9	349.2
18	352.7	350.4	351.0	350.6	350.6	345.3	343.1	344.3	352.8	350.6	347.0	347.4	347.7	346.0	346.7	347.2	347.6	349.9	351.3	353.4	354.0	355.1	360.0	364.5	350.4
19	362.6	354.8	348.7	348.2	348.1	345.0	340.2	342.4	348.4	348.3	346.4	346.8	346.4	347.0	348.2	348.5	350.1	350.6	350.3	350.4	351.8	352.7	359.7	356.2	349.7
20	351.4	346.0	343.0	337.9	337.9	338.6	341.6	345.6	352.5	353.1	349.5	347.8	347.3	346.7	346.8	347.4	348.6	350.0	351.2	351.7	352.6	354.1	362.3	366.1	348.7
21	362.8	353.4	342.8	335.5	335.5	334.0	343.3	356.5	351.5	346.2	343.5	343.1	343.5	343.7	344.8	345.9	346.1	346.7	348.9	351.3	353.3	353.8	361.2	364.2	348.0
22	362.0	359.4	350.4	344.7	344.6	336.9	332.0	337.9	344.9	345.6	345.4	343.0	343.0	342.5	342.5	343.4	345.3	348.7	348.4	348.7	350.0	353.1	362.7	363.5	347.4
23	355.7	347.3	339.6	333.2	333.2	327.8	330.2	336.2	347.8	344.5	341.5	342.4	342.4	342.7	343.3	343.6	344.1	344.2	344.5	345.7	347.5	349.9	357.5	361.5	343.6
24	362.0	357.0	346.3	337.2	337.2	336.6	347.3	352.4	355.4	351.2	347.2	347.3	346.2	345.0	345.0	346.9	348.7	351.6	353.7	355.7	356.4	359.1	365.6	364.7	350.7
25	350.6	331.5	323.7	320.7	320.7	326.2	337.5	347.1	351.0	347.7	343.8	343.8	344.4	343.5	342.5	342.5	342.9	343.9	345.6	347.3	348.8	351.3	356.6	356.6	342.1
26	350.4	344.6	331.2	322.8	322.7	319.9	324.7	335.4	350.9	348.4	346.6	349.1	346.8	346.7	344.1	342.9	344.2	344.9	345.2	347.3	348.5	349.9	358.2	358.1	342.6
27	351.9	344.3	340.9	336.5	336.5	329.8	325.9	330.5	345.4	348.8	344.3	343.6	343.5	341.7	341.4	343.1	344.0	345.0	345.5	345.9	346.8	350.5	357.2	362.4	343.6
28	357.8	347.3	336.7	330.3	330.2	335.4	344.6	347.2	348.0	348.7	345.7	345.2	344.9	343.8	343.4	343.9	344.2	345.6	346.7	346.5	347.7	350.2	359.9	361.1	345.6
29	356.5	346.8	333.8	321.0	321.0	316.8	321.0	333.2	348.8	347.8	344.5	344.0	343.6	343.0	342.4	343.8	342.3	345.1	346.5	346.5	348.0	351.3	360.9	366.5	342.3
30	365.0	355.5	346.9	345.5	345.5	344.1	344.4	341.0	346.7	347.2	345.3	344.3	342.3	342.6	340.7	338.2	341.0	342.4	343.7	343.1	343.7	348.4	359.4	360.5	346.6
HOURLY MEANS	359.2	351.1	342.0	336.4	335.2	336.5	341.5	347.5	352.7	351.1	347.7	347.5	347.2	347.0	347.1	347.8	348.8	350.1	351.2	351.9	353.0	355.6	363.3	364.3	349.0

Tabel 54 Nilai Variasi harian komponen D – *declination* (menit) Juni 2021

Tondano Magnetic Observatory																							Jun 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	31.47	30.68	29.62	28.54	28.24	28.73	29.72	30.79	31.65	31.26	30.76	30.77	30.74	30.73	30.73	30.79	30.81	30.87	30.92	30.96	31.05	31.20	31.66	31.96	30.61
2	31.82	31.64	31.05	30.51	30.27	30.02	30.37	30.94	30.88	30.83	30.50	30.58	30.58	30.75	30.69	30.90	31.09	31.34	31.52	31.63	31.56	31.63	32.46	32.73	31.10
3	32.56	31.53	30.22	29.19	29.04	29.58	30.26	30.83	30.99	30.90	30.65	30.53	30.68	30.64	30.58	30.87	30.82	30.83	30.95	31.10	31.17	31.37	31.76	31.49	30.77
4	30.98	30.44	30.45	30.62	30.37	30.38	30.93	31.17	31.27	31.20	30.65	30.80	30.83	30.75	30.64	30.78	30.83	30.89	30.83	30.87	30.90	30.86	31.32	31.72	30.85
5	31.90	31.06	30.07	29.69	29.82	30.36	30.71	31.22	31.12	31.03	30.87	30.84	30.87	30.89	30.89	30.82	30.89	30.99	30.89	31.06	31.16	31.41	31.79	31.66	30.92
6	31.08	30.40	29.59	29.49	29.77	30.71	31.43	31.45	31.39	31.24	30.81	30.71	30.65	30.63	30.67	30.68	30.74	30.82	30.87	30.99	31.05	31.53	32.70	32.69	30.92
7	31.34	30.41	29.45	28.98	28.80	29.26	30.62	31.09	30.63	30.59	30.35	30.48	30.56	30.54	30.55	30.62	30.77	30.82	31.01	30.94	31.42	31.84	32.59	32.11	30.66
8	31.33	30.24	29.33	28.71	29.10	29.90	30.48	31.03	31.10	30.71	30.58	30.75	30.83	30.79	30.75	30.71	30.77	30.87	30.90	30.94	30.98	31.11	31.55	31.62	30.63
9	31.27	30.47	29.82	29.12	28.48	28.86	29.92	31.05	31.42	30.99	30.61	30.62	30.60	30.61	30.66	30.71	30.79	30.84	30.88	30.88	30.94	31.38	32.26	32.15	30.64
10	31.27	30.47	29.82	29.12	28.48	28.86	29.92	31.05	31.42	30.99	30.61	30.62	30.60	30.61	30.66	30.71	30.79	30.84	30.88	30.88	30.94	31.38	32.26	32.15	30.64
11	31.65	31.17	30.26	29.55	29.19	29.40	29.49	29.97	30.86	30.96	30.82	30.77	30.60	30.45	30.47	30.50	30.71	30.77	30.91	31.04	31.04	31.34	32.50	32.58	30.71
12	31.73	30.33	29.16	28.65	28.45	28.57	29.62	30.34	30.76	30.73	30.30	30.30	30.26	30.34	30.40	30.48	30.55	30.72	30.90	30.93	31.12	31.34	31.92	32.32	30.43
13	31.82	31.59	30.57	30.04	30.14	30.29	30.46	30.94	31.38	31.01	30.56	30.56	30.55	30.51	30.54	30.52	30.62	30.88	30.92	30.86	30.95	31.35	32.10	32.27	30.89
14	31.89	31.11	29.77	29.56	29.77	29.96	30.40	30.79	31.18	31.00	30.66	30.45	30.42	30.31	30.31	30.34	30.37	30.42	30.48	30.56	30.66	30.88	31.45	31.51	30.59
15	31.10	30.54	29.61	29.30	29.09	29.27	29.72	30.64	31.09	30.65	30.03	29.88	29.64	29.96	30.41	30.60	30.65	31.15	31.51	31.45	31.77	32.06	32.54	32.04	30.61
16	31.38	30.86	30.04	29.14	28.70	28.97	29.01	29.01	30.25	30.59	30.40	30.35	30.29	30.25	30.35	30.48	30.75	30.66	30.75	30.81	30.75	30.83	31.40	31.60	30.32
17	31.45	30.80	30.19	30.34	29.88	30.09	30.07	30.07	30.59	30.58	30.44	30.30	30.21	30.26	30.35	30.39	30.48	30.56	30.69	30.84	30.74	30.77	31.43	31.20	30.53
18	30.83	30.62	30.67	30.64	30.64	30.18	30.00	30.11	30.86	30.67	30.36	30.40	30.42	30.27	30.33	30.37	30.40	30.61	30.73	30.91	30.96	31.06	31.48	31.87	30.64
19	31.68	30.99	30.46	30.42	30.42	30.14	29.73	29.94	30.47	30.46	30.30	30.34	30.29	30.35	30.45	30.48	30.62	30.67	30.64	30.65	30.76	30.84	31.45	31.14	30.57
20	30.71	30.23	29.97	29.52	29.52	29.59	29.85	30.21	30.83	30.88	30.56	30.41	30.37	30.32	30.33	30.38	30.48	30.60	30.71	30.75	30.83	30.96	31.67	32.00	30.49
21	31.70	30.88	29.94	29.31	29.31	29.18	29.99	31.15	30.73	30.27	30.04	30.00	30.04	30.05	30.15	30.24	30.26	30.32	30.50	30.72	30.89	30.93	31.57	31.82	30.42
22	31.63	31.39	30.60	30.10	30.10	29.43	29.01	29.55	30.17	30.24	30.21	30.00	30.01	29.95	29.96	30.03	30.20	30.49	30.47	30.49	30.61	30.87	31.71	31.77	30.37
23	31.08	30.34	29.66	29.11	29.11	28.64	28.85	29.38	30.41	30.12	29.86	29.94	29.94	29.97	30.02	30.05	30.09	30.10	30.12	30.23	30.39	30.60	31.26	31.60	30.04
24	31.63	31.19	30.25	29.46	29.46	29.41	30.35	30.81	31.08	30.71	30.36	30.37	30.27	30.17	30.17	30.33	30.49	30.74	30.93	31.10	31.16	31.39	31.96	31.87	30.65
25	30.63	28.96	28.28	28.03	28.03	28.51	29.49	30.34	30.70	30.42	30.07	30.07	30.12	30.05	29.96	29.96	29.99	30.08	30.22	30.38	30.50	30.72	31.18	31.17	29.91
26	30.62	30.11	28.93	28.20	28.20	27.95	28.37	29.31	30.68	30.47	30.32	30.53	30.33	30.32	30.10	29.99	30.10	30.16	30.19	30.37	30.48	30.60	31.31	31.29	29.96
27	30.74	30.07	29.77	29.39	29.39	28.80	28.47	28.88	30.21	30.50	30.11	30.05	30.04	29.88	29.86	30.00	30.08	30.17	30.21	30.24	30.33	30.64	31.22	31.66	30.03
28	31.25	30.33	29.39	28.84	28.84	29.29	30.10	30.34	30.43	30.49	30.23	30.18	30.16	30.06	30.03	30.07	30.10	30.22	30.32	30.30	30.40	30.62	31.46	31.56	30.21
29	31.15	30.29	29.15	28.04	28.04	27.68	28.04	29.12	30.50	30.41	30.12	30.08	30.04	29.98	29.93	30.06	29.93	30.18	30.31	30.30	30.43	30.71	31.55	32.03	29.92
30	31.89	31.05	30.29	30.15	30.15	30.03	30.07	29.80	30.32	30.39	30.23	30.13	29.95	29.97	29.81	29.59	29.83	29.95	30.06	30.00	30.06	30.48	31.44	31.53	30.30
HOURLY MEANS	31.39	30.67	29.88	29.39	29.29	29.40	29.85	30.38	30.85	30.71	30.41	30.39	30.36	30.35	30.36	30.42	30.50	30.62	30.71	30.77	30.87	31.09	31.77	31.84	30.51

Tabel 55 Nilai variasi harian komponen I – *inclination* (derajat) Juni 2021

Tondano Magnetic Observatory

Juni 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-12.91	-12.91	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.92	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91	-12.91
2	-12.90	-12.90	-12.88	-12.88	-12.88	-12.89	-12.90	-12.91	-12.91	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92
3	-12.92	-12.91	-12.89	-12.89	-12.88	-12.88	-12.88	-12.89	-12.90	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91	-12.91
4	-12.90	-12.89	-12.89	-12.89	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.91	-12.91	-12.92	-12.92	-12.91	-12.92	-12.92	-12.92	-12.92	-12.91	-12.91
5	-12.90	-12.88	-12.88	-12.87	-12.89	-12.91	-12.91	-12.91	-12.92	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.91	-12.91	-12.91
6	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.92	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.91	-12.91
7	-12.89	-12.88	-12.88	-12.88	-12.90	-12.91	-12.92	-12.92	-12.92	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.91	-12.92	-12.92	-12.92	-12.91	-12.92	-12.93	-12.93	-12.92	-12.91
8	-12.91	-12.89	-12.88	-12.88	-12.89	-12.89	-12.90	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91
9	-12.91	-12.89	-12.88	-12.88	-12.88	-12.90	-12.91	-12.91	-12.92	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91
10	-12.91	-12.89	-12.88	-12.88	-12.88	-12.90	-12.91	-12.91	-12.92	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91
11	-12.90	-12.89	-12.87	-12.86	-12.87	-12.89	-12.90	-12.91	-12.91	-12.93	-12.93	-12.93	-12.93	-12.94	-12.94	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.93	-12.91
12	-12.92	-12.90	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92
13	-12.91	-12.90	-12.89	-12.89	-12.89	-12.89	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91
14	-12.91	-12.89	-12.88	-12.88	-12.88	-12.89	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.92	-12.91
15	-12.91	-12.90	-12.89	-12.88	-12.87	-12.88	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.92	-12.91
16	-12.92	-12.92	-12.92	-12.91	-12.90	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.92
17	-12.93	-12.91	-12.90	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.92	-12.91
18	-12.91	-12.90	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91
19	-12.92	-12.89	-12.88	-12.88	-12.88	-12.89	-12.89	-12.90	-12.90	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91
20	-12.90	-12.89	-12.89	-12.88	-12.88	-12.89	-12.90	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91
21	-12.91	-12.90	-12.89	-12.88	-12.89	-12.88	-12.89	-12.90	-12.91	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.91	-12.91
22	-12.91	-12.90	-12.89	-12.89	-12.89	-12.88	-12.89	-12.91	-12.92	-12.91	-12.92	-12.92	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91
23	-12.91	-12.91	-12.90	-12.90	-12.90	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.91	-12.91
24	-12.90	-12.89	-12.88	-12.88	-12.89	-12.89	-12.89	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.91	-12.92	-12.92	-12.92	-12.91	-12.91	-12.91
25	-12.89	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.91	-12.91	-12.90
26	-12.89	-12.89	-12.88	-12.88	-12.89	-12.89	-12.90	-12.90	-12.90	-12.91	-12.91	-12.92	-12.91	-12.92	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.91
27	-12.91	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.91	-12.92	-12.92	-12.92	-12.91	-12.91
28	-12.90	-12.88	-12.87	-12.87	-12.87	-12.88	-12.89	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.90
29	-12.92	-12.90	-12.89	-12.87	-12.87	-12.87	-12.88	-12.89	-12.89	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.90
30	-12.92	-12.91	-12.90	-12.89	-12.89	-12.88	-12.88	-12.89	-12.90	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.94	-12.94	-12.91
HOURLY MEANS	-12.91	-12.90	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91

2. Gangguan badai magnet

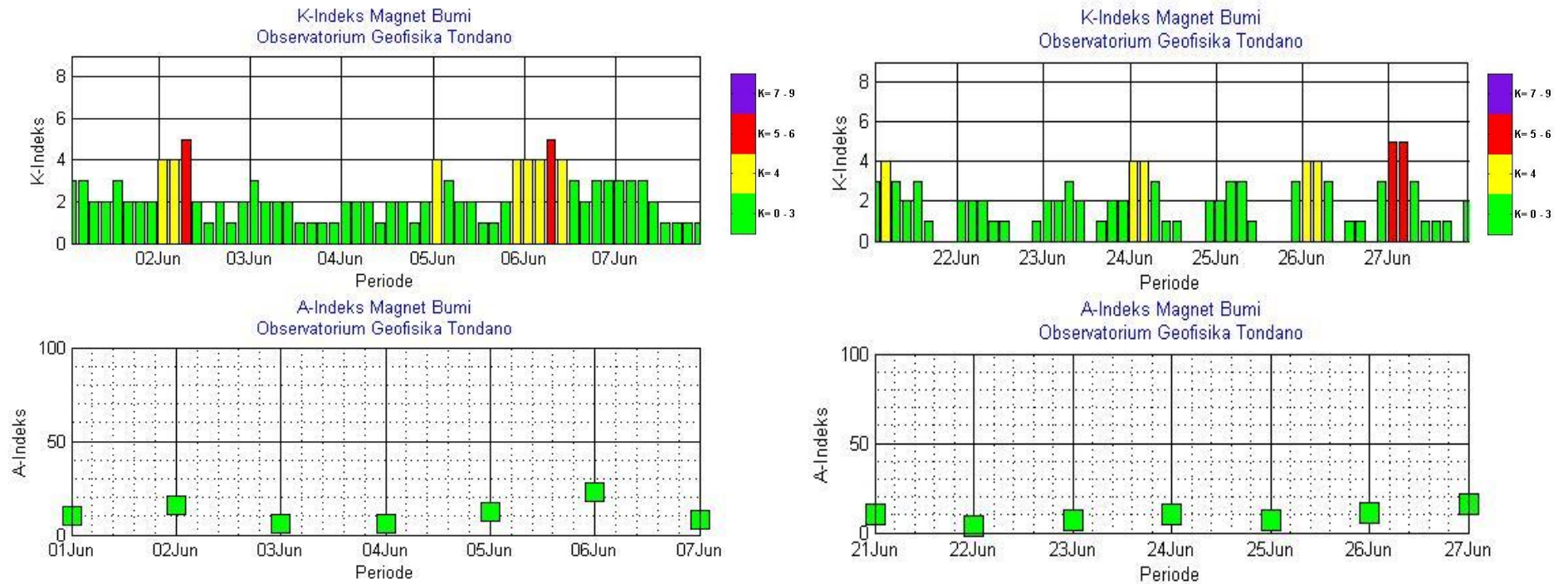
Tabel 56 Monitoring waktu gangguan pada pengamatan magnet bumi Juni 2021

Kejadian rekaman magnet bumi							Durasi gangguan	Keterangan
No	Hari			Waktu				
	Tanggal	Bulan	Tahun	Jam	Menit	Detik		
1	1	6	2021					
2	2	6	2021					
3	3	6	2021					
4	4	6	2021					
5	5	6	2021					
6	6	6	2021					
7	7	6	2021					
8	8	6	2021					
9	9	6	2021					
10	10	6	2021					
11	11	6	2021					
12	12	6	2021					
13	13	6	2021					
14	14	6	2021					
15	15	6	2021					
16	16	6	2021					
17	17	6	2021					
18	18	6	2021					
19	19	6	2021					
20	20	6	2021					
21	21	6	2021					
22	22	6	2021					
23	23	6	2021					
24	24	6	2021					
25	25	6	2021					
26	26	6	2021					
27	27	6	2021					
28	28	6	2021					
29	29	6	2021					
30	30	6	2021					

Tabel 57 Hasil analisa K-indeks dan A-indeks Juni 2021

Tanggal	K-1	K-2	K-3	K-4	K-5	K-6	K-7	K-8	A Indeks	Keterangan
1	0	0	0	0	0	0	0	0	0.000	Tenang
2	3	3	2	2	3	2	2	2	10.000	Tenang
3	4	4	5	2	1	2	1	2	16.125	Tenang
4	3	2	2	2	1	1	1	1	6.000	Tenang
5	2	2	2	1	2	2	1	2	6.000	Tenang
6	4	3	2	2	1	1	2	4	12.000	Tenang
7	4	4	5	4	3	2	3	3	22.625	Tenang
8	3	3	3	2	1	1	1	1	8.000	Tenang
9	2	3	3	0	0	1	0	3	6.875	Tenang
10	2	3	3	0	0	1	0	3	6.875	Tenang
11	3	3	5	3	3	3	2	3	18.125	Tenang
12	4	2	3	2	2	2	1	2	10.000	Tenang
13	3	3	2	1	0	1	0	1	5.750	Tenang
14	2	3	3	1	1	0	1	2	6.625	Tenang
15	3	2	3	4	4	3	3	2	16.000	Tenang
16	4	2	3	3	2	3	1	2	12.000	Tenang
17	2	2	1	1	1	1	1	1	4.000	Tenang
18	3	3	1	3	2	1	0	2	8.125	Tenang
19	2	1	2	1	1	1	1	1	4.000	Tenang
20	2	2	2	0	1	0	0	1	3.375	Tenang
21	2	3	3	2	1	1	0	2	7.125	Tenang
22	3	4	3	2	3	1	0	0	10.250	Tenang
23	2	2	2	1	1	0	0	1	3.750	Tenang
24	2	2	3	2	0	1	2	2	6.625	Tenang
25	4	4	3	1	1	0	0	2	10.250	Tenang
26	2	3	3	1	0	0	0	3	6.875	Tenang
27	4	4	3	0	1	1	0	3	11.250	Tenang
28	5	5	3	1	1	1	0	2	15.875	Tenang
29	3	3	3	2	2	2	2	2	10.000	Tenang
30	4	5	5	3	1	1	2	1	19.250	Tenang

Gambar 27 Plot hasil analisa K-indeks dan A-indeks saat terjadi gangguan magnet bumi di bulan Juni 2021



G. Juli 2021

1. Nilai variasi harian bulan Juli 2021

Tabel 58 Nilai variasi harian komponen H – *horizontal* (nT) Juli 2021

Tondano Magnetic Observatory																								Juli 2021	
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39341.5	39354.8	39355.8	39368.4	39356.9	39358.8	39346.2	39326.4	39318.5	39315.1	39313.2	39312.9	39314.8	39315.3	39316.7	39318.2	39320.2	39320.3	39322.5	39323.8	39324.7	39326.3	39333.5	39343.7	39331.2
2	39358.1	39366.1	39366.9	39365.9	39358.5	39346.2	39342.0	39332.0	39326.0	39323.7	39324.7	39321.9	39322.3	39324.5	39326.3	39326.4	39325.0	39325.8	39326.6	39326.6	39327.1	39329.4	39336.1	39345.5	39336.4
3	39357.4	39364.6	39368.1	39365.0	39358.7	39349.1	39336.7	39322.7	39319.7	39322.7	39321.8	39322.2	39322.7	39322.2	39322.9	39326.2	39326.8	39327.5	39328.2	39328.6	39329.1	39331.5	39338.4	39349.9	39336.0
4	39359.3	39369.3	39380.6	39379.6	39363.2	39351.5	39341.4	39335.1	39333.4	39333.1	39332.4	39332.2	39332.5	39333.1	39333.1	39333.1	39332.9	39332.9	39333.9	39334.7	39336.0	39337.8	39342.7	39352.1	39343.6
5	39368.0	39382.3	39393.8	39390.2	39383.9	39373.2	39363.2	39352.8	39348.1	39345.2	39338.8	39336.5	39332.0	39330.7	39331.3	39327.7	39327.5	39319.9	39319.8	39318.8	39321.5	39324.5	39331.3	39345.7	39346.1
6	39355.2	39367.3	39366.2	39359.1	39351.9	39348.9	39339.7	39322.2	39315.2	39318.9	39321.0	39322.3	39324.5	39318.8	39310.7	39317.7	39320.7	39322.2	39323.2	39325.3	39325.9	39329.6	39334.0	39342.0	39332.6
7	39356.1	39367.8	39375.3	39369.4	39357.8	39346.3	39327.9	39311.9	39302.0	39309.2	39321.5	39326.8	39329.1	39327.2	39325.5	39326.3	39328.2	39330.6	39334.5	39332.5	39333.5	39337.9	39343.4	39352.0	39336.4
8	39364.2	39369.0	39373.8	39376.4	39373.4	39361.1	39344.0	39335.3	39327.9	39324.4	39323.6	39325.6	39326.9	39327.5	39327.9	39329.0	39330.1	39331.2	39334.3	39334.8	39336.1	39339.1	39345.1	39352.6	39342.2
9	39357.6	39369.0	39376.8	39372.9	39362.1	39353.0	39345.5	39337.4	39327.2	39322.7	39322.3	39323.9	39325.8	39328.7	39331.0	39332.9	39333.2	39332.6	39334.2	39335.1	39337.8	39346.0	39357.4	39370.5	39343.2
10	39378.2	39381.2	39373.5	39367.0	39356.3	39347.5	39340.4	39335.0	39330.2	39326.0	39326.3	39327.1	39326.7	39327.6	39327.9	39329.0	39330.6	39332.8	39333.8	39336.7	39334.4	39335.6	39342.2	39354.1	39341.7
11	39366.4	39375.8	39383.1	39383.8	39373.8	39360.7	39346.1	39336.8	39332.9	39329.9	39332.3	39334.2	39334.8	39335.6	39335.7	39335.4	39335.2	39337.2	39338.7	39337.1	39335.9	39337.1	39344.9	39352.9	39346.5
12	39367.7	39381.9	39389.0	39391.0	39388.7	39378.7	39364.5	39347.9	39337.5	39334.7	39331.5	39330.6	39331.8	39337.2	39340.1	39336.1	39334.4	39342.8	39335.7	39333.9	39334.8	39335.5	39345.2	39350.1	39350.1
13	39353.8	39349.8	39346.9	39342.2	39339.8	39338.8	39334.0	39331.6	39327.9	39327.2	39326.9	39326.4	39326.0	39325.7	39324.3	39326.6	39327.7	39327.9	39329.0	39329.7	39329.4	39330.7	39336.6	39348.4	39333.6
14	39365.2	39378.7	39385.3	39388.0	39379.2	39369.3	39352.2	39336.0	39329.6	39332.4	39340.4	39329.7	39320.9	39323.4	39323.1	39315.9	39319.0	39326.3	39306.6	39304.9	39311.2	39309.8	39314.9	39327.0	39337.0
15	39342.0	39353.6	39361.5	39362.9	39361.0	39341.2	39322.7	39313.6	39301.0	39296.2	39296.6	39301.7	39302.6	39302.6	39311.1	39316.2	39319.4	39320.2	39327.0	39324.9	39318.0	39320.9	39325.8	39333.1	39324.0
16	39342.3	39352.1	39363.4	39368.9	39364.2	39355.7	39345.8	39345.8	39323.7	39321.1	39324.0	39324.4	39324.2	39323.9	39323.5	39323.7	39324.1	39326.2	39326.1	39328.5	39327.4	39331.1	39337.1	39344.7	39336.3
17	39354.4	39360.5	39366.0	39367.1	39365.6	39363.8	39358.0	39358.0	39335.5	39330.2	39328.9	39329.0	39327.7	39329.8	39333.6	39331.9	39331.1	39336.1	39334.7	39337.1	39336.4	39336.7	39339.8	39341.4	39343.1
18	39347.3	39358.0	39364.5	39368.8	39365.3	39365.3	39358.7	39351.9	39340.9	39337.7	39336.9	39335.4	39332.0	39332.2	39329.8	39327.6	39328.3	39330.1	39331.8	39332.8	39334.6	39336.3	39341.7	39344.3	39343.0
19	39356.6	39368.5	39387.3	39386.1	39375.3	39375.3	39360.6	39354.2	39334.5	39328.7	39330.9	39329.6	39328.6	39329.1	39326.8	39325.3	39325.2	39322.7	39328.6	39331.0	39332.0	39332.0	39334.2	39335.3	39343.3
20	39342.0	39349.8	39351.1	39352.7	39348.8	39348.8	39347.9	39345.9	39322.7	39318.6	39322.1	39327.2	39328.4	39329.5	39329.5	39329.5	39330.5	39332.3	39338.8	39330.0	39326.1	39324.2	39323.6	39329.9	39334.6
21	39335.7	39351.5	39361.9	39358.4	39354.0	39354.0	39343.4	39337.5	39329.2	39323.7	39321.7	39325.7	39322.5	39318.5	39311.6	39311.7	39315.1	39315.4	39318.1	39318.1	39319.9	39322.3	39331.0	39339.7	39330.9
22	39345.2	39354.5	39367.1	39366.6	39360.2	39360.2	39341.1	39314.6	39278.8	39280.5	39275.2	39275.8	39275.1	39292.4	39295.2	39301.7	39303.6	39307.4	39310.8	39309.3	39311.2	39314.6	39318.6	39323.1	39316.0
23	39330.5	39338.5	39346.1	39348.1	39344.0	39344.0	39338.6	39330.5	39320.1	39318.8	39319.3	39320.3	39321.1	39323.0	39324.1	39325.3	39326.3	39326.7	39326.9	39327.6	39328.7	39331.2	39338.1	39345.5	39331.0
24	39358.2	39368.2	39373.9	39373.8	39367.1	39367.1	39356.0	39344.5	39326.0	39320.4	39319.4	39317.2	39316.6	39318.3	39319.2	39320.5	39322.1	39324.7	39325.4	39325.4	39325.0	39330.2	39340.4	39349.5	39337.9
25	39358.0	39367.2	39374.3	39372.7	39366.5	39366.5	39360.4	39349.1	39331.1	39328.5	39329.3	39329.6	39328.6	39328.9	39328.4	39329.1	39330.5	39331.6	39331.6	39331.6	39332.4	39333.8	39338.8	39346.1	39342.7
26	39356.0	39361.0	39365.1	39365.0	39356.7	39356.7	39347.9	39340.3	39327.6	39328.5	39329.6	39330.3	39328.0	39328.4	39330.2	39332.0	39333.0	39332.5	39333.2	39334.4	39334.6	39335.4	39339.9	39350.6	39340.7
27	39364.7	39381.7	39389.8	39390.4	39386.6	39386.6	39376.5	39362.0	39335.5	39335.7	39337.7	39336.8	39333.9	39334.3	39334.9	39337.1	39337.5	39338.7	39341.0	39346.2	39353.4	39358.8	39366.6	39367.8	39355.6
28	39379.0	39391.9	39395.4	39378.7	39370.3	39370.3	39373.5	39361.5	39332.3	39331.9	39328.1	39327.8	39333.3	39333.5	39331.4	39325.6	39325.5	39323.8	39317.2	39324.2	39325.8	39327.6	39335.3	39346.7	39345.4
29	39360.1	39371.4	39373.3	39365.1	39350.1	39350.1	39344.2	39338.1	39317.2	39318.3	39319.5	39319.6	39318.6	39318.5	39318.5	39316.3	39320.2	39322.2	39328.6	39328.3	39326.0	39329.8	39335.6	39342.5	39334.6
30	39348.0	39354.6	39359.6	39362.1	39363.7	39363.7	39359.0	39345.1	39323.8	39321.2	39323.0	39327.6	39328.0	39328.6	39334.8	39339.4	39340.8	39341.0	39341.5	39341.8	39340.3	39341.6	39345.0	39346.8	39342.5
31	39348.0	39361.5	39368.6	39366.2	39363.0	39361.9	39353.7	39344.2	39335.3	39335.8	39332.8	39330.5	39331.4	39332.3	39334.7	39337.3	39334.2	39334.1	39334.1	39335.5	39336.4	39337.9	39340.8	39345.9	39343.2
HOURLY MEANS	39355.4	39365.2	39371.1	39370.1	39363.4	39358.5	39348.8	39338.7	39325.5	39323.9	39324.2	39324.6	39324.2	39325.1	39325.6	39326.2	39327.1	39328.2	39328.9	39329.3	39329.9	39332.1	39338.0	39345.8	39338.7

Tabel 59 Nilai variasi harian komponen Z – vertical (nT) Juli 2021

Tondano Magnetic Observatory																								July 2021	
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-9026.5	-9024.5	-9016.4	-9017.2	-9007.4	-9007.9	-9005.8	-9005.6	-9005.6	-9012.5	-9013.2	-9013.5	-9013.4	-9013.0	-9012.4	-9012.7	-9013.3	-9013.7	-9015.0	-9014.9	-9016.0	-9017.5	-9023.0	-9022.1	-9014.3
2	-9017.9	-9012.8	-9012.6	-9018.6	-9019.7	-9018.3	-9019.8	-9011.6	-9011.6	-9011.7	-9013.8	-9014.0	-9014.0	-9013.7	-9013.5	-9012.0	-9014.0	-9013.8	-9014.1	-9014.4	-9014.8	-9016.4	-9021.4	-9019.9	-9015.2
3	-9015.6	-9011.1	-9007.1	-9010.9	-9010.9	-9008.4	-9010.4	-9012.6	-9012.6	-9012.5	-9012.3	-9013.7	-9013.8	-9013.4	-9014.0	-9014.4	-9013.5	-9013.3	-9013.9	-9014.1	-9015.2	-9016.9	-9018.9	-9019.5	-9013.3
4	-9015.5	-9013.9	-9013.6	-9003.9	-9000.9	-9003.5	-8998.3	-9002.7	-9002.7	-9009.2	-9008.9	-9011.8	-9013.2	-9013.3	-9013.0	-9013.2	-9013.2	-9013.9	-9014.0	-9013.9	-9015.1	-9017.2	-9022.4	-9022.8	-9011.3
5	-9019.4	-9013.8	-9007.0	-9004.0	-9005.2	-9005.2	-9007.2	-9007.5	-9007.5	-9009.7	-9008.6	-9012.1	-9011.6	-9012.7	-9012.3	-9012.4	-9013.0	-9011.4	-9014.3	-9014.7	-9015.7	-9019.8	-9026.0	-9028.0	-9012.5
6	-9026.5	-9018.1	-9015.3	-9011.4	-9013.2	-9015.0	-9010.3	-9009.3	-9009.3	-9010.4	-9011.4	-9010.9	-9011.3	-9010.2	-9010.5	-9014.4	-9013.5	-9014.1	-9014.7	-9016.0	-9015.6	-9015.8	-9018.1	-9016.1	-9013.8
7	-9014.3	-9007.6	-9005.6	-9001.3	-9002.7	-9005.4	-9004.1	-9007.6	-9007.6	-9012.3	-9012.7	-9011.8	-9011.4	-9010.1	-9010.5	-9012.5	-9014.1	-9013.8	-9013.5	-9012.4	-9015.3	-9017.7	-9020.4	-9018.3	-9011.0
8	-9011.9	-9010.3	-9012.9	-9010.9	-9010.1	-9010.3	-9011.5	-9012.6	-9012.6	-9011.1	-9011.9	-9011.9	-9011.5	-9010.7	-9011.2	-9011.9	-9012.2	-9012.7	-9014.0	-9013.7	-9014.7	-9015.9	-9019.0	-9013.3	-9012.5
9	-9005.6	-9005.4	-9002.4	-9002.2	-8999.2	-9000.9	-9009.5	-9013.5	-9013.5	-9007.0	-9006.7	-9008.5	-9008.8	-9009.8	-9010.3	-9010.7	-9010.2	-9011.4	-9012.5	-9012.5	-9013.7	-9017.5	-9020.7	-9021.9	-9009.8
10	-9015.7	-9008.7	-9003.6	-9006.2	-9008.8	-9017.6	-9019.5	-9019.1	-9019.1	-9011.5	-9010.2	-9011.2	-9011.2	-9010.9	-9010.8	-9010.8	-9011.6	-9012.3	-9012.7	-9012.9	-9013.9	-9015.9	-9020.1	-9018.7	-9013.0
11	-9011.3	-9004.5	-9000.6	-8997.7	-8999.4	-9002.2	-9005.6	-9010.1	-9010.1	-9007.8	-9008.1	-9008.8	-9009.4	-9009.7	-9009.8	-9009.6	-9010.7	-9012.1	-9011.5	-9010.7	-9011.9	-9015.0	-9022.3	-9023.6	-9009.3
12	-9016.9	-9003.6	-9003.2	-8998.5	-8994.9	-8995.4	-8996.3	-9000.1	-9000.1	-9006.3	-9005.6	-9008.2	-9009.4	-9010.6	-9009.1	-9007.9	-9008.6	-9011.0	-9009.6	-9012.6	-9012.9	-9013.4	-9018.6	-9017.0	-9007.1
13	-9010.2	-9002.6	-9000.8	-9000.0	-8999.9	-9003.9	-9004.3	-9001.6	-9001.6	-9005.4	-9006.1	-9008.8	-9010.7	-9010.7	-9010.8	-9010.9	-9011.4	-9010.7	-9012.0	-9011.9	-9013.6	-9015.4	-9020.7	-9020.5	-9008.5
14	-9016.1	-9005.6	-9000.5	-8997.1	-8990.5	-8992.0	-8992.0	-8995.8	-8995.8	-9006.9	-9007.5	-9004.1	-9004.4	-9008.0	-9006.7	-9007.0	-9010.0	-9009.1	-9006.9	-9011.3	-9017.3	-9016.6	-9023.2	-9021.8	-9006.1
15	-9016.9	-9009.5	-8998.6	-8990.6	-8990.3	-8996.3	-9004.1	-9008.7	-9007.0	-9007.7	-9009.4	-9009.3	-9007.7	-9009.8	-9009.8	-9010.5	-9010.1	-9010.7	-9012.8	-9008.4	-9011.5	-9013.5	-9019.8	-9018.2	-9008.0
16	-9014.1	-9001.4	-8991.3	-8987.3	-8988.6	-8994.0	-8998.8	-8998.8	-8998.8	-9007.5	-9009.0	-9009.2	-9009.8	-9010.8	-9011.2	-9011.5	-9012.5	-9013.4	-9013.8	-9013.7	-9012.8	-9015.6	-9019.2	-9016.0	-9006.6
17	-9009.2	-9001.4	-8996.6	-8998.8	-9001.5	-9006.3	-9004.7	-9004.7	-9004.7	-9007.6	-9009.3	-9009.5	-9008.5	-9009.0	-9009.2	-9008.0	-9009.8	-9011.2	-9010.8	-9011.7	-9010.2	-9012.6	-9016.3	-9011.2	-9007.6
18	-9004.8	-9003.0	-9001.8	-8997.0	-8997.0	-8998.1	-9002.6	-9006.6	-9006.6	-9007.0	-9007.3	-9008.9	-9008.4	-9009.6	-9009.1	-9009.4	-9010.8	-9011.3	-9011.2	-9010.9	-9011.3	-9012.5	-9014.4	-9012.7	-9007.2
19	-9009.9	-9003.9	-8992.2	-8978.6	-8978.6	-8977.8	-8988.5	-8999.3	-8999.3	-9006.0	-9006.7	-9007.4	-9006.0	-9007.0	-9005.6	-9007.6	-9007.7	-9008.4	-9010.1	-9009.8	-9010.3	-9010.3	-9016.7	-9016.6	-9002.7
20	-9013.7	-9007.7	-9008.8	-9007.4	-9007.4	-9013.0	-9012.8	-9011.0	-9011.0	-9007.6	-9005.5	-9007.6	-9006.9	-9006.5	-9007.0	-9007.9	-9008.1	-9009.1	-9011.1	-9008.3	-9012.6	-9011.1	-9014.2	-9011.0	-9009.5
21	-9008.7	-9009.1	-9001.8	-9002.0	-9002.0	-9001.4	-9006.2	-9010.5	-9010.5	-9008.5	-9007.5	-9008.0	-9006.0	-9005.6	-9006.1	-9009.0	-9009.6	-9010.3	-9010.3	-9010.4	-9010.8	-9013.2	-9017.5	-9015.1	-9008.3
22	-9004.1	-9000.4	-8999.7	-8995.7	-8995.7	-8996.6	-8999.2	-9008.7	-9008.7	-9015.0	-9011.8	-9009.1	-9011.5	-9013.0	-9012.0	-9012.0	-9012.5	-9013.1	-9011.8	-9012.3	-9013.3	-9015.7	-9018.0	-9013.8	-9008.5
23	-9005.7	-9000.2	-8996.8	-8990.7	-8990.7	-8988.7	-8994.3	-8997.4	-8997.4	-9004.8	-9005.2	-9007.6	-9009.5	-9008.4	-9008.7	-9010.0	-9011.0	-9011.9	-9012.8	-9013.5	-9014.7	-9016.5	-9016.1	-9011.3	-9005.2
24	-9005.0	-9003.0	-9006.0	-9007.5	-9007.5	-9010.1	-9013.7	-9012.7	-9012.7	-9008.4	-9006.0	-9006.3	-9006.2	-9006.7	-9007.8	-9009.3	-9009.0	-9011.0	-9009.8	-9009.2	-9010.5	-9014.1	-9016.6	-9011.8	-9009.2
25	-9006.0	-9001.5	-8999.9	-8995.8	-8995.8	-8997.1	-9004.0	-9003.8	-9003.8	-9007.5	-9006.4	-9007.0	-9007.2	-9008.4	-9008.0	-9008.9	-9009.5	-9009.8	-9009.7	-9009.2	-9010.5	-9012.1	-9012.2	-9010.2	-9006.0
26	-9003.7	-8992.3	-8985.3	-8984.8	-8984.8	-8983.1	-8988.2	-8997.1	-8997.1	-9001.7	-9001.7	-9003.6	-9005.4	-9007.2	-9008.2	-9008.7	-9008.8	-9009.1	-9010.9	-9010.7	-9010.6	-9011.1	-9012.6	-9010.3	-9001.6
27	-9001.1	-9000.6	-8998.2	-8989.6	-8989.6	-8980.5	-8984.7	-8993.9	-8993.9	-9004.5	-9005.7	-9005.2	-9004.9	-9005.9	-9006.7	-9008.5	-9008.5	-9009.5	-9010.2	-9011.8	-9011.5	-9011.3	-9009.8	-9002.7	-9002.0
28	-8997.8	-8994.3	-8983.9	-8983.5	-8983.5	-8992.4	-8998.4	-8993.0	-8993.0	-8999.9	-9000.2	-9001.9	-9001.5	-9001.4	-9003.5	-9004.0	-9005.6	-9002.8	-9007.9	-9011.2	-9008.8	-9009.6	-9010.2	-9004.7	-8999.7
29	-9000.1	-8998.2	-8992.6	-8985.1	-8985.1	-8984.6	-8991.0	-9000.8	-9000.8	-9000.6	-9001.4	-9002.5	-9002.2	-9004.3	-9005.8	-9007.0	-9008.3	-9008.2	-9009.1	-9007.8	-9008.2	-9012.6	-9017.1	-9014.0	-9002.0
30	-9009.5	-9004.8	-8997.6	-8998.7	-8998.7	-9001.2	-9002.8	-8998.9	-9000.9	-9003.3	-9006.3	-9005.7	-9003.4	-9003.1	-9006.3	-9005.4	-9006.4	-9006.7	-9007.3	-9007.9	-9008.1	-9009.1	-9011.0	-9007.1	-9004.6
31	-9001.2	-9003.3	-9000.1	-8996.2	-9001.4	-9003.7	-9002.2	-9001.0	-8999.6	-9002.7	-9001.3	-9004.0	-9004.8	-9006.1	-9006.8	-9007.4	-9007.9	-9007.9	-9009.6	-9010.7	-9010.7	-9012.0	-9013.2	-9010.3	-9005.2
HOURLY MEANS	-9010.8	-9005.7	-9001.7	-8999.0	-8998.7	-9000.4	-9002.9	-9005.1	-9005.0	-9007.6	-9007.7	-9008.5	-9008.5	-9009.0	-9009.2	-9009.8	-9010.5	-9010.9	-9011.5	-9011.7	-9012.6	-9014.3	-9017.7	-9015.5	-9008.1

Tabel 60 Nilai Variasi harian komponen F – total (nT) Juli 2021

Tondano Magnetic Observatory

Juli 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	40363.7	40376.3	40375.4	40387.9	40374.5	40376.5	40363.7	40344.3	40336.6	40334.9	40333.2	40333.0	40334.8	40335.1	40336.5	40337.9	40340.0	40340.2	40342.6	40343.8	40345.0	40346.9	40355.2	40364.9	40351.0
2	40378.0	40384.6	40385.4	40385.8	40378.8	40366.5	40362.7	40351.1	40345.3	40343.1	40344.5	40341.9	40342.3	40344.3	40346.0	40345.8	40344.9	40345.6	40346.4	40346.5	40347.1	40349.7	40357.4	40366.2	40356.2
3	40376.8	40382.8	40385.3	40383.2	40377.0	40367.1	40355.5	40342.3	40339.4	40342.2	40341.4	40342.1	40342.6	40342.0	40342.9	40346.1	40346.5	40347.1	40348.0	40348.4	40349.2	40351.9	40359.0	40370.4	40355.4
4	40378.6	40388.0	40399.0	40395.8	40379.2	40368.3	40357.3	40352.2	40350.5	40351.7	40350.9	40351.4	40352.0	40352.6	40352.5	40352.6	40352.4	40352.6	40353.5	40354.3	40355.8	40358.1	40364.0	40373.3	40362.4
5	40387.9	40400.6	40410.3	40406.2	40400.3	40389.8	40380.5	40370.5	40365.9	40363.6	40357.2	40355.7	40351.1	40350.2	40350.6	40347.1	40347.0	40339.3	40339.9	40339.0	40341.8	40345.7	40353.7	40368.2	40365.1
6	40377.1	40387.0	40385.3	40377.5	40370.9	40368.4	40358.4	40341.1	40334.2	40338.1	40340.4	40341.6	40343.8	40338.0	40330.1	40337.8	40340.6	40342.1	40343.3	40345.6	40346.1	40349.7	40354.5	40361.9	40352.2
7	40375.2	40385.1	40392.1	40385.3	40374.3	40363.7	40345.5	40330.7	40321.1	40329.1	40341.1	40346.1	40348.2	40346.1	40344.5	40345.8	40348.0	40350.2	40354.0	40351.8	40353.5	40358.2	40364.2	40372.2	40355.3
8	40382.6	40386.9	40392.2	40394.3	40391.2	40379.2	40362.8	40354.6	40347.4	40343.7	40343.1	40345.0	40346.1	40346.5	40347.0	40348.3	40349.4	40350.6	40353.9	40354.4	40355.9	40359.1	40365.6	40371.6	40361.3
9	40374.7	40385.9	40392.8	40389.0	40377.7	40369.2	40363.8	40356.8	40346.9	40341.1	40340.6	40342.5	40344.5	40347.6	40349.9	40351.8	40352.0	40351.7	40353.5	40354.4	40357.3	40366.1	40378.0	40390.9	40361.6
10	40397.1	40398.5	40389.8	40384.0	40374.2	40367.6	40361.1	40355.7	40351.0	40345.3	40345.3	40346.3	40345.9	40346.7	40347.0	40348.0	40349.8	40352.0	40353.1	40356.0	40354.0	40355.7	40363.0	40374.3	40360.9
11	40384.6	40392.2	40398.5	40398.5	40389.2	40377.1	40363.5	40355.5	40351.7	40348.3	40350.6	40352.7	40353.4	40354.2	40354.4	40354.0	40354.0	40356.3	40357.6	40355.9	40355.0	40356.9	40366.1	40374.2	40364.8
12	40387.1	40398.0	40404.8	40405.7	40402.7	40393.1	40379.4	40364.1	40353.9	40352.6	40349.3	40349.1	40350.5	40356.0	40358.5	40354.3	40352.8	40361.5	40354.3	40353.3	40354.2	40355.0	40365.6	40370.0	40367.7
13	40372.1	40366.5	40363.3	40358.5	40356.1	40356.0	40351.5	40348.6	40344.9	40345.1	40344.9	40345.1	40345.1	40344.8	40343.4	40345.7	40346.9	40346.9	40348.3	40349.0	40349.0	40350.7	40357.6	40369.1	40352.1
14	40384.5	40395.4	40400.6	40402.5	40392.5	40383.2	40366.4	40351.5	40345.3	40350.4	40358.5	40347.3	40338.7	40342.0	40341.3	40334.4	40338.1	40345.0	40325.3	40324.6	40332.1	40330.6	40337.0	40348.6	40354.8
15	40362.1	40371.8	40377.0	40376.6	40374.6	40356.7	40340.4	40332.5	40319.9	40315.4	40316.2	40321.1	40321.6	40322.1	40330.4	40335.5	40338.5	40339.4	40346.6	40343.5	40337.5	40340.8	40346.9	40353.7	40342.5
16	40361.7	40368.4	40377.2	40381.7	40377.4	40370.3	40361.8	40361.8	40340.2	40339.6	40342.8	40343.2	40343.2	40343.1	40342.8	40343.1	40343.7	40345.8	40345.9	40348.2	40346.9	40351.2	40357.8	40364.5	40354.3
17	40372.4	40376.7	40381.0	40382.5	40381.7	40381.0	40375.0	40375.0	40353.1	40348.5	40347.6	40347.8	40346.2	40348.5	40352.2	40350.3	40349.9	40355.0	40353.6	40356.2	40355.1	40355.9	40359.8	40360.2	40361.0
18	40364.5	40374.6	40380.6	40383.8	40380.3	40380.6	40375.2	40369.4	40358.7	40355.7	40354.9	40353.9	40350.4	40350.9	40348.4	40346.4	40347.4	40349.2	40350.9	40351.8	40353.6	40355.5	40361.2	40363.4	40360.9
19	40374.8	40385.0	40400.7	40396.5	40386.0	40385.8	40373.9	40370.0	40350.8	40346.6	40349.0	40347.9	40346.6	40347.3	40344.8	40343.7	40343.7	40341.4	40347.5	40349.8	40350.8	40350.9	40354.5	40355.5	40360.1
20	40361.4	40367.6	40369.2	40370.3	40366.6	40367.9	40366.9	40364.6	40342.0	40337.2	40340.1	40345.6	40346.6	40347.6	40347.7	40347.9	40348.9	40350.9	40357.7	40348.5	40345.7	40343.4	40343.5	40349.0	40353.2
21	40354.1	40369.5	40378.1	40374.7	40370.4	40370.3	40361.1	40356.3	40348.1	40342.4	40340.2	40344.2	40340.7	40336.6	40330.0	40330.8	40334.2	40334.7	40337.3	40337.3	40339.2	40342.1	40351.5	40359.5	40349.3
22	40362.4	40370.6	40382.7	40381.4	40375.1	40375.3	40357.3	40333.6	40298.6	40301.8	40295.8	40295.8	40295.7	40312.9	40315.4	40321.7	40323.6	40327.5	40330.5	40329.2	40331.3	40335.2	40339.5	40343.0	40334.8
23	40348.3	40354.9	40361.6	40362.2	40358.2	40357.7	40353.7	40346.5	40336.4	40336.8	40337.3	40338.8	40340.1	40341.7	40342.8	40344.2	40345.4	40346.1	40346.4	40347.3	40348.6	40351.4	40358.1	40364.2	40348.7
24	40375.2	40384.5	40390.8	40391.0	40384.5	40385.1	40375.0	40363.6	40345.5	40339.2	40337.6	40335.6	40334.9	40336.7	40337.8	40339.4	40340.9	40343.9	40344.4	40344.2	40344.0	40349.9	40360.5	40368.2	40356.3
25	40375.3	40383.2	40389.7	40387.3	40381.3	40381.6	40377.1	40366.1	40348.5	40346.8	40347.4	40347.8	40346.9	40347.4	40346.9	40347.7	40349.2	40350.4	40350.3	40350.2	40351.3	40353.0	40358.0	40364.6	40360.3
26	40372.8	40375.1	40377.5	40377.3	40369.3	40368.9	40361.4	40356.0	40343.7	40345.5	40346.6	40347.7	40345.9	40346.7	40348.6	40350.5	40351.5	40351.1	40352.2	40353.3	40353.5	40354.4	40359.1	40369.0	40357.4
27	40380.7	40397.1	40404.5	40403.2	40399.4	40397.4	40388.5	40376.4	40350.6	40353.2	40355.4	40354.4	40351.5	40352.1	40352.8	40355.4	40355.9	40357.2	40359.6	40365.0	40372.0	40377.2	40384.4	40384.1	40372.0
28	40393.9	40405.7	40406.8	40390.4	40382.2	40384.2	40388.7	40375.8	40347.3	40348.4	40344.8	40344.9	40350.1	40350.3	40348.8	40343.2	40343.5	40341.2	40335.9	40343.4	40344.4	40346.4	40354.1	40364.0	40361.6
29	40376.0	40386.5	40387.2	40377.5	40362.8	40362.7	40358.5	40354.7	40334.3	40335.3	40336.6	40337.0	40336.0	40334.7	40336.7	40334.8	40338.9	40340.8	40347.3	40346.7	40344.5	40349.2	40355.9	40361.9	40351.5
30	40366.3	40371.7	40374.9	40377.6	40379.2	40379.7	40375.5	40361.1	40340.8	40338.8	40341.2	40345.6	40345.4	40345.9	40352.7	40357.0	40358.6	40358.8	40359.4	40359.9	40358.5	40360.0	40363.7	40364.6	40359.9
31	40364.5	40378.0	40384.3	40381.0	40379.1	40378.6	40370.2	40360.7	40351.7	40352.8	40349.6	40348.0	40349.0	40350.2	40352.7	40355.4	40352.4	40352.3	40352.7	40354.4	40355.2	40357.0	40360.0	40364.4	40360.6
HOURLY MEANS	40373.8	40382.2	40387.0	40385.5	40378.9	40374.5	40365.6	40356.2	40343.4	40342.4	40342.7	40343.2	40342.9	40343.9	40344.4	40345.1	40346.1	40347.3	40348.1	40348.6	40349.3	40351.9	40358.4	40365.5	40356.9

Tabel 61 Nilai Variasi harian komponen X – *north* (nT) Juli 2021

Tondano Magnetic Observatory

Juli 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39339.9	39353.3	39354.4	39366.9	39355.5	39357.4	39344.7	39324.9	39316.9	39313.5	39311.7	39311.4	39313.3	39313.7	39315.2	39316.7	39318.6	39318.8	39320.9	39322.2	39323.2	39324.8	39331.9	39342.1	39329.7
2	39356.5	39364.5	39365.4	39364.4	39357.0	39344.8	39340.5	39330.5	39324.5	39322.2	39323.1	39320.4	39320.8	39323.0	39324.8	39324.9	39323.5	39324.2	39325.1	39325.1	39325.6	39327.9	39334.5	39343.8	39334.9
3	39355.7	39363.0	39366.5	39363.5	39357.2	39347.7	39335.2	39321.3	39318.2	39321.2	39320.3	39320.7	39321.2	39320.7	39321.4	39324.7	39325.3	39326.0	39326.7	39327.1	39327.6	39330.0	39336.8	39348.3	39334.4
4	39357.7	39367.7	39379.0	39378.0	39361.7	39349.9	39339.8	39333.6	39331.8	39331.6	39330.9	39330.8	39331.0	39331.6	39331.6	39331.6	39331.4	39331.4	39332.3	39333.2	39334.4	39336.3	39341.1	39350.5	39342.0
5	39366.4	39380.8	39392.3	39388.8	39382.5	39371.7	39361.6	39351.2	39346.6	39343.7	39337.4	39335.0	39330.5	39329.2	39329.8	39326.2	39326.0	39318.4	39318.3	39317.3	39320.0	39322.9	39329.6	39344.0	39344.6
6	39353.5	39365.8	39364.8	39357.7	39350.6	39347.6	39338.3	39320.7	39313.6	39317.3	39319.5	39320.8	39323.0	39317.3	39309.2	39316.2	39319.2	39320.6	39321.6	39323.8	39324.3	39328.0	39332.4	39340.4	39331.1
7	39354.4	39366.2	39373.8	39367.9	39356.3	39344.8	39326.5	39310.4	39300.5	39307.7	39320.0	39325.3	39327.6	39325.7	39324.0	39324.8	39326.7	39329.0	39333.0	39331.0	39332.0	39336.3	39341.7	39350.4	39334.8
8	39362.6	39367.5	39372.3	39375.0	39372.0	39359.7	39342.5	39333.8	39326.4	39322.9	39322.1	39324.1	39325.3	39325.9	39326.4	39327.5	39328.6	39329.7	39332.8	39333.3	39334.6	39337.6	39343.5	39351.0	39340.7
9	39356.0	39367.5	39375.3	39371.4	39360.5	39351.4	39343.8	39335.7	39325.6	39321.2	39320.7	39322.3	39324.3	39327.2	39329.5	39331.4	39331.7	39331.1	39332.7	39333.6	39336.3	39344.4	39355.8	39368.8	39341.6
10	39376.6	39379.8	39372.1	39365.6	39355.0	39346.1	39338.9	39333.5	39328.7	39324.4	39324.8	39325.6	39325.2	39326.1	39326.4	39327.5	39329.1	39331.2	39332.3	39335.2	39332.8	39334.0	39340.5	39352.5	39340.2
11	39364.8	39374.3	39381.8	39382.5	39372.5	39359.4	39344.6	39335.3	39331.3	39328.3	39330.7	39332.7	39333.3	39334.1	39334.2	39333.9	39333.6	39335.6	39337.2	39335.6	39334.4	39335.5	39343.2	39351.2	39345.0
12	39366.0	39380.4	39387.5	39389.6	39387.3	39377.2	39363.0	39346.4	39335.9	39333.2	39330.0	39329.1	39330.3	39335.7	39338.6	39334.5	39332.9	39341.3	39334.2	39332.4	39333.2	39333.9	39343.6	39348.4	39348.5
13	39352.3	39348.3	39345.6	39340.9	39338.4	39337.3	39332.5	39330.1	39326.4	39325.7	39325.4	39324.9	39324.5	39324.2	39322.8	39325.1	39326.2	39326.3	39327.5	39328.2	39327.8	39329.1	39334.9	39346.8	39332.1
14	39363.6	39377.1	39383.7	39386.5	39377.8	39368.0	39350.8	39334.6	39328.1	39330.8	39338.9	39328.3	39319.4	39321.9	39321.6	39314.3	39317.5	39324.8	39305.0	39303.3	39309.6	39308.2	39313.1	39325.3	39335.5
15	39340.4	39352.1	39360.2	39361.7	39359.7	39339.9	39321.2	39312.0	39299.4	39294.7	39295.1	39300.2	39301.1	39301.1	39309.7	39314.7	39317.9	39318.6	39325.5	39323.4	39316.5	39319.3	39324.1	39331.5	39322.5
16	39340.6	39350.5	39362.0	39367.6	39362.9	39354.4	39344.4	39344.4	39322.2	39319.6	39322.5	39322.9	39322.7	39322.4	39322.0	39322.2	39322.7	39324.7	39324.5	39327.0	39325.9	39329.6	39335.4	39343.1	39334.8
17	39352.8	39359.1	39364.6	39365.7	39364.3	39362.4	39356.6	39356.6	39334.0	39328.6	39327.4	39327.5	39326.2	39328.3	39332.1	39330.4	39329.6	39334.5	39333.2	39335.6	39334.8	39335.1	39338.2	39339.8	39341.6
18	39345.8	39356.6	39363.1	39367.5	39363.9	39363.9	39357.3	39350.5	39339.4	39336.1	39335.4	39334.0	39330.5	39330.7	39328.3	39326.1	39326.8	39328.6	39330.3	39331.3	39333.1	39334.8	39340.2	39342.8	39341.5
19	39355.1	39366.9	39385.7	39384.6	39373.8	39373.8	39359.1	39352.7	39333.0	39327.1	39329.4	39328.1	39327.1	39327.6	39325.3	39323.8	39323.7	39321.2	39327.1	39329.5	39330.5	39330.5	39332.7	39333.7	39341.7
20	39340.5	39348.3	39349.8	39351.4	39347.5	39347.5	39346.4	39344.4	39321.1	39317.0	39320.5	39325.7	39326.9	39328.1	39328.0	39328.0	39329.0	39330.8	39337.3	39328.5	39324.6	39322.6	39322.0	39328.3	39333.1
21	39334.2	39350.0	39360.4	39356.9	39352.5	39352.5	39342.0	39336.1	39327.6	39322.2	39320.1	39324.2	39321.0	39317.0	39310.1	39310.2	39313.6	39313.9	39316.6	39316.6	39318.4	39320.8	39329.4	39338.2	39329.4
22	39343.8	39353.2	39365.8	39365.3	39358.9	39358.8	39339.7	39313.1	39277.2	39278.9	39273.6	39274.3	39273.6	39290.9	39293.7	39300.2	39302.1	39305.9	39309.3	39307.8	39309.7	39313.1	39317.0	39321.6	39314.5
23	39329.0	39337.1	39344.8	39346.9	39342.7	39342.7	39337.2	39329.0	39318.4	39317.2	39317.8	39318.8	39319.6	39321.5	39322.6	39323.8	39324.8	39325.2	39325.3	39326.1	39327.1	39329.6	39336.5	39343.9	39329.5
24	39356.7	39366.7	39372.4	39372.3	39365.6	39365.6	39354.5	39343.0	39324.3	39318.8	39317.8	39315.7	39315.1	39316.8	39317.7	39319.0	39320.6	39323.2	39323.9	39323.9	39323.4	39328.6	39338.8	39347.9	39336.4
25	39356.6	39365.8	39372.9	39371.3	39365.2	39365.2	39358.9	39347.6	39329.6	39326.9	39327.8	39328.1	39327.1	39327.4	39327.0	39327.6	39329.0	39330.1	39330.1	39330.1	39330.9	39332.2	39337.2	39344.5	39341.2
26	39354.5	39359.6	39363.8	39363.6	39355.4	39355.4	39346.5	39338.8	39326.1	39326.9	39328.1	39328.8	39326.5	39326.9	39328.7	39330.5	39331.5	39331.0	39331.7	39332.9	39333.1	39333.9	39338.3	39349.1	39339.2
27	39363.3	39380.3	39388.4	39389.1	39385.3	39385.3	39375.1	39360.6	39333.9	39334.2	39336.2	39335.3	39332.4	39332.8	39333.4	39335.6	39336.0	39337.1	39339.4	39344.7	39351.8	39357.2	39365.0	39366.3	39354.1
28	39377.5	39390.5	39394.0	39377.3	39368.9	39368.9	39372.1	39360.1	39330.7	39330.3	39326.5	39331.8	39332.0	39329.9	39324.1	39324.0	39322.3	39315.7	39322.7	39324.3	39326.1	39333.8	39345.2	39343.9	
29	39358.6	39369.9	39371.9	39363.7	39348.7	39348.7	39342.7	39336.4	39315.6	39316.7	39317.9	39318.1	39317.1	39315.3	39317.0	39314.8	39318.7	39320.7	39327.1	39326.8	39324.5	39328.2	39334.0	39340.9	39333.1
30	39346.4	39353.1	39358.1	39360.6	39362.3	39362.3	39357.6	39343.7	39322.3	39319.7	39321.5	39326.1	39326.5	39327.1	39333.3	39337.9	39339.3	39339.4	39340.0	39340.3	39338.8	39340.1	39343.4	39345.2	39341.0
31	39346.5	39359.9	39367.1	39364.7	39361.5	39360.5	39352.2	39342.7	39333.7	39334.2	39331.3	39329.0	39329.9	39330.8	39333.2	39335.8	39332.7	39332.6	39332.5	39334.0	39334.8	39336.4	39339.2	39344.4	39341.7
HOURLY MEANS	39353.8	39363.7	39369.7	39368.7	39362.0	39357.1	39347.3	39337.2	39324.0	39322.3	39322.7	39323.0	39322.7	39323.7	39324.1	39324.7	39325.6	39326.7	39327.4	39327.8	39328.3	39330.6	39336.4	39344.2	39337.2

Tabel 62 Nilai Variasi harian komponen Y – east (nT) Juli 2021

Tondano Magnetic Observatory																							Juli 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	356.5	352.5	337.2	334.0	332.8	339.3	343.4	344.1	347.7	349.1	346.7	346.8	346.0	345.5	344.4	344.4	344.6	344.8	345.7	345.2	346.1	349.0	357.7	361.7	346.0
2	359.6	352.3	344.8	341.2	338.1	335.0	340.8	342.5	344.0	345.9	344.4	344.4	344.2	343.5	343.3	343.2	346.0	346.1	346.0	346.6	346.4	348.3	357.2	360.5	346.0
3	360.9	353.6	345.7	343.3	341.3	338.6	338.3	338.5	341.4	341.5	340.8	342.3	343.5	343.8	344.3	344.9	344.8	344.2	344.5	344.8	346.0	347.6	354.0	357.2	345.2
4	354.0	350.8	354.8	353.8	351.2	350.5	345.0	343.2	349.3	347.4	341.3	340.8	341.5	342.1	342.7	343.5	344.0	345.5	346.0	345.8	346.7	349.0	354.3	352.8	347.3
5	349.3	340.4	336.6	331.3	334.7	337.1	345.8	348.1	345.9	345.0	341.5	343.5	344.5	344.7	344.4	344.0	344.0	343.8	344.7	344.9	345.6	350.2	361.5	366.2	344.9
6	363.0	350.4	337.3	324.5	319.9	327.4	331.8	339.2	348.8	348.6	344.8	343.8	343.4	343.3	343.3	344.6	345.2	347.1	348.6	350.6	350.8	350.4	355.0	355.8	344.1
7	355.4	351.8	347.0	335.0	340.9	343.2	337.0	341.7	349.1	346.5	341.2	339.6	339.7	339.3	338.9	340.9	344.0	345.4	345.7	345.7	348.4	353.5	362.2	360.4	345.5
8	351.4	346.2	340.0	331.4	332.2	338.1	338.4	341.3	345.8	350.4	347.7	346.5	345.3	344.0	343.2	343.5	343.9	344.8	346.0	346.4	347.6	350.1	357.4	356.8	344.9
9	351.3	348.5	343.3	344.8	348.5	353.3	357.6	358.8	358.1	354.1	348.1	345.6	343.2	342.5	342.6	343.2	342.9	344.5	345.6	346.2	347.8	353.8	361.1	359.1	349.4
10	349.8	338.6	332.5	327.5	326.0	332.8	339.1	345.7	346.9	351.5	347.4	346.3	346.2	345.3	344.3	343.6	343.4	345.4	346.4	347.1	350.9	355.4	365.9	362.5	345.0
11	348.1	336.0	327.1	320.5	320.9	326.5	334.3	344.8	349.8	352.1	346.0	343.6	343.8	343.7	343.8	343.9	345.3	346.8	347.1	346.9	347.8	351.4	363.0	367.0	343.3
12	359.3	351.4	340.5	333.0	339.3	342.6	343.9	348.1	350.1	350.0	346.0	344.7	344.0	343.8	343.4	344.6	344.9	345.0	347.0	349.8	350.7	351.7	358.6	359.3	347.2
13	349.4	335.9	322.9	323.7	328.1	334.7	343.0	347.5	347.1	348.5	343.7	343.2	345.0	345.0	345.5	345.4	346.2	346.1	346.9	346.8	348.6	351.6	358.2	360.4	343.9
14	357.8	355.6	348.0	337.4	332.1	329.0	331.5	335.5	343.1	346.6	343.7	342.8	341.0	341.9	340.9	344.2	345.5	344.5	347.4	347.6	352.9	357.9	370.8	370.8	346.2
15	358.5	343.2	326.3	314.0	316.4	325.5	336.2	348.2	349.0	345.7	343.4	341.5	339.9	341.8	341.8	344.4	346.3	349.5	351.4	348.4	352.7	355.0	364.0	362.3	343.6
16	358.5	349.1	333.5	320.0	318.5	324.6	331.6	331.6	344.4	346.9	342.5	340.8	340.8	341.0	341.5	341.7	342.8	344.0	346.3	346.0	345.2	348.6	357.6	357.0	341.4
17	348.8	340.1	332.4	327.9	329.5	334.1	337.0	337.0	343.4	345.2	345.4	344.4	343.9	343.2	343.0	343.0	344.9	346.1	348.1	348.8	347.5	348.6	354.7	353.3	342.9
18	345.5	338.2	328.8	328.0	327.9	329.1	332.3	335.8	345.8	347.9	344.3	343.2	342.1	342.5	342.8	343.3	344.7	346.3	346.8	346.3	345.6	345.9	348.4	348.2	341.2
19	349.9	350.0	348.0	342.8	342.7	341.5	342.6	341.2	342.6	348.5	345.8	344.5	342.8	343.0	341.7	342.4	342.3	343.7	343.4	343.2	343.8	344.1	353.7	353.3	344.9
20	346.6	334.9	324.0	319.9	319.9	327.1	336.2	343.7	352.0	355.1	346.7	343.3	343.0	342.3	342.3	342.6	343.4	343.9	346.4	347.0	352.4	351.6	359.3	352.7	342.4
21	344.9	340.7	341.0	340.7	340.7	336.2	333.0	339.6	352.1	351.4	346.9	345.0	344.2	342.3	340.9	341.0	341.9	343.5	344.1	343.6	342.9	346.6	354.2	352.4	343.7
22	339.3	324.6	325.5	319.1	319.0	325.9	336.5	350.6	357.8	359.8	355.1	347.8	346.6	342.9	342.6	342.2	343.8	345.2	345.1	346.9	347.1	349.6	353.9	349.1	342.3
23	339.7	328.9	316.9	315.0	315.0	318.4	330.6	341.6	363.0	357.3	349.0	345.8	345.3	343.3	343.5	343.9	344.4	345.9	346.9	348.1	350.0	353.2	358.2	356.9	341.7
24	349.8	342.3	343.2	342.3	342.2	348.1	349.2	350.8	358.2	356.0	348.2	345.5	342.9	340.6	340.3	340.2	340.0	342.8	343.2	343.8	345.7	349.7	357.8	354.7	346.6
25	339.6	327.6	327.4	324.8	324.7	327.7	338.2	344.0	348.5	350.5	345.5	344.1	342.6	342.5	341.6	343.0	344.0	344.4	345.1	345.4	346.1	348.0	353.7	351.1	341.3
26	344.7	332.0	322.8	323.5	323.4	325.9	330.7	341.1	352.1	348.8	342.9	340.5	341.4	341.6	341.9	342.6	342.9	344.0	345.6	346.6	347.4	347.7	352.2	350.0	340.5
27	339.8	333.1	326.3	320.9	320.8	321.5	328.4	334.9	348.9	349.0	345.4	343.7	343.5	342.2	341.6	343.7	345.2	346.4	348.3	350.9	351.4	352.3	353.1	345.3	340.7
28	338.4	337.2	333.6	333.0	332.9	332.1	333.9	338.6	353.8	355.6	349.6	346.4	343.3	342.1	343.9	344.5	343.6	339.3	344.0	345.9	344.8	346.5	349.5	346.2	342.4
29	341.0	335.8	331.1	326.2	326.1	328.6	342.9	359.0	353.7	351.0	346.2	344.0	342.3	342.2	341.5	340.6	340.8	341.2	341.0	340.8	340.4	344.5	357.1	358.5	342.4
30	351.5	342.4	334.8	335.9	335.9	335.2	335.5	339.4	347.0	347.6	348.7	346.9	344.4	342.6	343.0	343.1	345.1	346.8	347.6	348.2	348.5	349.1	354.7	353.4	344.5
31	351.4	350.1	348.1	336.8	332.8	335.0	341.6	347.6	347.5	347.0	341.4	340.5	339.5	339.5	340.5	341.8	343.4	344.4	346.6	346.8	347.3	349.6	352.4	344.2	344.0
HOURLY MEANS	350.1	342.4	335.5	330.7	330.8	333.7	338.3	343.3	349.3	349.7	345.5	343.9	343.2	342.7	342.6	343.2	344.0	344.9	346.0	346.5	347.6	350.0	357.1	356.1	344.0

Tabel 63 Nilai Variasi harian komponen D – *declination* (menit) Juli 2021

Tondano Magnetic Observatory

Juli 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	31.16	30.80	29.47	29.18	29.09	29.65	30.01	30.09	30.42	30.53	30.33	30.34	30.27	30.22	30.13	30.12	30.14	30.16	30.23	30.19	30.27	30.52	31.28	31.62	30.26
2	31.42	30.78	30.13	29.81	29.54	29.29	29.79	29.94	30.09	30.26	30.12	30.13	30.10	30.04	30.02	30.01	30.26	30.27	30.26	30.31	30.29	30.46	31.23	31.51	30.25
3	31.53	30.89	30.20	30.00	29.83	29.59	29.58	29.61	29.87	29.87	29.81	29.94	30.04	30.07	30.12	30.16	30.15	30.10	30.13	30.15	30.26	30.39	30.95	31.22	30.19
4	30.94	30.64	30.98	30.90	30.68	30.63	30.16	30.01	30.54	30.38	29.84	29.80	29.86	29.92	29.96	30.04	30.08	30.21	30.26	30.23	30.31	30.51	30.97	30.83	30.36
5	30.52	29.73	29.39	28.93	29.22	29.44	30.21	30.42	30.23	30.16	29.85	30.03	30.12	30.14	30.12	30.08	30.08	30.07	30.15	30.17	30.23	30.62	31.61	32.01	30.15
6	31.73	30.61	29.47	28.36	27.96	28.61	29.01	29.67	30.52	30.49	30.16	30.07	30.03	30.03	30.04	30.14	30.19	30.36	30.49	30.66	30.68	30.64	31.04	31.11	30.09
7	31.06	30.73	30.31	29.27	29.79	30.00	29.47	29.89	30.55	30.32	29.84	29.70	29.71	29.67	29.64	29.81	30.08	30.20	30.23	30.23	30.46	30.91	31.67	31.50	30.21
8	30.71	30.25	29.70	28.95	29.02	29.55	29.58	29.84	30.24	30.64	30.41	30.30	30.20	30.08	30.02	30.04	30.07	30.15	30.25	30.29	30.39	30.61	31.24	31.18	30.15
9	30.70	30.44	29.99	30.12	30.45	30.87	31.26	31.37	31.32	30.97	30.44	30.22	30.02	29.96	29.96	30.01	29.98	30.12	30.22	30.27	30.41	30.93	31.55	31.37	30.54
10	30.56	29.57	29.04	28.61	28.48	29.09	29.65	30.22	30.33	30.74	30.38	30.29	30.28	30.20	30.11	30.05	30.03	30.21	30.29	30.35	30.69	31.07	31.99	31.68	30.16
11	30.41	29.35	28.56	27.99	28.03	28.53	29.22	30.14	30.59	30.79	30.26	30.05	30.06	30.05	30.06	30.07	30.19	30.32	30.34	30.33	30.41	30.72	31.73	32.07	30.01
12	31.39	30.69	29.73	29.08	29.63	29.92	30.04	30.43	30.61	30.60	30.25	30.14	30.08	30.06	30.03	30.13	30.16	30.16	30.34	30.59	30.66	30.75	31.34	31.40	30.34
13	30.54	29.36	28.22	28.30	28.68	29.26	29.99	30.39	30.36	30.48	30.05	30.02	30.17	30.17	30.22	30.20	30.28	30.27	30.34	30.33	30.48	30.75	31.32	31.50	30.07
14	31.26	31.06	30.39	29.46	29.01	28.74	28.97	29.33	30.01	30.30	30.05	29.98	29.83	29.90	29.82	30.11	30.22	30.13	30.40	30.42	30.87	31.31	32.44	32.43	30.27
15	31.34	29.99	28.51	27.43	27.65	28.45	29.41	30.46	30.54	30.26	30.05	29.88	29.74	29.91	29.90	30.13	30.29	30.57	30.73	30.47	30.85	31.05	31.84	31.68	30.05
16	31.34	30.51	29.14	27.96	27.83	28.37	28.98	28.98	30.12	30.34	29.96	29.80	29.80	29.82	29.87	29.88	29.98	30.08	30.28	30.26	30.19	30.48	31.26	31.20	29.85
17	30.48	29.72	29.04	28.65	28.79	29.19	29.45	29.45	30.02	30.18	30.20	30.12	30.07	30.01	29.99	29.99	30.16	30.26	30.44	30.50	30.38	30.48	31.01	30.89	29.98
18	30.20	29.56	28.73	28.65	28.65	28.75	29.03	29.34	30.23	30.41	30.10	30.01	29.91	29.94	29.98	30.03	30.15	30.28	30.32	30.28	30.22	30.24	30.46	30.44	29.83
19	30.58	30.58	30.38	29.93	29.93	29.83	29.93	29.82	29.96	30.47	30.24	30.13	29.98	29.99	29.89	29.94	29.94	30.06	30.03	30.01	30.06	30.09	30.92	30.89	30.15
20	30.30	29.27	28.32	27.96	27.96	28.59	29.39	30.04	30.79	31.07	30.32	30.02	29.99	29.94	29.93	29.96	30.03	30.07	30.29	30.34	30.82	30.75	31.43	30.85	29.93
21	30.15	29.78	29.79	29.77	29.77	29.39	29.11	29.69	30.79	30.73	30.34	30.17	30.10	29.94	29.83	29.83	29.91	30.05	30.10	30.05	30.00	30.31	30.97	30.80	30.06
22	29.66	28.37	28.44	27.88	27.88	28.48	29.42	30.67	31.32	31.50	31.10	30.46	30.35	30.01	29.99	29.94	30.08	30.20	30.19	30.36	30.36	30.59	30.96	30.53	29.95
23	29.70	28.75	27.70	27.53	27.53	27.84	28.90	29.87	31.75	31.25	30.52	30.25	30.20	30.03	30.05	30.08	30.12	30.25	30.34	30.44	30.61	30.89	31.32	31.20	29.88
24	30.56	29.90	29.98	29.90	29.90	30.41	30.51	30.67	31.33	31.14	30.46	30.22	29.99	29.79	29.77	29.76	29.73	29.98	30.02	30.07	30.23	30.58	31.28	31.00	30.30
25	29.68	28.62	28.60	28.37	28.37	28.63	29.56	30.07	30.47	30.65	30.22	30.09	29.96	29.95	29.87	29.99	30.08	30.12	30.18	30.20	30.26	30.42	30.93	30.69	29.83
26	30.13	29.01	28.20	28.26	28.26	28.48	28.90	29.82	30.79	30.51	29.99	29.77	29.86	29.87	29.90	29.96	29.98	30.08	30.22	30.31	30.38	30.40	30.79	30.59	29.77
27	29.69	29.09	28.49	28.01	28.01	28.08	28.69	29.26	30.51	30.51	30.20	30.05	30.04	29.92	29.86	30.05	30.18	30.28	30.45	30.67	30.71	30.78	30.85	30.17	29.77
28	29.56	29.44	29.12	29.09	29.09	29.01	29.17	29.58	30.93	31.09	30.58	30.30	30.01	29.91	30.07	30.13	30.05	29.67	30.09	30.25	30.16	30.30	30.56	30.26	29.93
29	29.79	29.33	28.92	28.50	28.50	28.72	29.98	31.39	30.94	30.70	30.28	30.09	29.94	29.94	29.88	29.79	29.81	29.84	29.82	29.80	29.77	30.12	31.22	31.34	29.93
30	30.72	29.93	29.25	29.35	29.35	29.29	29.31	29.66	30.35	30.41	30.50	30.34	30.11	29.96	29.99	29.99	30.17	30.32	30.38	30.44	30.47	30.52	31.00	30.89	30.11
31	30.71	30.59	30.41	29.43	29.08	29.27	29.85	30.39	30.38	30.34	29.85	29.77	29.69	29.69	29.77	29.88	30.03	30.11	30.30	30.32	30.36	30.56	30.80	30.09	30.07
HOURLY MEANS	30.60	29.91	29.31	28.89	28.90	29.16	29.57	30.02	30.54	30.58	30.22	30.08	30.02	29.97	29.96	30.01	30.08	30.16	30.26	30.30	30.39	30.60	31.22	31.13	30.08

Tabel 64 Nilai variasi harian komponen I – *inclination* (derajat) Juli 2021

Tondano Magnetic Observatory																							Juli 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-12.93	-12.92	-12.91	-12.91	-12.90	-12.90	-12.90	-12.90	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.93	-12.92	-12.91
2	-12.91	-12.90	-12.90	-12.91	-12.91	-12.91	-12.92	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91
3	-12.91	-12.90	-12.89	-12.90	-12.90	-12.90	-12.91	-12.91	-12.92	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.91
4	-12.91	-12.90	-12.90	-12.88	-12.89	-12.89	-12.89	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.91
5	-12.91	-12.90	-12.88	-12.88	-12.88	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.93	-12.93	-12.91
6	-12.92	-12.91	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91	-12.91
7	-12.91	-12.89	-12.89	-12.88	-12.89	-12.90	-12.90	-12.91	-12.91	-12.92	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.91	-12.91
8	-12.90	-12.90	-12.90	-12.90	-12.89	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.91	-12.91
9	-12.89	-12.89	-12.88	-12.88	-12.88	-12.89	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90
10	-12.90	-12.89	-12.89	-12.89	-12.90	-12.91	-12.92	-12.92	-12.92	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.91	-12.91
11	-12.90	-12.89	-12.88	-12.87	-12.88	-12.89	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.90
12	-12.91	-12.88	-12.88	-12.87	-12.87	-12.87	-12.88	-12.89	-12.89	-12.90	-12.90	-12.91	-12.91	-12.91	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.91	-12.90
13	-12.90	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.91
14	-12.91	-12.89	-12.88	-12.87	-12.87	-12.87	-12.88	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.93	-12.90
15	-12.91	-12.90	-12.88	-12.87	-12.87	-12.89	-12.90	-12.91	-12.91	-12.92	-12.92	-12.92	-12.91	-12.92	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.92	-12.91
16	-12.91	-12.89	-12.87	-12.86	-12.87	-12.88	-12.89	-12.89	-12.89	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.91	-12.91	-12.92	-12.92	-12.91	-12.90
17	-12.90	-12.89	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90
18	-12.90	-12.89	-12.89	-12.88	-12.88	-12.88	-12.89	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90
19	-12.90	-12.89	-12.87	-12.85	-12.85	-12.85	-12.87	-12.89	-12.89	-12.90	-12.90	-12.91	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.89
20	-12.91	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.90	-12.91	-12.91	-12.90	-12.91	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.91	-12.91
21	-12.90	-12.90	-12.89	-12.89	-12.89	-12.89	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.91	-12.91
22	-12.90	-12.89	-12.88	-12.88	-12.88	-12.88	-12.89	-12.91	-12.92	-12.93	-12.93	-12.92	-12.93	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91
23	-12.90	-12.89	-12.89	-12.88	-12.88	-12.87	-12.88	-12.89	-12.89	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.91	-12.91	-12.90
24	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.90
25	-12.89	-12.88	-12.88	-12.88	-12.88	-12.88	-12.89	-12.89	-12.90	-12.91	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.90
26	-12.89	-12.87	-12.86	-12.86	-12.87	-12.86	-12.87	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.89
27	-12.89	-12.88	-12.87	-12.86	-12.86	-12.85	-12.86	-12.88	-12.88	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.90	-12.90	-12.90	-12.89	-12.89
28	-12.88	-12.87	-12.85	-12.86	-12.86	-12.87	-12.88	-12.88	-12.88	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.89
29	-12.89	-12.88	-12.87	-12.86	-12.87	-12.87	-12.88	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.91	-12.90
30	-12.90	-12.89	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.90	-12.90	-12.91	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.90	-12.90
31	-12.89	-12.89	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.90
HOURLY MEANS	-12.90	-12.89	-12.88	-12.88	-12.88	-12.89	-12.89	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.91	-12.90

2. Gangguan badai magnet

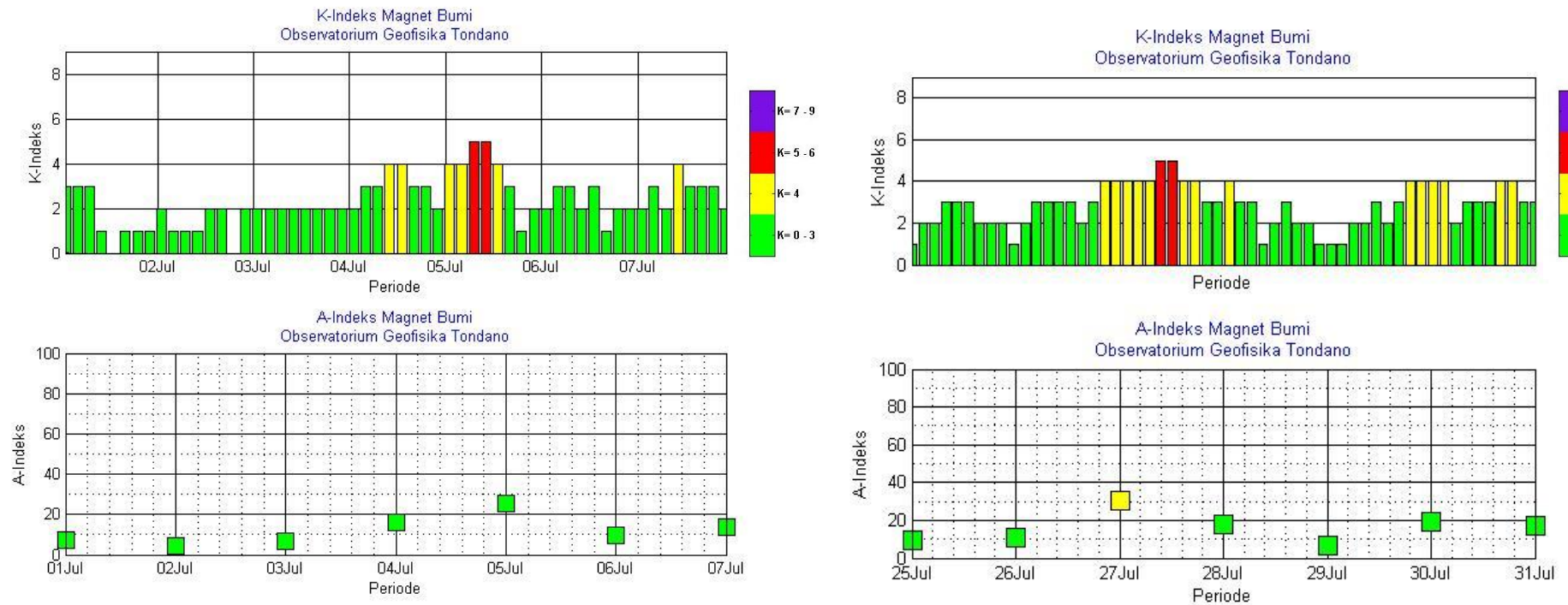
Tabel 65 Monitoring waktu gangguan pada pengamatan magnet bumi Juli 2021

No	Kejadian rekaman magnet bumi			Waktu			Durasi gangguan	Keterangan
	Tanggal	Bulan	Tahun	Jam	Menit	Detik		
1	1	7	2021					
2	2	7	2021					
3	3	7	2021					
4	4	7	2021					
5	5	7	2021					
6	6	7	2021					
7	7	7	2021					
8	8	7	2021					
9	9	7	2021					
10	10	7	2021					
11	11	7	2021					
12	12	7	2021					
13	13	7	2021					
14	14	7	2021					
15	15	7	2021					
16	16	7	2021					
17	17	7	2021					
18	18	7	2021					
19	19	7	2021					
20	20	7	2021					
21	21	7	2021					
22	22	7	2021					
23	23	7	2021					
24	24	7	2021					
25	25	7	2021					
26	26	7	2021					
27	27	7	2021	19	0	0	4j0m	Badai Kecil
28	28	7	2021					
29	29	7	2021					
30	30	7	2021					
31	31	7	2021					

Tabel 66 Hasil analisa K-indeks dan A-indeks Juli 2021

Tanggal	K-1	K-2	K-3	K-4	K-5	K-6	K-7	K-8	A Indeks	Keterangan
1	3	3	3	1	0	1	1	1	7.125	Tenang
2	2	1	1	1	2	2	0	2	4.625	Tenang
3	2	2	2	2	2	2	2	2	7.000	Tenang
4	2	3	3	4	4	3	3	2	16.000	Tenang
5	4	4	5	5	4	3	1	2	25.250	Tenang
6	2	3	3	2	3	1	2	2	9.500	Tenang
7	2	3	2	4	3	3	3	2	13.500	Tenang
8	2	2	1	2	3	3	3	3	10.500	Tenang
9	2	2	2	2	3	3	3	4	12.500	Tenang
10	4	2	2	2	3	3	3	2	12.500	Tenang
11	3	2	2	3	4	4	4	2	16.500	Tenang
12	3	5	4	4	4	4	3	2	24.125	Tenang
13	4	3	3	2	3	2	2	2	12.500	Tenang
14	3	4	2	4	3	3	3	3	17.000	Tenang
15	2	3	2	3	3	1	3	3	11.500	Tenang
16	2	2	2	2	2	1	1	2	6.000	Tenang
17	2	3	3	3	4	3	3	3	15.500	Tenang
18	1	2	3	4	3	3	3	3	14.000	Tenang
19	3	3	3	3	3	2	2	3	13.000	Tenang
20	2	3	3	3	3	3	3	3	14.000	Tenang
21	3	1	3	2	3	2	1	1	8.500	Tenang
22	3	3	4	3	4	2	1	3	15.500	Tenang
23	1	2	3	2	2	1	1	2	6.500	Tenang
24	0	0	1	1	0	0	0	0	0.750	Tenang
25	1	2	2	3	3	3	2	2	9.500	Tenang
26	2	1	2	3	3	3	3	2	10.500	Tenang
27	3	4	4	4	4	4	5	5	30.750	Badai Kecil
28	4	4	3	3	4	3	3	1	18.000	Tenang
29	2	3	2	2	1	1	1	2	6.500	Tenang
30	2	3	2	3	4	4	4	4	19.000	Tenang
31	2	3	3	3	4	4	3	3	17.000	Tenang

Gambar 28 Plot hasil analisa K-indeks dan A-indeks saat terjadi gangguan magnet bumi di bulan Juli 2021



H. Agustus 2021

1. Nilai variasi harian bulan Agustus 2021

Tabel 67 Nilai variasi harian komponen H – *horizontal* (nT) Agustus 2021

Tondano Magnetic Observatory

Agustus 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39350.1	39356.3	39358.9	39359.6	39361.6	39358.6	39350.0	39342.2	39337.4	39335.8	39336.6	39337.4	39335.5	39331.1	39330.1	39331.0	39331.1	39334.6	39337.1	39336.3	39335.6	39338.0	39352.7	39365.2	39343.4
2	39376.1	39388.8	39393.2	39389.2	39385.4	39380.7	39368.4	39348.9	39337.7	39335.6	39340.6	39342.8	39343.8	39343.2	39333.7	39323.1	39314.2	39332.6	39313.1	39313.3	39340.3	39328.7	39341.1	39338.6	39348.0
3	39344.3	39345.9	39336.4	39342.6	39340.7	39334.6	39316.6	39310.6	39304.7	39300.3	39305.4	39305.6	39304.8	39308.7	39310.7	39308.6	39307.0	39307.9	39309.7	39311.2	39313.3	39316.9	39324.5	39332.0	39318.5
4	39337.7	39343.6	39342.2	39345.9	39345.3	39339.3	39337.3	39336.7	39330.9	39327.8	39324.9	39325.8	39328.6	39326.8	39327.7	39326.3	39329.4	39330.6	39330.1	39332.0	39333.3	39335.6	39340.8	39345.5	39334.3
5	39353.4	39361.7	39368.8	39370.0	39363.7	39355.3	39344.5	39334.2	39329.2	39328.7	39330.3	39331.7	39332.7	39333.5	39333.4	39332.8	39333.5	39331.4	39332.1	39335.4	39338.6	39343.1	39354.1	39361.8	39343.1
6	39366.0	39374.3	39381.0	39386.7	39384.0	39372.0	39361.7	39351.6	39340.5	39332.3	39333.1	39333.7	39333.5	39331.7	39332.5	39325.5	39322.0	39317.9	39323.4	39323.4	39324.0	39322.1	39322.9	39327.0	39342.6
7	39339.7	39345.3	39347.4	39343.5	39339.0	39331.9	39314.5	39316.2	39316.8	39316.5	39315.3	39308.0	39302.2	39306.4	39301.5	39310.8	39316.8	39317.0	39321.9	39326.6	39320.7	39321.5	39327.1	39333.6	39322.5
8	39339.5	39350.1	39357.5	39363.9	39362.7	39353.7	39344.8	39337.7	39331.5	39327.7	39326.7	39326.6	39326.6	39325.2	39326.1	39324.3	39326.3	39328.0	39330.3	39330.9	39332.9	39334.0	39338.5	39346.7	39337.2
9	39357.2	39365.1	39366.4	39369.0	39367.0	39362.4	39351.3	39341.3	39338.3	39331.4	39331.5	39333.1	39334.0	39336.4	39336.7	39338.9	39340.2	39341.4	39341.0	39339.8	39341.6	39345.4	39356.3	39371.4	39347.4
10	39384.1	39400.8	39407.8	39401.1	39383.8	39371.2	39359.3	39349.3	39337.0	39331.8	39333.9	39336.9	39333.8	39325.5	39322.7	39326.8	39329.0	39330.5	39333.4	39334.2	39336.2	39337.9	39340.1	39344.7	39349.7
11	39350.7	39367.3	39372.2	39373.2	39371.7	39363.3	39339.3	39332.0	39330.4	39329.1	39328.3	39330.8	39327.5	39326.3	39326.5	39327.7	39329.8	39332.4	39332.1	39331.9	39332.9	39334.5	39340.7	39349.8	39340.8
12	39362.5	39372.2	39377.8	39387.3	39385.4	39381.0	39368.9	39355.1	39342.7	39338.6	39338.8	39337.4	39335.4	39335.4	39334.6	39331.7	39328.0	39326.5	39329.7	39337.2	39339.3	39347.4	39355.9	39365.8	39350.6
13	39380.2	39393.6	39395.9	39393.2	39387.8	39381.6	39373.2	39367.5	39355.7	39339.4	39340.7	39345.1	39343.7	39340.6	39335.7	39331.3	39328.3	39329.3	39330.0	39330.1	39331.1	39331.7	39334.9	39340.1	39352.5
14	39350.9	39371.2	39380.9	39382.3	39379.5	39368.2	39357.9	39345.5	39337.1	39337.9	39339.5	39341.4	39340.4	39342.0	39342.4	39338.6	39336.1	39336.0	39334.6	39333.8	39334.0	39336.2	39338.0	39344.1	39347.8
15	39354.7	39370.0	39380.1	39390.5	39387.8	39370.9	39347.3	39329.9	39309.3	39316.5	39317.8	39319.8	39316.7	39316.9	39318.3	39320.6	39323.3	39325.0	39328.2	39331.1	39329.5	39330.0	39323.8	39319.3	39336.6
16	39327.4	39342.3	39349.8	39357.5	39364.4	39358.8	39349.0	39349.0	39322.8	39322.0	39323.9	39324.8	39322.7	39315.3	39310.1	39311.6	39320.2	39321.1	39320.9	39321.8	39322.8	39325.0	39332.9	39343.3	39331.6
17	39355.6	39369.6	39374.6	39379.0	39377.6	39367.6	39356.4	39356.4	39334.8	39331.2	39324.5	39326.2	39324.9	39324.7	39329.0	39327.5	39330.9	39329.8	39331.7	39332.6	39334.5	39334.4	39335.9	39346.1	39343.2
18	39358.1	39362.5	39361.7	39357.0	39353.5	39353.5	39344.7	39342.5	39327.9	39328.7	39327.5	39321.6	39318.4	39319.9	39323.2	39321.6	39322.5	39324.7	39324.9	39325.6	39329.0	39331.4	39337.5	39345.0	39336.0
19	39356.5	39370.2	39377.9	39379.6	39374.2	39374.2	39365.7	39356.0	39338.5	39333.1	39333.1	39325.1	39316.3	39311.7	39307.9	39310.9	39310.8	39312.4	39316.3	39320.8	39323.2	39327.0	39334.7	39345.8	39338.4
20	39357.0	39364.0	39366.7	39370.7	39365.4	39365.4	39356.6	39340.1	39319.9	39318.2	39311.5	39306.3	39294.1	39282.8	39289.5	39290.9	39299.8	39308.1	39312.8	39316.9	39321.2	39326.6	39341.5	39357.2	39328.5
21	39371.0	39377.2	39380.1	39374.7	39367.9	39367.9	39358.7	39345.3	39339.8	39338.6	39336.2	39329.1	39326.1	39328.8	39326.6	39325.6	39327.3	39330.3	39335.1	39337.6	39338.1	39340.9	39352.1	39366.0	39346.7
22	39376.0	39378.7	39376.6	39373.6	39367.4	39367.4	39359.1	39351.3	39342.0	39344.1	39343.5	39343.1	39341.0	39341.1	39339.6	39339.4	39337.4	39339.9	39342.1	39343.4	39346.6	39350.9	39358.2	39366.7	39352.9
23	39373.9	39384.1	39393.0	39394.5	39391.5	39391.5	39380.6	39365.0	39345.2	39343.1	39345.0	39346.5	39345.5	39345.4	39343.2	39342.6	39344.0	39344.6	39345.3	39346.6	39345.8	39346.3	39354.8	39369.4	39359.5
24	39385.8	39401.6	39412.3	39410.0	39401.2	39401.2	39386.7	39373.4	39340.6	39327.4	39319.7	39321.0	39327.9	39332.4	39335.1	39337.2	39339.5	39341.8	39340.3	39338.5	39344.4	39347.5	39349.7	39360.0	39357.3
25	39375.2	39387.1	39400.5	39376.3	39346.7	39346.7	39321.6	39295.1	39303.0	39311.6	39315.5	39314.4	39308.4	39304.5	39307.2	39311.8	39314.7	39321.9	39324.2	39325.1	39327.4	39331.8	39339.5	39352.2	39331.8
26	39364.5	39372.0	39369.5	39364.7	39361.3	39361.3	39352.5	39337.4	39318.3	39316.3	39321.1	39325.0	39327.6	39325.1	39323.5	39324.3	39326.1	39326.8	39329.3	39328.2	39327.9	39332.3	39340.0	39351.9	39338.6
27	39365.5	39384.3	39390.2	39387.2	39384.5	39384.5	39375.1	39360.0	39326.7	39320.7	39313.8	39315.7	39322.1	39314.3	39310.0	39301.4	39300.2	39300.3	39301.5	39303.7	39308.4	39309.8	39312.2	39317.0	39333.7
28	39326.7	39335.1	39340.3	39331.5	39322.6	39322.6	39313.2	39298.1	39290.7	39293.1	39302.6	39310.7	39309.9	39306.9	39306.1	39306.3	39308.1	39304.3	39309.7	39314.0	39316.6	39320.2	39328.4	39338.5	39314.8
29	39357.3	39373.1	39381.4	39390.9	39382.1	39382.1	39377.2	39360.0	39328.1	39323.6	39325.8	39327.7	39327.8	39327.1	39326.5	39327.3	39327.4	39325.4	39328.5	39326.1	39332.3	39342.4	39349.3	39362.9	39346.3
30	39379.2	39393.9	39398.3	39391.6	39381.9	39381.9	39365.7	39358.3	39336.4	39332.2	39329.8	39330.8	39325.9	39324.8	39321.1	39324.8	39327.8	39329.9	39329.1	39329.0	39329.4	39329.3	39331.9	39339.3	39346.8
31	39352.7	39371.4	39380.9	39374.1	39364.5	39354.4	39340.9	39328.4	39316.8	39311.5	39309.4	39309.6	39308.4	39309.5	39312.6	39315.3	39323.7	39326.1	39327.2	39329.8	39330.5	39334.1	39339.9	39346.4	39334.1
HOURLY MEANS	39359.0	39370.1	39374.8	39374.5	39369.4	39364.7	39352.9	39342.4	39329.4	39326.6	39326.7	39326.9	39325.4	39324.0	39323.3	39323.1	39324.4	39326.1	39327.3	39328.6	39331.0	39333.3	39339.7	39348.2	39340.5

Tabel 68 Nilai variasi harian komponen Z – *vertical* (nT) Agustus 2021

Tondano Magnetic Observatory																								Agustus 2021	
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-9008.3	-9009.6	-9013.1	-9012.9	-9005.7	-9001.5	-9002.6	-9001.9	-9001.9	-9001.2	-9002.1	-9003.7	-9004.9	-9004.4	-9006.1	-9006.9	-9007.5	-9008.3	-9009.2	-9009.2	-9010.6	-9012.2	-9016.5	-9012.9	-9007.2
2	-9007.8	-9009.8	-9011.7	-9006.8	-9009.3	-9006.5	-9001.5	-8996.9	-8996.9	-9001.3	-9002.9	-9001.2	-9001.6	-9000.5	-9001.2	-9002.0	-9006.1	-9016.6	-9003.5	-9011.6	-9011.0	-9005.7	-9013.4	-9006.9	-9005.5
3	-9009.3	-9010.8	-9004.5	-8999.0	-8993.4	-8995.5	-8997.3	-9004.3	-9004.3	-9005.1	-9004.1	-9004.5	-9004.9	-9004.5	-9005.4	-9005.3	-9006.0	-9008.1	-9008.5	-9009.5	-9010.8	-9011.9	-9011.4	-9006.5	-9005.2
4	-9004.3	-9004.3	-9006.0	-9005.9	-9004.3	-9007.6	-9006.7	-9003.6	-9003.6	-9004.0	-9004.3	-9005.4	-9004.7	-9005.5	-9007.1	-9007.0	-9008.4	-9008.7	-9009.0	-9010.1	-9010.1	-9010.0	-9009.5	-9004.4	-9006.4
5	-9002.8	-8999.4	-9003.6	-9001.5	-8998.3	-8999.7	-9003.8	-9004.5	-9004.5	-9006.6	-9004.4	-9005.5	-9005.4	-9005.1	-9005.0	-9006.3	-9006.4	-9007.0	-9009.3	-9010.0	-9010.7	-9012.5	-9016.1	-9009.6	-9005.8
6	-9000.1	-8998.5	-9000.5	-8998.9	-9001.1	-9006.2	-9013.4	-9011.5	-9011.5	-9007.2	-9006.0	-9006.0	-9006.2	-9005.8	-9005.5	-9005.6	-9005.8	-9008.1	-9009.0	-9009.9	-9011.2	-9010.7	-9010.9	-9003.3	-9006.4
7	-8999.2	-8998.9	-8995.6	-8999.8	-9001.2	-8999.1	-9000.7	-9007.6	-9007.6	-9004.5	-8999.9	-9000.9	-9004.7	-9005.9	-9006.4	-9010.3	-9009.9	-9009.4	-9010.1	-9009.3	-9008.0	-9011.2	-9014.6	-9010.2	-9005.2
8	-9007.2	-9006.4	-8997.6	-8992.7	-8988.4	-8992.8	-8997.0	-9000.4	-9000.4	-9000.9	-9001.3	-9003.5	-9004.4	-9004.8	-9005.9	-9005.5	-9007.9	-9008.3	-9008.6	-9008.7	-9009.8	-9012.1	-9016.9	-9015.2	-9004.0
9	-9011.8	-9005.3	-9004.0	-9004.2	-9002.0	-8997.9	-8997.7	-9000.3	-9000.3	-9001.8	-9002.4	-9003.2	-9003.9	-9005.2	-9005.0	-9006.6	-9007.4	-9007.9	-9008.2	-9009.2	-9010.7	-9013.2	-9014.9	-9011.6	-9005.6
10	-9003.5	-9002.9	-8995.9	-8995.5	-8996.7	-9004.0	-9009.1	-9008.5	-9008.5	-9004.1	-9003.7	-9004.1	-9002.9	-9001.4	-9005.9	-9007.2	-9008.1	-9008.0	-9008.3	-9008.4	-9010.4	-9012.8	-9013.5	-9011.5	-9005.6
11	-9003.1	-9001.7	-8995.9	-8984.8	-8979.6	-8982.9	-8986.3	-8997.6	-8997.6	-9000.7	-9001.1	-9002.9	-9001.9	-9003.6	-9004.6	-9006.3	-9006.9	-9007.5	-9007.3	-9008.3	-9009.4	-9012.6	-9017.3	-9014.1	-9001.4
12	-9002.2	-8991.7	-8987.0	-8993.4	-9001.4	-9003.3	-8998.1	-9002.5	-9002.5	-9002.7	-9003.1	-9003.9	-9004.3	-9005.6	-9005.2	-9005.3	-9005.2	-9007.9	-9009.7	-9010.0	-9009.2	-9011.9	-9013.1	-9010.1	-9003.7
13	-9006.6	-9003.8	-9002.1	-9001.1	-9002.9	-9005.0	-9003.9	-9002.4	-9002.4	-9000.9	-9004.0	-9003.9	-9002.6	-9003.1	-9003.6	-9004.6	-9005.6	-9006.6	-9008.7	-9008.1	-9009.0	-9010.4	-9013.6	-9011.0	-9005.2
14	-9002.3	-9002.9	-9003.8	-8998.8	-9000.0	-8997.7	-9000.1	-9001.4	-9001.4	-9003.3	-9002.7	-9004.0	-9004.1	-9005.0	-9004.4	-9004.3	-9005.8	-9007.1	-9007.7	-9008.0	-9010.0	-9010.2	-9013.2	-9013.1	-9004.6
15	-9007.0	-8998.4	-8994.8	-8994.0	-8982.8	-8978.2	-8987.9	-8989.4	-8992.0	-8998.7	-9001.7	-9003.1	-9001.6	-9002.8	-9003.6	-9005.5	-9006.3	-9006.4	-9007.3	-9006.5	-9007.1	-9007.8	-9011.4	-9011.1	-9000.2
16	-9009.7	-9010.6	-8999.2	-8997.5	-8998.4	-8994.3	-8998.8	-8998.8	-8998.8	-9004.8	-9003.9	-9004.5	-9005.0	-9003.2	-9004.6	-9006.9	-9007.5	-9006.5	-9007.7	-9007.7	-9008.3	-9011.2	-9015.9	-9015.4	-9005.0
17	-9012.5	-9005.4	-8997.2	-8991.5	-8993.5	-8993.7	-8994.8	-8994.8	-8994.8	-8999.4	-8999.0	-9002.0	-9000.7	-9003.3	-9004.4	-9003.8	-9006.4	-9006.2	-9007.0	-9007.6	-9008.7	-9009.0	-9016.2	-9014.8	-9002.8
18	-9012.0	-9009.9	-9013.4	-9013.4	-9013.4	-9015.2	-9011.6	-9009.8	-9009.8	-9004.2	-9003.3	-9002.9	-9005.1	-9006.7	-9007.2	-9006.0	-9007.1	-9007.1	-9007.5	-9008.7	-9009.4	-9010.2	-9012.5	-9005.2	-9008.8
19	-9005.3	-9009.5	-9012.7	-9012.7	-9012.7	-9017.1	-9020.4	-9023.3	-9023.3	-9006.9	-9005.4	-9003.7	-9004.3	-9004.9	-9006.4	-9006.9	-9006.9	-9007.8	-9009.7	-9008.0	-9009.0	-9009.0	-9013.1	-9008.5	-9010.3
20	-9001.6	-8995.7	-8995.9	-8998.1	-8998.1	-9000.2	-9005.3	-9005.8	-9005.8	-9004.4	-8999.5	-9001.9	-9000.8	-9003.0	-9006.7	-9006.4	-9009.6	-9007.9	-9006.7	-9007.4	-9008.2	-9011.9	-9020.3	-9018.2	-9005.0
21	-9008.1	-8998.0	-8992.6	-8993.0	-8993.0	-8998.1	-9006.5	-9008.0	-9008.0	-9004.9	-9001.3	-9002.1	-9005.7	-9006.9	-9005.4	-9005.9	-9007.3	-9007.8	-9009.0	-9008.2	-9008.6	-9011.5	-9016.4	-9014.0	-9005.0
22	-9005.3	-8996.1	-8989.6	-8990.5	-8990.5	-8993.6	-8998.3	-9000.7	-9000.7	-9003.8	-9001.8	-9002.4	-9002.9	-9003.9	-9004.3	-9004.8	-9005.9	-9007.2	-9007.5	-9007.5	-9009.0	-9011.9	-9018.9	-9013.4	-9002.9
23	-9003.4	-8999.6	-9000.2	-8992.3	-8992.3	-8990.6	-9000.3	-9002.3	-9002.3	-9001.3	-9001.9	-9002.5	-9002.8	-9003.3	-9003.5	-9005.1	-9005.9	-9006.3	-9007.2	-9008.0	-9009.8	-9012.1	-9017.7	-9015.3	-9003.6
24	-9006.8	-8996.7	-8993.3	-8993.2	-8993.2	-8998.5	-9006.4	-9011.8	-9011.8	-9004.7	-9005.8	-9006.6	-9007.6	-9006.4	-9006.1	-9006.6	-9007.4	-9008.0	-9006.4	-9005.7	-9009.8	-9010.2	-9010.3	-9006.2	-9005.0
25	-8995.9	-8988.4	-8988.7	-8985.7	-8985.7	-8990.8	-8996.5	-9001.8	-9001.8	-9009.0	-9006.2	-9004.3	-9004.3	-9005.7	-9006.6	-9006.7	-9007.2	-9008.7	-9007.0	-9008.0	-9010.1	-9013.1	-9016.3	-9014.0	-9002.6
26	-9005.5	-8996.9	-8991.1	-8993.6	-8993.6	-8997.9	-9000.3	-9001.1	-9001.1	-9008.3	-9007.7	-9005.3	-9004.7	-9004.4	-9005.1	-9006.4	-9007.6	-9007.6	-9008.6	-9007.9	-9009.7	-9013.4	-9021.2	-9019.7	-9005.0
27	-9010.2	-8999.6	-8990.6	-8990.7	-8990.7	-8993.4	-8998.7	-9003.4	-9003.4	-9005.9	-9004.0	-9003.6	-9005.6	-9000.8	-9003.4	-9002.5	-8999.7	-9003.2	-9007.9	-9006.5	-9011.0	-9013.2	-9019.0	-9012.9	-9003.3
28	-9004.1	-8998.1	-8988.7	-8989.6	-8989.6	-8995.1	-8998.8	-8998.7	-8998.7	-9003.8	-9007.3	-9002.9	-9000.6	-9001.6	-9002.8	-9003.7	-9003.5	-9005.0	-9007.3	-9009.2	-9009.2	-9012.2	-9019.5	-9017.3	-9002.8
29	-9011.2	-9007.0	-9004.1	-8999.1	-8999.1	-8998.0	-8998.5	-8995.4	-8995.4	-9001.6	-9002.6	-9002.5	-9002.8	-9002.6	-9003.0	-9004.2	-9004.5	-9005.3	-9005.7	-9007.1	-9011.9	-9014.2	-9015.3	-9010.8	-9004.2
30	-9003.5	-8994.4	-8992.1	-8994.2	-8994.2	-8991.5	-8997.4	-9006.2	-9001.5	-8999.6	-9001.1	-9003.2	-9002.3	-9004.0	-9004.3	-9005.5	-9005.6	-9005.8	-9005.6	-9008.1	-9008.8	-9011.9	-9017.0	-9014.7	-9003.0
31	-9010.2	-9012.3	-9003.3	-8995.6	-8997.3	-9001.7	-9000.7	-8999.8	-8999.7	-9000.0	-9000.4	-9001.4	-9001.9	-9003.3	-9004.1	-9004.6	-9006.8	-9006.0	-9006.7	-9007.7	-9008.4	-9010.6	-9014.1	-9011.7	-9004.5
HOURLY MEANS	-9005.8	-9002.0	-8999.0	-8997.4	-8996.9	-8998.3	-9001.3	-9003.1	-9003.0	-9003.4	-9003.1	-9003.5	-9003.7	-9004.1	-9004.9	-9005.6	-9006.5	-9007.5	-9007.8	-9008.4	-9009.6	-9011.3	-9015.2	-9011.7	-9004.7

Tabel 69 Nilai Variasi harian komponen F – total (nT) Agustus 2021

Tondano Magnetic Observatory

Agustus 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	40368.0	40374.4	40377.7	40378.3	40378.7	40374.9	40366.7	40358.9	40354.3	40352.5	40353.5	40354.7	40353.1	40348.6	40348.1	40349.2	40349.3	40352.9	40355.5	40354.8	40354.5	40357.1	40372.5	40383.8	40361.3
2	40393.2	40406.1	40410.8	40405.8	40402.7	40397.4	40384.4	40364.3	40353.4	40352.4	40357.6	40359.4	40360.4	40359.6	40350.5	40340.3	40332.6	40352.8	40331.0	40332.9	40359.1	40346.6	40360.4	40356.5	40365.4
3	40362.6	40364.5	40353.9	40358.7	40355.6	40350.1	40333.0	40328.7	40322.9	40318.9	40323.5	40323.8	40323.2	40326.9	40329.1	40326.9	40325.5	40326.8	40328.7	40330.5	40332.8	40336.5	40343.8	40350.0	40336.5
4	40355.1	40360.8	40359.9	40363.4	40362.5	40357.3	40355.2	40353.9	40348.2	40345.3	40342.6	40343.7	40346.3	40344.7	40345.9	40344.5	40348.0	40349.1	40348.7	40350.8	40352.1	40354.3	40359.2	40362.7	40352.3
5	40370.0	40377.4	40385.3	40386.0	40379.0	40371.2	40361.6	40351.7	40346.8	40346.8	40347.9	40349.5	40350.4	40351.2	40351.0	40350.8	40351.4	40349.6	40350.7	40354.1	40357.4	40362.2	40373.7	40379.7	40360.6
6	40381.7	40389.5	40396.4	40401.6	40399.5	40389.0	40380.5	40370.3	40359.4	40350.5	40351.0	40351.6	40351.4	40349.6	40350.3	40343.5	40340.1	40336.6	40342.2	40342.3	40343.3	40341.3	40342.1	40344.4	40360.3
7	40355.9	40361.3	40362.6	40359.7	40355.6	40348.2	40331.7	40334.8	40335.4	40334.4	40332.2	40325.4	40320.5	40324.9	40320.2	40330.1	40336.0	40336.0	40341.0	40345.4	40339.3	40340.8	40347.0	40352.4	40340.5
8	40357.5	40367.6	40372.9	40378.0	40375.9	40368.1	40360.4	40354.2	40348.2	40344.6	40343.6	40344.0	40344.3	40343.0	40344.2	40342.3	40344.8	40346.5	40348.8	40349.5	40351.7	40353.2	40358.7	40366.2	40354.5
9	40375.8	40382.0	40382.9	40385.6	40383.2	40377.7	40366.9	40357.7	40354.8	40348.4	40348.6	40350.3	40351.4	40354.0	40354.2	40356.7	40358.2	40359.5	40359.2	40358.2	40360.3	40364.5	40375.5	40389.6	40364.8
10	40400.1	40416.3	40421.5	40414.9	40398.4	40387.7	40377.2	40367.3	40355.3	40349.3	40351.2	40354.2	40351.0	40342.6	40340.8	40345.1	40347.5	40348.9	40351.8	40352.6	40355.0	40357.1	40359.5	40363.5	40367.0
11	40367.4	40383.3	40386.8	40385.3	40382.7	40375.3	40352.6	40348.0	40346.5	40345.9	40345.2	40348.0	40344.6	40343.8	40344.2	40345.8	40347.9	40350.6	40350.3	40350.3	40351.5	40353.8	40360.9	40369.1	40357.5
12	40378.8	40385.9	40390.3	40401.0	40400.9	40397.0	40384.1	40371.6	40359.5	40355.6	40355.8	40354.6	40352.9	40353.1	40352.3	40349.5	40345.8	40344.9	40348.4	40355.8	40357.7	40366.2	40374.8	40383.8	40367.5
13	40397.0	40409.5	40411.4	40408.4	40403.6	40398.0	40389.6	40383.7	40372.2	40356.0	40357.9	40362.2	40360.5	40357.7	40352.9	40348.9	40346.2	40347.4	40348.5	40348.5	40349.7	40350.6	40354.5	40358.9	40369.7
14	40367.5	40387.4	40397.0	40397.3	40394.9	40383.3	40373.8	40362.0	40353.8	40355.1	40356.5	40358.6	40357.7	40359.5	40359.7	40355.9	40353.8	40354.0	40352.8	40352.1	40352.7	40354.9	40357.4	40363.2	40365.0
15	40372.2	40385.2	40394.3	40404.2	40399.2	40381.7	40360.7	40344.1	40324.7	40333.1	40335.1	40337.4	40334.0	40334.4	40336.1	40338.7	40341.4	40343.2	40346.5	40349.2	40347.7	40348.3	40343.1	40338.7	40353.0
16	40346.2	40360.9	40365.7	40372.9	40379.8	40373.4	40364.9	40364.9	40339.3	40339.9	40341.5	40342.6	40340.6	40333.0	40328.2	40330.2	40338.7	40339.4	40339.5	40340.4	40341.4	40344.2	40353.0	40363.0	40349.3
17	40374.3	40386.4	40389.5	40392.5	40391.5	40381.9	40371.2	40371.2	40350.1	40347.6	40341.1	40343.3	40341.8	40342.2	40346.6	40345.0	40348.9	40347.8	40349.9	40350.8	40353.0	40353.0	40356.0	40365.6	40360.0
18	40376.7	40380.5	40380.5	40375.9	40372.5	40373.0	40363.5	40361.0	40346.7	40346.3	40345.0	40339.1	40336.4	40338.2	40341.6	40339.7	40340.9	40343.0	40343.3	40344.3	40347.8	40350.2	40356.7	40362.4	40354.4
19	40373.6	40387.9	40396.1	40397.7	40392.5	40393.5	40385.9	40377.2	40360.1	40351.2	40350.8	40342.7	40334.2	40329.8	40326.5	40329.5	40329.4	40331.2	40335.4	40339.4	40342.0	40345.7	40354.1	40363.9	40357.1
20	40373.3	40378.8	40381.5	40385.8	40380.6	40381.1	40373.7	40357.7	40338.0	40336.1	40328.5	40323.9	40311.8	40301.3	40308.6	40309.9	40319.3	40327.1	40331.3	40335.4	40339.8	40345.9	40362.3	40377.1	40346.2
21	40388.4	40392.2	40393.8	40388.6	40382.0	40383.2	40376.0	40363.4	40358.0	40356.1	40352.9	40346.2	40344.0	40347.0	40344.5	40343.6	40345.6	40348.6	40353.5	40355.9	40356.4	40359.8	40371.9	40384.8	40364.0
22	40392.6	40393.2	40389.8	40387.0	40380.9	40381.6	40374.6	40367.5	40358.4	40361.2	40360.2	40359.9	40358.0	40358.3	40356.9	40356.8	40355.1	40357.9	40360.0	40361.3	40364.8	40369.6	40378.3	40385.4	40369.6
23	40390.2	40399.3	40408.1	40407.8	40404.8	40404.5	40396.0	40381.2	40362.0	40359.7	40361.6	40363.3	40362.4	40362.3	40360.2	40360.0	40361.5	40362.2	40363.1	40364.5	40364.2	40365.2	40374.7	40388.5	40376.1
24	40402.5	40415.7	40425.4	40423.1	40414.5	40415.7	40403.3	40391.6	40359.6	40345.1	40337.8	40339.3	40346.2	40350.4	40352.9	40355.1	40357.5	40359.9	40358.0	40356.1	40362.9	40365.9	40368.1	40377.2	40374.3
25	40389.8	40399.7	40412.8	40388.6	40359.8	40360.9	40337.7	40313.0	40320.7	40330.7	40333.9	40332.4	40326.5	40323.1	40325.9	40330.4	40333.3	40340.6	40342.5	40343.6	40346.4	40351.3	40359.5	40371.4	40348.9
26	40381.5	40386.9	40383.1	40379.0	40375.7	40376.7	40368.6	40354.1	40335.5	40335.1	40339.7	40343.0	40345.3	40342.8	40341.4	40342.4	40344.5	40345.2	40347.8	40346.7	40346.7	40351.8	40361.1	40372.4	40356.1
27	40383.5	40399.5	40403.2	40400.3	40397.7	40398.3	40390.3	40376.6	40344.1	40338.9	40331.7	40333.5	40340.2	40331.5	40327.9	40319.3	40317.5	40318.4	40320.6	40322.4	40328.0	40329.8	40333.5	40336.8	40351.0
28	40344.3	40351.2	40354.1	40345.8	40337.1	40338.3	40329.9	40315.2	40308.0	40311.5	40321.5	40328.5	40327.1	40324.4	40323.9	40324.3	40326.0	40322.7	40328.5	40333.1	40335.7	40339.7	40349.4	40358.7	40332.5
29	40375.7	40390.2	40397.6	40405.7	40397.2	40397.0	40392.3	40374.8	40343.7	40340.7	40343.1	40345.0	40345.1	40344.3	40343.9	40344.9	40345.1	40343.3	40346.4	40344.4	40351.5	40361.8	40368.8	40381.1	40363.5
30	40395.4	40407.6	40411.4	40405.3	40395.9	40395.3	40380.8	40375.6	40353.2	40348.7	40346.6	40348.1	40343.1	40342.5	40338.9	40342.8	40345.7	40347.8	40347.0	40347.4	40348.0	40348.6	40352.2	40359.0	40363.6
31	40371.0	40389.7	40397.0	40388.7	40379.6	40370.8	40357.4	40345.0	40333.6	40328.6	40326.6	40327.0	40326.0	40327.4	40330.6	40333.3	40342.0	40344.2	40345.4	40348.2	40349.0	40353.0	40359.4	40365.2	40351.6
HOURLY MEANS	40376.2	40386.2	40390.1	40389.4	40384.3	40380.1	40369.2	40359.4	40346.7	40344.1	40344.0	40344.4	40342.9	40341.7	40341.2	40341.2	40342.6	40344.5	40345.7	40347.1	40349.7	40352.4	40359.4	40366.9	40357.9

Tabel 70 Nilai Variasi harian komponen X – *north* (nT) Agustus 2021

Tondano Magnetic Observatory

Agustus 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39348.7	39355.0	39357.6	39358.3	39360.3	39357.2	39348.5	39340.6	39335.8	39334.2	39335.0	39335.9	39334.0	39329.6	39328.6	39329.6	39329.6	39333.1	39335.5	39334.8	39334.1	39336.4	39351.1	39363.6	39342.0
2	39374.5	39387.3	39391.8	39387.8	39384.1	39379.2	39366.9	39347.3	39336.1	39334.1	39339.1	39341.4	39342.4	39341.8	39332.2	39321.6	39312.7	39331.0	39311.6	39311.7	39338.7	39327.1	39339.5	39337.1	39346.5
3	39342.9	39344.6	39335.1	39341.3	39339.5	39333.3	39315.2	39309.1	39303.1	39298.8	39303.8	39304.1	39303.4	39307.2	39309.3	39307.1	39305.5	39306.4	39308.2	39309.8	39311.8	39315.4	39323.0	39330.5	39317.0
4	39336.3	39342.3	39340.9	39344.6	39344.0	39337.8	39335.8	39335.2	39329.3	39326.3	39323.4	39324.3	39327.2	39325.3	39326.2	39324.8	39328.0	39329.1	39328.6	39330.4	39331.8	39334.1	39339.2	39344.0	39332.9
5	39351.9	39360.2	39367.4	39368.6	39362.2	39353.8	39343.0	39332.7	39327.7	39327.1	39328.8	39330.2	39331.2	39332.0	39331.9	39331.3	39332.0	39329.9	39330.6	39333.9	39337.1	39341.5	39352.4	39360.2	39341.6
6	39364.5	39372.9	39379.6	39385.3	39382.7	39370.7	39360.3	39350.2	39339.0	39330.8	39331.6	39332.2	39332.0	39330.2	39331.1	39324.0	39320.5	39316.4	39321.9	39321.8	39322.5	39320.5	39321.3	39325.6	39341.1
7	39338.4	39344.1	39346.2	39342.2	39337.6	39330.5	39313.0	39314.6	39315.2	39314.9	39313.8	39306.5	39300.8	39305.0	39300.0	39309.3	39315.4	39315.5	39320.4	39325.1	39319.2	39319.9	39325.5	39332.1	39321.0
8	39338.1	39348.7	39356.2	39362.6	39361.3	39352.3	39343.3	39336.2	39329.9	39326.2	39325.1	39325.1	39325.1	39323.7	39324.7	39322.9	39324.8	39326.5	39328.8	39329.4	39331.4	39332.4	39336.9	39345.1	39335.7
9	39355.8	39363.7	39365.1	39367.8	39365.8	39361.1	39349.9	39339.8	39336.7	39329.8	39330.0	39331.6	39332.5	39334.9	39335.2	39337.4	39338.7	39339.9	39339.5	39338.3	39340.0	39343.8	39354.6	39369.8	39345.9
10	39382.6	39399.4	39406.4	39399.7	39382.4	39369.8	39357.8	39347.7	39335.4	39330.2	39332.4	39335.4	39332.3	39324.1	39321.2	39325.3	39327.5	39329.0	39331.9	39332.7	39334.7	39336.3	39338.6	39343.2	39348.2
11	39349.2	39366.0	39371.0	39372.0	39370.5	39362.0	39337.9	39330.4	39328.8	39327.6	39326.8	39329.3	39326.0	39324.8	39325.0	39326.3	39328.3	39330.9	39330.6	39330.4	39331.3	39332.9	39339.0	39348.3	39339.4
12	39361.1	39370.9	39376.6	39386.1	39384.1	39379.7	39367.6	39353.6	39341.1	39337.1	39337.3	39335.9	39333.9	39333.2	39330.3	39326.5	39325.0	39328.1	39335.7	39337.8	39345.8	39354.3	39364.2	39349.2	
13	39378.6	39392.2	39394.6	39391.8	39386.4	39380.2	39371.7	39366.0	39354.2	39337.9	39339.2	39343.6	39342.2	39339.2	39334.2	39329.9	39326.8	39327.8	39328.5	39328.6	39329.7	39330.2	39333.4	39338.6	39351.1
14	39349.4	39369.8	39379.6	39381.1	39378.2	39366.7	39356.3	39344.0	39335.6	39336.4	39338.0	39339.9	39338.9	39340.6	39340.9	39337.1	39334.6	39334.5	39333.2	39332.3	39332.5	39334.7	39336.5	39342.5	39346.4
15	39353.3	39368.6	39378.7	39389.1	39386.4	39369.5	39345.7	39328.3	39307.7	39314.9	39316.3	39318.3	39315.2	39315.4	39316.9	39319.2	39321.8	39323.5	39326.7	39329.7	39328.0	39328.5	39322.2	39317.8	39335.1
16	39325.9	39340.9	39348.5	39356.3	39363.1	39357.4	39347.5	39347.5	39321.2	39320.4	39322.4	39323.4	39321.2	39313.8	39308.6	39310.1	39318.8	39319.7	39319.5	39320.4	39321.3	39323.5	39331.3	39341.7	39330.2
17	39354.1	39368.2	39373.2	39377.7	39376.1	39366.2	39354.9	39354.9	39333.2	39329.6	39323.0	39324.7	39323.4	39323.3	39327.5	39326.0	39329.4	39328.3	39330.3	39331.1	39333.1	39332.9	39334.3	39344.6	39341.7
18	39356.6	39361.2	39360.3	39355.6	39352.2	39352.2	39343.3	39341.1	39326.4	39327.2	39326.0	39320.2	39316.9	39318.4	39321.8	39320.1	39321.1	39323.3	39323.4	39324.2	39327.6	39329.9	39335.9	39343.5	39334.5
19	39355.1	39368.8	39376.5	39378.1	39372.8	39372.7	39364.2	39354.5	39337.0	39331.6	39331.6	39323.6	39314.8	39310.2	39306.4	39309.5	39309.3	39310.9	39314.8	39319.3	39321.7	39325.5	39333.1	39344.4	39336.9
20	39355.6	39362.7	39365.4	39369.4	39364.0	39364.0	39355.1	39338.5	39318.3	39316.6	39310.0	39304.8	39292.6	39281.3	39288.0	39289.5	39298.3	39306.7	39311.4	39315.4	39319.7	39325.0	39339.8	39355.5	39327.0
21	39369.5	39375.8	39378.8	39373.5	39366.8	39366.8	39357.5	39344.0	39338.3	39337.0	39334.7	39327.7	39324.6	39327.3	39325.1	39324.1	39325.8	39328.8	39333.6	39336.2	39336.6	39339.3	39350.5	39364.4	39345.3
22	39374.5	39377.3	39375.4	39372.3	39366.1	39366.1	39357.7	39349.9	39340.5	39342.5	39342.0	39341.6	39339.5	39339.6	39338.1	39337.9	39335.9	39338.5	39340.6	39341.9	39345.1	39349.3	39356.6	39365.1	39351.4
23	39372.4	39382.7	39391.7	39393.2	39390.2	39390.2	39379.2	39363.5	39343.6	39341.5	39343.5	39345.0	39344.0	39343.9	39341.7	39341.1	39342.5	39343.1	39343.8	39345.1	39344.3	39344.8	39353.1	39367.9	39358.0
24	39384.4	39400.3	39411.1	39408.8	39400.0	39400.0	39385.5	39372.1	39339.1	39325.9	39318.2	39319.5	39326.4	39331.0	39333.6	39335.8	39338.0	39340.3	39338.8	39337.0	39342.9	39345.9	39348.1	39358.4	39355.9
25	39373.8	39385.8	39399.2	39375.1	39345.5	39345.5	39320.4	39293.8	39301.5	39310.1	39314.0	39313.0	39306.9	39303.1	39305.8	39310.4	39313.2	39320.4	39322.7	39323.7	39326.0	39330.3	39337.9	39350.6	39330.3
26	39362.9	39370.5	39368.1	39363.3	39360.0	39360.0	39351.2	39336.1	39316.8	39314.8	39319.6	39323.6	39326.1	39323.7	39322.1	39322.8	39324.6	39325.3	39327.8	39326.8	39326.4	39330.8	39338.4	39350.3	39337.2
27	39364.0	39382.9	39388.9	39385.9	39383.3	39383.3	39373.8	39358.6	39325.1	39319.1	39312.3	39314.3	39320.7	39312.8	39308.6	39300.0	39298.8	39299.0	39300.2	39302.4	39307.0	39308.3	39310.7	39315.5	39332.3
28	39325.3	39333.7	39338.9	39330.2	39321.3	39321.3	39311.8	39296.6	39289.1	39291.5	39301.1	39309.2	39308.4	39305.4	39304.6	39304.9	39306.7	39302.9	39308.3	39312.6	39315.2	39318.6	39326.8	39336.9	39313.4
29	39355.8	39371.8	39380.2	39389.8	39381.0	39380.9	39375.9	39358.6	39326.5	39322.0	39324.3	39326.3	39326.3	39325.6	39325.1	39325.9	39326.0	39324.0	39327.0	39324.6	39330.8	39340.8	39347.7	39361.3	39344.9
30	39377.8	39392.5	39397.0	39390.3	39380.6	39380.6	39364.4	39356.9	39334.9	39330.7	39328.3	39329.3	39324.5	39323.4	39319.7	39323.4	39326.3	39328.5	39327.7	39327.5	39327.9	39327.7	39330.3	39337.8	39345.3
31	39351.3	39370.0	39379.6	39372.9	39363.2	39353.1	39339.5	39326.9	39315.2	39310.0	39307.9	39308.1	39306.9	39308.1	39311.2	39313.8	39322.2	39324.7	39325.7	39328.4	39329.0	39332.6	39338.3	39344.9	39332.6
HOURLY MEANS	39357.6	39368.7	39373.5	39373.3	39368.1	39363.4	39351.4	39340.9	39327.8	39325.1	39325.1	39325.4	39323.9	39322.5	39321.9	39321.7	39322.9	39324.6	39325.8	39327.1	39329.5	39331.8	39338.1	39346.6	39339.0

Tabel 71 Nilai Variasi harian komponen Y – east (nT) Agustus 2021

Tondano Magnetic Observatory																							Agustus 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	330.0	317.6	315.1	312.1	320.1	335.5	348.2	353.2	352.8	351.0	345.5	342.0	341.8	341.3	341.4	341.7	342.6	343.3	344.8	344.9	347.1	351.1	360.4	355.7	340.8
2	348.0	345.8	336.6	327.2	326.1	334.1	347.0	354.4	353.0	348.4	343.5	340.1	339.0	338.1	339.4	339.4	345.1	352.0	351.9	353.5	348.6	348.4	355.0	343.2	344.1
3	331.9	326.2	322.3	316.5	315.2	319.0	334.6	347.8	350.8	352.5	345.2	342.4	341.9	338.5	337.1	336.7	336.8	338.3	339.2	340.5	342.8	346.9	350.5	344.8	337.4
4	333.4	321.0	322.9	323.9	326.3	333.7	339.7	340.9	343.9	344.6	342.3	340.7	337.9	338.0	338.7	339.7	341.2	343.6	344.6	345.6	346.2	347.0	350.8	349.1	339.0
5	343.9	338.1	340.3	339.0	337.2	341.9	344.4	347.5	349.4	350.3	346.0	344.3	342.9	341.7	341.1	341.8	342.3	343.7	345.9	347.0	348.4	353.3	360.6	354.3	345.2
6	340.6	332.1	330.6	324.5	323.1	325.5	332.7	339.1	343.4	347.7	342.1	340.2	340.1	340.2	339.1	340.4	340.5	343.5	343.7	346.7	348.7	350.2	351.8	333.8	339.2
7	316.6	310.3	303.0	311.2	322.7	333.5	345.3	355.2	355.6	352.4	341.7	337.5	336.8	335.0	337.0	337.9	339.6	342.5	343.8	344.3	344.3	347.7	354.9	347.4	337.3
8	334.3	327.5	320.5	318.7	323.4	332.8	341.9	347.5	350.9	350.8	344.1	342.7	341.6	340.5	340.0	339.3	341.1	341.6	342.3	342.7	343.8	348.4	356.7	348.8	340.1
9	337.2	322.4	313.6	310.2	316.8	326.2	337.3	347.6	353.8	353.0	344.9	341.4	340.8	340.9	340.4	341.3	342.7	344.2	345.0	346.0	347.7	352.5	356.7	350.4	339.7
10	339.8	334.3	328.1	332.3	333.7	336.0	344.1	350.7	352.2	350.8	344.8	342.4	341.0	339.1	340.1	341.0	342.3	343.6	343.7	343.5	344.9	350.2	352.4	347.8	342.4
11	335.8	321.6	307.5	297.1	303.1	324.3	337.5	349.2	351.7	351.1	345.7	343.0	341.3	341.1	341.8	342.6	343.1	343.5	344.0	344.5	345.6	351.6	360.7	353.4	338.4
12	338.5	324.9	308.5	309.1	313.2	315.8	321.2	337.4	346.0	347.4	343.6	342.0	341.2	341.9	341.0	340.9	340.5	343.0	344.3	345.1	345.5	349.6	356.4	355.7	337.2
13	346.2	333.7	329.6	323.2	325.4	330.0	335.8	340.0	342.0	345.9	344.1	341.1	339.5	339.3	339.3	339.4	339.5	338.7	341.1	340.7	341.3	343.8	351.3	349.5	339.2
14	339.8	324.5	314.7	312.6	326.8	340.4	346.7	347.6	346.0	345.5	341.4	340.6	340.5	340.3	339.3	339.1	339.0	339.8	340.7	340.8	343.0	343.4	348.3	344.7	338.6
15	337.8	332.8	328.3	328.8	331.9	335.2	350.4	354.9	354.3	350.8	346.4	343.9	341.1	339.2	338.1	338.6	339.3	340.1	340.3	340.1	341.4	342.2	349.8	347.7	341.4
16	337.2	325.3	315.3	312.6	321.8	329.4	339.4	339.4	345.9	349.7	344.9	342.2	342.2	339.7	339.0	338.3	337.5	337.3	338.9	338.3	338.4	342.6	351.2	349.3	337.3
17	344.2	338.6	330.8	327.5	333.2	341.9	350.2	350.2	351.6	351.5	346.1	343.4	339.9	339.4	338.5	337.8	338.6	338.8	338.9	339.3	340.3	342.9	353.7	350.4	342.0
18	338.9	329.5	327.2	324.5	324.4	329.6	329.5	332.8	343.5	348.7	344.4	341.3	340.9	340.7	339.7	338.7	338.5	338.1	338.5	339.1	339.6	342.2	348.2	336.9	337.3
19	329.8	331.3	331.4	334.7	334.7	336.6	336.3	338.9	343.4	345.7	343.2	341.6	340.5	338.6	338.1	336.8	337.0	338.5	340.7	339.9	341.5	342.5	348.7	339.6	338.8
20	332.1	320.9	320.9	324.3	324.3	328.4	340.1	346.0	351.2	354.4	347.3	344.4	341.4	340.0	337.3	336.3	337.5	337.3	336.7	337.1	339.2	346.9	362.6	356.9	339.3
21	342.0	327.8	314.6	301.7	301.6	299.0	309.6	325.3	351.0	350.3	343.2	340.2	340.3	339.9	338.4	338.1	338.8	339.3	341.5	341.5	343.2	349.6	359.4	356.1	334.7
22	344.2	329.6	318.0	316.2	316.1	319.7	323.6	333.3	346.5	348.7	343.6	341.2	340.1	339.2	338.6	338.8	340.2	340.7	340.9	340.9	342.0	348.0	363.7	361.0	338.1
23	344.8	331.2	322.9	317.8	317.8	319.4	333.4	343.4	353.8	351.5	344.6	342.0	341.4	340.9	339.9	340.4	340.1	340.4	340.7	341.1	343.5	349.3	357.8	347.6	339.4
24	332.3	317.7	309.0	306.5	306.4	309.4	315.2	327.0	341.2	345.1	342.6	339.5	338.8	338.0	338.1	339.2	340.4	342.3	341.8	340.4	342.9	347.7	353.7	350.0	333.5
25	338.2	328.3	320.2	314.5	314.3	313.3	315.6	323.4	341.2	345.2	341.0	338.7	338.1	338.8	337.5	337.0	337.3	337.3	336.9	336.9	339.1	345.5	356.8	358.4	334.7
26	350.9	341.7	333.5	325.2	325.2	320.7	326.4	331.2	344.5	347.5	343.8	339.8	336.9	335.9	334.9	334.7	335.7	335.8	336.4	335.5	336.5	342.1	355.1	354.7	337.7
27	346.2	336.2	325.1	316.5	316.5	313.1	317.2	329.3	351.1	352.1	348.6	342.0	339.1	337.1	336.7	334.4	325.4	322.3	324.7	323.3	327.0	337.4	352.1	347.4	333.4
28	335.6	329.8	322.6	316.2	316.1	320.3	330.0	341.6	353.5	352.9	349.9	343.5	338.3	336.8	334.9	333.3	331.7	333.3	333.4	336.2	338.0	346.1	360.3	349.0	336.8
29	333.8	321.3	304.0	293.6	293.5	302.5	316.5	330.6	347.4	348.5	343.8	340.6	339.4	338.2	336.9	336.9	337.4	338.3	337.0	338.4	343.2	352.1	360.7	353.9	332.8
30	340.7	328.3	321.2	315.6	315.6	312.1	317.9	331.3	345.4	343.9	340.2	339.1	337.4	337.3	337.5	337.2	337.6	338.0	338.2	340.9	343.4	350.1	357.1	349.6	335.6
31	337.4	328.7	322.6	314.3	318.8	328.7	338.5	345.4	347.6	346.7	342.0	338.7	337.1	336.1	335.5	335.4	336.3	337.6	339.1	340.0	341.6	346.3	353.4	346.0	337.2
HOURLY MEANS	338.1	328.3	321.3	317.7	320.2	325.4	333.8	341.4	348.5	349.2	344.2	341.4	340.0	339.1	338.6	338.5	338.9	339.9	340.6	341.1	342.5	347.0	355.2	349.5	338.3

Tabel 72 Nilai Variasi harian komponen D – *declination* (menit) Agustus 2021

Tondano Magnetic Observatory

Agustus 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	28.84	27.75	27.54	27.27	27.97	29.31	30.44	30.88	30.84	30.69	30.21	29.90	29.89	29.85	29.85	29.88	29.96	30.02	30.15	30.15	30.35	30.70	31.50	31.08	29.79
2	30.39	30.19	29.38	28.57	28.47	29.18	30.32	30.98	30.86	30.46	30.03	29.73	29.64	29.55	29.68	29.68	30.19	30.78	30.79	30.93	30.48	30.47	31.03	30.00	30.07
3	29.01	28.51	28.18	27.67	27.55	27.89	29.27	30.43	30.70	30.85	30.21	29.96	29.92	29.61	29.49	29.45	29.47	29.60	29.67	29.79	29.99	30.34	30.65	30.15	29.52
4	29.14	28.06	28.23	28.31	28.52	29.17	29.70	29.80	30.07	30.14	29.94	29.80	29.55	29.56	29.62	29.71	29.84	30.04	30.14	30.22	30.27	30.34	30.67	30.52	29.64
5	30.06	29.54	29.73	29.61	29.46	29.88	30.11	30.38	30.55	30.63	30.26	30.11	29.99	29.87	29.83	29.89	29.93	30.05	30.25	30.34	30.46	30.88	31.51	30.96	30.18
6	29.76	29.00	28.87	28.33	28.21	28.43	29.07	29.64	30.02	30.40	29.91	29.74	29.74	29.75	29.65	29.77	29.78	30.04	30.06	30.33	30.50	30.63	30.77	29.19	29.65
7	27.68	27.12	26.49	27.20	28.21	29.17	30.21	31.08	31.11	30.83	29.89	29.53	29.47	29.31	29.49	29.56	29.71	29.96	30.07	30.11	30.12	30.41	31.04	30.38	29.51
8	29.22	28.63	28.01	27.84	28.26	29.09	29.89	30.38	30.69	30.68	30.09	29.97	29.88	29.78	29.74	29.68	29.83	29.87	29.93	29.97	30.06	30.47	31.18	30.49	29.73
9	29.47	28.17	27.39	27.10	27.68	28.50	29.48	30.39	30.93	30.86	30.16	29.85	29.80	29.80	29.76	29.84	29.96	30.09	30.16	30.25	30.39	30.81	31.17	30.61	29.69
10	29.68	29.18	28.64	29.00	29.14	29.35	30.07	30.65	30.79	30.68	30.15	29.94	29.82	29.65	29.75	29.82	29.93	30.04	30.05	30.04	30.16	30.61	30.81	30.41	29.93
11	29.35	28.09	26.86	25.95	26.47	28.34	29.50	30.53	30.75	30.70	30.23	29.99	29.85	29.83	29.89	29.96	30.00	30.03	30.08	30.13	30.22	30.75	31.53	30.89	29.58
12	29.58	28.38	26.94	26.99	27.35	27.58	28.06	29.48	30.25	30.37	30.04	29.90	29.83	29.89	29.82	29.81	29.77	30.00	30.11	30.17	30.20	30.55	31.14	31.08	29.47
13	30.24	29.14	28.77	28.22	28.42	28.82	29.34	29.70	29.89	30.24	30.09	29.82	29.68	29.66	29.67	29.68	29.69	29.62	29.83	29.80	29.85	30.06	30.71	30.55	29.64
14	29.70	28.35	27.48	27.30	28.54	29.74	30.30	30.38	30.25	30.21	29.85	29.77	29.77	29.75	29.66	29.64	29.64	29.71	29.79	29.80	29.99	30.03	30.45	30.13	29.59
15	29.52	29.07	28.67	28.71	28.98	29.28	30.63	31.03	31.00	30.69	30.30	30.08	29.84	29.67	29.58	29.62	29.67	29.74	29.76	29.74	29.85	29.93	30.60	30.41	29.85
16	29.49	28.43	27.55	27.32	28.12	28.78	29.66	29.66	30.25	30.59	30.16	29.93	29.93	29.72	29.66	29.60	29.52	29.50	29.64	29.59	29.60	29.97	30.71	30.53	29.50
17	30.08	29.58	28.89	28.60	29.10	29.87	30.60	30.60	30.74	30.74	30.27	30.03	29.73	29.68	29.60	29.54	29.61	29.62	29.63	29.67	29.75	29.98	30.93	30.63	29.90
18	29.62	28.79	28.59	28.35	28.35	28.81	28.80	29.10	30.04	30.50	30.12	29.85	29.82	29.80	29.71	29.62	29.60	29.57	29.60	29.66	29.69	29.93	30.45	29.45	29.49
19	28.82	28.94	28.95	29.23	29.23	29.40	29.38	29.61	30.03	30.22	30.01	29.88	29.79	29.62	29.58	29.47	29.49	29.61	29.80	29.73	29.87	29.96	30.49	29.69	29.62
20	29.02	28.04	28.04	28.33	28.33	28.69	29.72	30.25	30.72	31.00	30.38	30.14	29.88	29.76	29.52	29.44	29.53	29.51	29.46	29.48	29.67	30.34	31.70	31.19	29.67
21	29.87	28.63	27.48	26.35	26.35	26.12	27.05	28.43	30.68	30.63	30.00	29.75	29.76	29.73	29.60	29.57	29.63	29.67	29.86	29.86	30.01	30.57	31.41	31.11	29.25
22	30.06	28.79	27.77	27.62	27.62	27.93	28.28	29.13	30.29	30.48	30.04	29.83	29.73	29.65	29.60	29.62	29.75	29.78	29.80	29.80	29.89	30.41	31.78	31.54	29.55
23	30.12	28.92	28.20	27.75	27.75	27.89	29.12	30.00	30.93	30.73	30.12	29.89	29.84	29.80	29.71	29.76	29.73	29.75	29.79	29.82	30.03	30.53	31.27	30.37	29.66
24	29.02	27.73	26.96	26.75	26.75	27.01	27.52	28.56	29.83	30.18	29.96	29.69	29.63	29.56	29.56	29.66	29.76	29.93	29.88	29.76	29.97	30.39	30.92	30.58	29.15
25	29.54	28.66	27.95	27.47	27.47	27.38	27.60	28.31	29.85	30.20	29.83	29.63	29.58	29.64	29.53	29.48	29.51	29.50	29.46	29.47	29.66	30.21	31.19	31.33	29.27
26	30.65	29.85	29.13	28.41	28.41	28.02	28.52	28.96	30.13	30.40	30.07	29.72	29.47	29.38	29.29	29.27	29.36	29.37	29.42	29.34	29.43	29.91	31.04	31.00	29.52
27	30.25	29.36	28.39	27.64	27.64	27.34	27.71	28.78	30.70	30.80	30.50	29.91	29.66	29.49	29.46	29.27	28.48	28.20	28.41	28.29	28.61	29.52	30.80	30.39	29.15
28	29.35	28.83	28.20	27.65	27.65	28.02	28.87	29.89	30.94	30.89	30.62	30.05	29.60	29.47	29.31	29.16	29.02	29.16	29.17	29.42	29.56	30.27	31.51	30.51	29.46
29	29.16	28.07	26.55	25.63	25.63	26.42	27.64	28.89	30.38	30.48	30.06	29.78	29.68	29.57	29.47	29.46	29.50	29.59	29.47	29.60	30.01	30.78	31.53	30.92	29.09
30	29.75	28.66	28.04	27.56	27.56	27.26	27.77	28.95	30.20	30.08	29.75	29.65	29.50	29.50	29.52	29.49	29.52	29.55	29.58	29.81	30.03	30.62	31.22	30.56	29.34
31	29.48	28.72	28.17	27.45	27.86	28.73	29.59	30.20	30.41	30.33	29.92	29.63	29.49	29.41	29.36	29.34	29.42	29.52	29.65	29.74	29.87	30.28	30.90	30.24	29.49
HOURLY MEANS	29.55	28.68	28.07	27.75	27.97	28.43	29.17	29.84	30.48	30.54	30.10	29.85	29.73	29.66	29.61	29.60	29.64	29.72	29.79	29.83	29.95	30.34	31.05	30.54	29.58

Tabel 73 Nilai variasi harian komponen I – *inclination* (derajat) Agustus 2021

Tondano Magnetic Observatory

Agustus 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-12.90	-12.90	-12.90	-12.90	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.90
2	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	-12.88	-12.89	-12.89	-12.90	-12.89	-12.89	-12.89	-12.90	-12.90	-12.91	-12.92	-12.90	-12.92	-12.91	-12.90	-12.91	-12.90	-12.90
3	-12.90	-12.90	-12.90	-12.89	-12.88	-12.89	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.91	-12.90	-12.91
4	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.90	-12.90
5	-12.89	-12.88	-12.89	-12.88	-12.88	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.90
6	-12.88	-12.88	-12.88	-12.88	-12.88	-12.89	-12.90	-12.90	-12.91	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.90
7	-12.89	-12.89	-12.88	-12.89	-12.89	-12.89	-12.90	-12.91	-12.91	-12.91	-12.90	-12.90	-12.91	-12.91	-12.91	-12.92	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.91	-12.90
8	-12.90	-12.90	-12.88	-12.87	-12.87	-12.88	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.91	-12.90
9	-12.90	-12.89	-12.89	-12.89	-12.89	-12.88	-12.88	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.90	-12.90
10	-12.88	-12.88	-12.86	-12.87	-12.87	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.91	-12.91	-12.91	-12.91	-12.90
11	-12.89	-12.89	-12.88	-12.86	-12.85	-12.86	-12.87	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.92	-12.91	-12.89
12	-12.89	-12.87	-12.86	-12.87	-12.88	-12.88	-12.88	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.90	-12.91	-12.90	-12.90	-12.89
13	-12.89	-12.88	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.89
14	-12.89	-12.89	-12.88	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.90
15	-12.90	-12.88	-12.87	-12.87	-12.85	-12.85	-12.87	-12.88	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.91	-12.91	-12.91	-12.89
16	-12.91	-12.91	-12.89	-12.88	-12.88	-12.88	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.91	-12.90
17	-12.90	-12.89	-12.88	-12.87	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.92	-12.91	-12.89
18	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.90	-12.91	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.91
19	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.92	-12.92	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.91
20	-12.89	-12.88	-12.88	-12.88	-12.88	-12.88	-12.89	-12.90	-12.91	-12.90	-12.90	-12.90	-12.91	-12.91	-12.92	-12.92	-12.92	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.91	-12.90
21	-12.89	-12.88	-12.87	-12.87	-12.87	-12.88	-12.89	-12.90	-12.90	-12.90	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.90	-12.90	-12.91	-12.91	-12.90	-12.90
22	-12.89	-12.87	-12.87	-12.87	-12.87	-12.87	-12.88	-12.89	-12.89	-12.90	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.90	-12.89
23	-12.89	-12.88	-12.88	-12.86	-12.86	-12.86	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.90	-12.89
24	-12.89	-12.87	-12.86	-12.86	-12.86	-12.87	-12.89	-12.90	-12.91	-12.90	-12.91	-12.91	-12.91	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89	-12.89
25	-12.87	-12.86	-12.86	-12.86	-12.87	-12.88	-12.89	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90
26	-12.89	-12.88	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.90	-12.91	-12.91	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.90
27	-12.90	-12.88	-12.86	-12.86	-12.86	-12.87	-12.88	-12.89	-12.90	-12.91	-12.91	-12.90	-12.90	-12.90	-12.91	-12.91	-12.90	-12.91	-12.91	-12.91	-12.92	-12.92	-12.93	-12.92	-12.90
28	-12.90	-12.89	-12.88	-12.88	-12.88	-12.89	-12.90	-12.90	-12.91	-12.91	-12.91	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.90
29	-12.90	-12.89	-12.88	-12.87	-12.88	-12.88	-12.88	-12.88	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.90	-12.90
30	-12.88	-12.87	-12.86	-12.87	-12.87	-12.87	-12.88	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.92	-12.91	-12.89
31	-12.90	-12.90	-12.88	-12.87	-12.88	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90
HOURLY MEANS	-12.89	-12.88	-12.88	-12.88	-12.88	-12.88	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90

2. Gangguan badai magnet

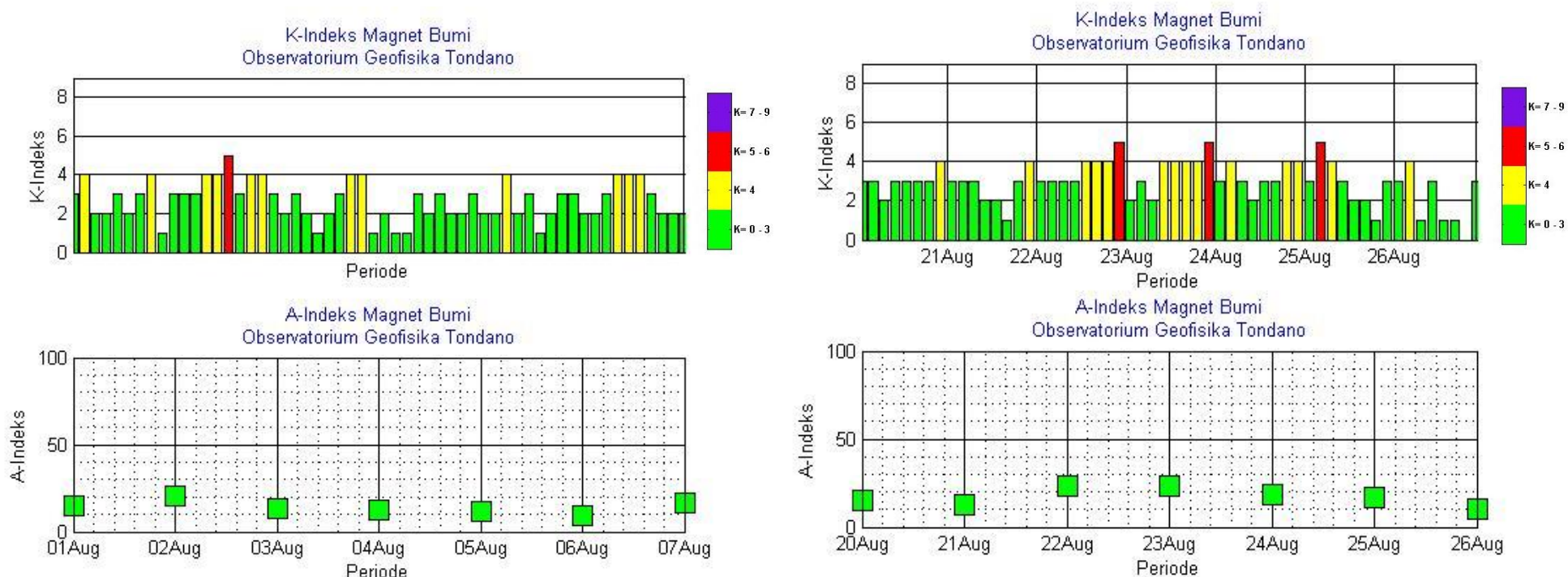
Tabel 74 Monitoring waktu gangguan pada pengamatan magnet bumi Agustus 2021

No	Kejadian rekaman magnet bumi			Waktu			Durasi gangguan	Keterangan
	Tanggal	Bulan	Tahun	Jam	Menit	Detik		
1	1	8	2021					
2	2	8	2021					
3	3	8	2021					
4	4	8	2021					
5	5	8	2021					
6	6	8	2021					
7	7	8	2021					
8	8	8	2021					
9	9	8	2021					
10	10	8	2021					
11	11	8	2021					
12	12	8	2021					
13	13	8	2021					
14	14	8	2021					
15	15	8	2021					
16	16	8	2021					
17	17	8	2021					
18	18	8	2021					
19	19	8	2021					
20	20	8	2021					
21	21	8	2021					
22	22	8	2021					
23	23	8	2021					
24	24	8	2021					
25	25	8	2021					
26	26	8	2021					
27	27	8	2021					
28	28	8	2021					
29	29	8	2021					
30	30	8	2021					
31	31	8	2021					

Tabel 75 Hasil analisa K-indeks dan A-indeks Agustus 2021

Tanggal	K-1	K-2	K-3	K-4	K-5	K-6	K-7	K-8	A Indeks	Keterangan
1	3	4	2	2	3	2	3	4	15.000	Tenang
2	1	3	3	3	4	4	5	3	20.625	Tenang
3	4	4	3	2	3	2	1	2	13.500	Tenang
4	3	4	4	1	2	1	1	3	12.500	Tenang
5	2	3	2	2	3	2	2	4	11.500	Tenang
6	2	3	1	2	3	3	2	2	9.500	Tenang
7	3	4	4	4	3	2	2	2	16.500	Tenang
8	2	3	2	1	2	1	1	3	7.500	Tenang
9	3	3	3	2	3	4	3	5	19.625	Tenang
10	3	3	2	2	2	1	2	3	9.500	Tenang
11	2	3	3	1	2	1	1	3	8.500	Tenang
12	2	4	3	3	3	3	3	5	19.625	Tenang
13	2	3	4	3	4	2	0	1	12.625	Tenang
14	3	3	1	3	4	3	2	2	13.000	Tenang
15	3	3	4	2	2	1	2	3	12.000	Tenang
16	2	5	2	2	2	2	1	2	11.625	Tenang
17	1	3	1	2	2	1	2	2	6.500	Tenang
18	4	3	2	2	3	2	1	2	11.000	Tenang
19	1	3	1	3	1	1	2	3	8.000	Tenang
20	3	3	2	3	3	3	3	4	15.500	Tenang
21	3	3	3	2	2	1	3	4	13.000	Tenang
22	3	3	3	3	4	4	4	5	23.625	Tenang
23	2	3	2	4	4	4	4	5	23.125	Tenang
24	3	4	3	2	3	3	4	4	18.500	Tenang
25	3	5	4	3	2	2	1	3	17.125	Tenang
26	3	4	1	3	1	1	0	3	10.125	Tenang
27	3	3	3	2	4	3	3	2	14.500	Tenang
28	3	2	3	4	1	2	2	3	12.000	Tenang
29	3	3	3	2	2	2	3	4	13.500	Tenang
30	2	2	2	1	2	0	0	1	4.250	Tenang
31	3	2	1	1	2	2	1	2	6.500	Tenang

Gambar 29 Plot hasil analisa K-indeks dan A-indeks saat terjadi gangguan magnet bumi di bulan Agustus 2021



Tabel 77 Nilai variasi harian komponen Z – vertical (nT) September 2021

Tondano Magnetic Observatory

September 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-9008.8	-9005.6	-9004.1	-9000.5	-9001.6	-9001.0	-9000.8	-9002.1	-9002.1	-8999.2	-8999.9	-9001.9	-9002.4	-9002.5	-9003.7	-9002.8	-9004.1	-9004.4	-9004.6	-9005.6	-9007.0	-9010.2	-9011.3	-9002.8	-9003.7
2	-8996.5	-8990.2	-8985.7	-8987.6	-8992.5	-8997.7	-9000.6	-9000.8	-9000.8	-8998.3	-8998.2	-8999.8	-9002.0	-9003.7	-9002.3	-9004.2	-9003.5	-9004.1	-9005.5	-9008.0	-9011.0	-9013.0	-9016.1	-9014.9	-9001.5
3	-9008.2	-8999.3	-8995.4	-8988.4	-8989.0	-8988.7	-8993.1	-8994.3	-8994.3	-8994.1	-8992.3	-9002.7	-9001.4	-9003.3	-9004.8	-9003.7	-9004.2	-9004.4	-9006.2	-9006.9	-9006.2	-9008.4	-9011.6	-9007.5	-9000.4
4	-8998.5	-8994.9	-8988.1	-8988.5	-8991.2	-8994.4	-8998.7	-9000.4	-9000.4	-8998.4	-8999.6	-9002.7	-9001.4	-9003.2	-9003.2	-9003.7	-9004.8	-9005.6	-9005.4	-9005.2	-9006.8	-9006.7	-9011.3	-9012.1	-9001.0
5	-9005.0	-9000.2	-8996.2	-8992.1	-8992.5	-8996.3	-9003.7	-9006.0	-9006.0	-9004.5	-9002.7	-9003.7	-9004.6	-9004.1	-9007.8	-9007.1	-9007.3	-9006.3	-9007.3	-9007.4	-9008.0	-9009.1	-9016.3	-9016.3	-9004.6
6	-9009.6	-9004.7	-8999.1	-8998.6	-9004.3	-9014.8	-9018.3	-9016.3	-9016.3	-9006.6	-9005.3	-9005.2	-9004.8	-9004.5	-9003.9	-9004.5	-9006.1	-9006.9	-9007.9	-9007.6	-9006.2	-9009.2	-9013.5	-9009.9	-9007.7
7	-9001.3	-8992.2	-8985.4	-8984.7	-8988.1	-8995.7	-9002.0	-9004.0	-9004.0	-9004.2	-9004.8	-9004.2	-9004.4	-9003.3	-9005.5	-9004.1	-9001.9	-9001.0	-9006.1	-9006.4	-9006.3	-9007.7	-9010.0	-9005.4	-9001.3
8	-9003.5	-8998.3	-8990.3	-8985.4	-8987.9	-8992.6	-9000.0	-9004.9	-9004.9	-9001.7	-9002.5	-9004.5	-9006.5	-9006.3	-9006.8	-9004.7	-9006.7	-9004.6	-9005.9	-9005.3	-9006.0	-9007.8	-9013.0	-9011.9	-9002.6
9	-9005.8	-8997.1	-8988.8	-8984.3	-8981.9	-8988.5	-8999.3	-9006.4	-9006.4	-9008.6	-9006.4	-9005.1	-9004.9	-9005.3	-9005.1	-9005.4	-9005.1	-9005.3	-9007.4	-9006.6	-9008.4	-9010.8	-9021.0	-9024.7	-9003.7
10	-9020.5	-9011.5	-9007.9	-8998.1	-8991.2	-8984.6	-8986.9	-8994.1	-8994.1	-9001.1	-9000.8	-9003.2	-9002.7	-9002.8	-9003.0	-9003.7	-9003.4	-9002.3	-9003.4	-9003.5	-9003.7	-9007.1	-9014.8	-9008.9	-9002.2
11	-9007.1	-9002.0	-8994.3	-8992.3	-8993.5	-8995.5	-9001.4	-9003.2	-9003.2	-9001.1	-8999.1	-8998.6	-9000.5	-9000.3	-9000.6	-9002.9	-9003.8	-9004.5	-9004.2	-9004.6	-9007.2	-9007.0	-9011.4	-9011.0	-9002.0
12	-9001.5	-8988.1	-8982.4	-8985.9	-8995.5	-9001.4	-9004.2	-9007.2	-9007.2	-9003.2	-9001.1	-8999.6	-9003.3	-9005.8	-9004.6	-9005.3	-9005.0	-9007.5	-9006.2	-9008.2	-9009.0	-9009.9	-9012.1	-9011.7	-9002.7
13	-9007.4	-9002.3	-9001.4	-8996.4	-8997.6	-8997.6	-9003.2	-9002.4	-9002.4	-9000.9	-9001.2	-9002.0	-9003.1	-9002.4	-9005.2	-9004.0	-9002.4	-9005.3	-9004.7	-9004.4	-9006.6	-9008.7	-9013.9	-9009.7	-9003.6
14	-9004.6	-9000.5	-8997.4	-8994.6	-8992.7	-8992.2	-8992.7	-8995.3	-8995.3	-9000.5	-9000.8	-9001.0	-9000.1	-9000.2	-9002.1	-9002.7	-9002.6	-9004.1	-9006.2	-9004.1	-9006.0	-9007.5	-9011.6	-9012.0	-9001.1
15	-9005.9	-9000.3	-8997.1	-8993.0	-8994.2	-8994.5	-8997.6	-8999.7	-9001.5	-9001.6	-9001.6	-9001.4	-9004.2	-9004.1	-9003.4	-9002.7	-9002.9	-9004.1	-9003.8	-9005.0	-9005.4	-9007.6	-9011.0	-9005.4	-9002.0
16	-9002.7	-9001.5	-8996.3	-8987.8	-8988.5	-8990.1	-8997.4	-8997.4	-8997.4	-9000.2	-9000.3	-9001.7	-9003.0	-9004.4	-9004.4	-9005.0	-9005.2	-9004.3	-9004.9	-9006.2	-9005.7	-9005.4	-9007.8	-9006.1	-9001.0
17	-8996.8	-8990.2	-8992.9	-8988.2	-8980.3	-8984.3	-8989.7	-8989.7	-8989.7	-8998.9	-8998.8	-8998.3	-9001.2	-9004.1	-9005.7	-9002.2	-9005.9	-9004.4	-9002.5	-9001.4	-9010.8	-9010.6	-9012.7	-9009.4	-8998.7
18	-9002.1	-8994.5	-8987.3	-8976.5	-8976.5	-8979.0	-8984.6	-8993.5	-8993.5	-8999.4	-8999.7	-9002.1	-9002.8	-9003.2	-9004.5	-9004.6	-9005.6	-9005.6	-9005.8	-9006.1	-9007.4	-9009.1	-9015.7	-9016.3	-8999.0
19	-9006.1	-8991.9	-8987.9	-8985.7	-8985.7	-8988.4	-8997.5	-9004.3	-9004.3	-9002.6	-9001.0	-9001.9	-9002.3	-9002.5	-9003.0	-9003.4	-9004.3	-9004.8	-9005.1	-9006.3	-9006.8	-9007.0	-9009.3	-9006.5	-9000.8
20	-8997.5	-8987.1	-8983.9	-8982.6	-8982.6	-8986.9	-8996.8	-9000.3	-9000.3	-8999.4	-8999.2	-8999.4	-9001.3	-9001.5	-9002.1	-9003.3	-9004.1	-9004.7	-9005.2	-9004.9	-9006.2	-9007.7	-9013.4	-9012.7	-8999.3
21	-9003.2	-8992.3	-8987.1	-8987.3	-8987.3	-8989.1	-8993.5	-8998.2	-8998.2	-8996.0	-8996.7	-8997.1	-8997.1	-8998.2	-9000.4	-9001.0	-9002.2	-9007.5	-9004.1	-9005.3	-9001.9	-9009.3	-9016.6	-9009.3	-8999.1
22	-9002.1	-8996.0	-8990.8	-8984.7	-8984.7	-8983.1	-8986.7	-8992.6	-8992.6	-8997.1	-8997.5	-8998.1	-8998.1	-8997.7	-9000.0	-9003.3	-9005.3	-9005.2	-9005.2	-9004.5	-9005.2	-9007.1	-9013.5	-9012.3	-8998.5
23	-9000.1	-8988.2	-8979.1	-8977.3	-8977.3	-8980.6	-8980.0	-8994.7	-8994.7	-8999.1	-8998.8	-9000.7	-9002.5	-8999.6	-9002.6	-9002.5	-9002.6	-9004.0	-9003.5	-9006.1	-9004.7	-9006.0	-9009.5	-9007.5	-8996.7
24	-9002.3	-8991.7	-8987.2	-8982.0	-8982.0	-8982.8	-8987.7	-8992.3	-8992.3	-8999.7	-8997.7	-8998.5	-8999.3	-9000.2	-9000.0	-8999.0	-9000.6	-9001.5	-9006.6	-9006.0	-9005.5	-9006.0	-9009.2	-9005.6	-8997.3
25	-9003.4	-8996.5	-8988.8	-8986.4	-8986.4	-8987.8	-8982.6	-8982.0	-8982.0	-8995.5	-8996.9	-8998.7	-8999.2	-9000.3	-9000.9	-9001.8	-9002.3	-9002.7	-9004.5	-9003.3	-9003.4	-9006.5	-9011.4	-9009.8	-8997.2
26	-9002.4	-8991.0	-8982.5	-8979.9	-8979.9	-8983.0	-8988.6	-8993.7	-8993.7	-8997.8	-8997.3	-8998.1	-8998.8	-8998.8	-8999.7	-9000.7	-9001.9	-9002.8	-9003.3	-9004.1	-9004.3	-9005.2	-9006.9	-9006.2	-8996.7
27	-8999.4	-8991.8	-8990.1	-8988.4	-8988.4	-8988.1	-8990.4	-8996.8	-8996.8	-8996.1	-8997.0	-8996.7	-8998.8	-8999.3	-8999.7	-9001.0	-9002.5	-9004.3	-9003.2	-9004.5	-9003.8	-9001.6	-9003.8	-9002.9	-8997.7
28	-8998.9	-8993.0	-8987.0	-8989.0	-8989.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-8991.4
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HOURLY MEANS	-9003.6	-8996.2	-8991.2	-8988.1	-8988.7	-8991.1	-8995.5	-8999.0	-8999.0	-9000.2	-8999.9	-9001.0	-9001.9	-9002.3	-9003.1	-9003.3	-9003.9	-9004.5	-9005.1	-9005.5	-9006.3	-9007.9	-9012.2	-9010.0	-9000.5

Tabel 78 Nilai Variasi harian komponen F – total (nT) September 2021

Tondano Magnetic Observatory

September 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	40376.5	40391.7	40403.8	40403.9	40396.3	40380.5	40370.0	40361.3	40348.3	40339.2	40338.6	40339.4	40343.0	40342.0	40345.4	40344.5	40344.0	40345.0	40345.7	40346.0	40345.7	40349.3	40356.4	40360.3	40359.0
2	40366.7	40385.0	40399.0	40403.1	40396.1	40385.4	40374.9	40363.2	40354.9	40350.7	40348.7	40343.9	40339.1	40343.9	40341.1	40344.6	40343.7	40342.6	40342.2	40346.7	40350.5	40355.4	40361.3	40370.0	40360.5
3	40377.2	40386.4	40397.0	40401.3	40396.0	40383.3	40370.7	40358.2	40344.4	40330.4	40313.8	40326.6	40321.5	40325.6	40332.7	40334.5	40335.8	40335.7	40334.8	40336.2	40335.9	40338.5	40347.0	40352.3	40350.7
4	40361.7	40377.9	40382.1	40383.4	40380.2	40374.0	40364.0	40353.4	40342.2	40336.8	40334.8	40343.7	40340.3	40342.7	40343.0	40343.1	40346.0	40347.6	40350.0	40350.3	40353.1	40354.5	40362.8	40375.3	40356.0
5	40387.5	40399.4	40405.8	40401.7	40394.8	40381.2	40370.8	40359.9	40351.7	40344.9	40338.8	40335.9	40334.5	40330.0	40338.2	40343.8	40347.3	40346.5	40348.9	40351.1	40354.6	40356.8	40371.1	40387.2	40361.8
6	40402.7	40410.0	40411.1	40400.8	40389.3	40383.8	40378.8	40367.7	40359.7	40351.7	40351.0	40352.3	40351.6	40349.3	40344.5	40338.7	40339.4	40338.9	40343.0	40345.2	40346.5	40349.7	40361.5	40370.8	40364.1
7	40377.4	40386.5	40395.0	40397.6	40394.1	40383.1	40371.3	40358.8	40345.4	40337.6	40339.7	40343.1	40347.1	40347.8	40357.4	40362.8	40357.9	40350.9	40356.8	40362.4	40362.9	40363.2	40357.4	40354.4	40362.9
8	40366.5	40388.7	40399.8	40402.2	40396.1	40386.2	40378.0	40368.5	40348.6	40326.6	40324.5	40319.3	40321.8	40320.7	40326.6	40328.7	40336.3	40337.9	40343.3	40343.1	40340.9	40342.1	40347.1	40358.6	40352.2
9	40374.0	40385.3	40396.0	40400.3	40387.3	40369.3	40356.1	40345.1	40337.2	40334.6	40333.5	40332.0	40331.5	40334.6	40335.5	40339.2	40340.0	40340.0	40344.5	40345.0	40346.8	40347.5	40354.5	40365.1	40353.1
10	40377.9	40388.2	40403.9	40408.1	40399.9	40379.1	40357.5	40348.1	40341.8	40342.6	40344.9	40349.5	40349.0	40349.3	40351.7	40356.7	40360.2	40357.9	40356.8	40362.2	40369.3	40369.7	40381.6	40370.8	40365.7
11	40348.8	40355.8	40371.7	40386.7	40393.9	40391.6	40382.2	40367.4	40349.7	40346.3	40348.0	40343.4	40340.7	40339.1	40339.2	40342.4	40348.4	40351.7	40353.0	40352.0	40354.7	40351.2	40355.5	40373.8	40357.8
12	40390.6	40391.3	40390.2	40391.0	40392.5	40385.8	40369.4	40360.6	40353.0	40350.3	40340.6	40324.3	40322.3	40325.1	40327.2	40331.0	40333.6	40345.2	40346.9	40354.0	40361.5	40367.8	40369.2	40378.3	40358.4
13	40388.1	40399.2	40415.7	40416.3	40407.8	40392.8	40379.0	40352.8	40344.9	40344.3	40342.2	40339.5	40338.2	40331.7	40338.1	40338.0	40336.7	40341.7	40345.0	40343.7	40346.7	40347.9	40360.2	40366.1	40360.7
14	40373.1	40383.1	40393.8	40395.9	40389.0	40377.2	40362.2	40346.9	40335.1	40335.8	40341.1	40342.7	40338.0	40336.7	40337.4	40340.5	40339.2	40339.9	40344.0	40341.4	40346.1	40348.9	40355.5	40366.2	40354.6
15	40378.6	40386.6	40393.8	40388.4	40376.9	40363.4	40352.9	40347.9	40345.3	40343.5	40342.7	40338.2	40340.9	40342.8	40344.6	40344.9	40343.8	40345.3	40346.0	40348.6	40350.5	40352.3	40356.0	40358.8	40355.5
16	40367.4	40383.1	40394.2	40393.8	40389.7	40376.1	40369.0	40369.0	40354.3	40355.8	40355.7	40355.6	40354.4	40353.7	40351.0	40352.1	40351.1	40350.6	40349.2	40352.1	40353.8	40353.4	40354.8	40361.8	40362.6
17	40370.2	40378.9	40399.0	40399.4	40381.3	40367.1	40360.8	40360.8	40347.6	40355.9	40351.4	40333.5	40318.1	40321.8	40331.6	40333.1	40347.4	40350.0	40349.2	40332.3	40323.6	40316.8	40311.1	40319.4	40348.3
18	40335.6	40358.6	40385.4	40381.9	40369.1	40369.7	40347.9	40328.1	40317.9	40313.0	40313.5	40325.1	40330.0	40329.9	40331.4	40332.3	40334.3	40335.1	40336.2	40336.2	40337.9	40340.2	40344.1	40355.2	40341.2
19	40366.4	40376.3	40389.0	40389.9	40382.0	40382.5	40370.2	40356.1	40337.4	40339.4	40338.5	40338.9	40339.9	40340.1	40339.6	40339.1	40339.7	40339.9	40340.0	40341.9	40343.6	40345.0	40349.2	40357.8	40353.4
20	40368.3	40376.7	40385.5	40389.9	40387.9	40388.8	40383.1	40371.7	40350.2	40348.6	40348.9	40348.3	40348.7	40348.6	40348.8	40347.5	40347.5	40349.9	40351.4	40351.8	40354.1	40354.9	40358.2	40365.0	40361.4
21	40370.2	40382.4	40396.8	40408.2	40405.3	40405.7	40397.8	40384.8	40364.2	40361.4	40358.7	40356.2	40351.1	40346.5	40345.6	40341.5	40337.4	40359.8	40355.4	40357.4	40351.1	40350.3	40360.5	40365.0	40367.2
22	40369.8	40364.9	40378.6	40382.0	40374.1	40373.7	40364.3	40353.2	40310.1	40310.9	40320.2	40324.6	40323.6	40316.7	40314.1	40317.5	40323.9	40329.7	40334.8	40337.7	40340.2	40340.5	40345.7	40359.2	40342.1
23	40375.0	40381.8	40393.7	40396.1	40399.3	40400.0	40377.3	40367.2	40335.0	40340.1	40341.3	40344.1	40352.7	40346.4	40352.7	40355.7	40356.2	40357.1	40354.3	40359.6	40357.6	40357.2	40361.4	40371.1	40363.9
24	40378.0	40400.4	40409.4	40418.5	40406.3	40406.5	40390.8	40374.7	40348.0	40352.8	40351.3	40352.4	40352.5	40352.1	40350.3	40342.7	40344.2	40333.4	40340.2	40343.8	40345.3	40345.6	40349.5	40355.4	40364.3
25	40367.1	40379.5	40387.5	40386.7	40390.5	40390.8	40376.4	40359.1	40339.8	40336.4	40338.7	40341.0	40340.4	40341.2	40343.0	40345.8	40345.4	40345.5	40350.2	40349.7	40348.4	40348.1	40348.1	40354.6	40356.4
26	40368.3	40384.9	40400.0	40413.0	40406.4	40407.1	40391.0	40373.0	40349.9	40348.2	40347.4	40348.3	40349.0	40347.6	40346.5	40346.6	40348.9	40350.4	40351.8	40353.5	40354.7	40357.8	40363.8	40374.2	40365.9
27	40386.1	40399.7	40411.3	40417.6	40410.6	40410.6	40398.0	40387.7	40365.7	40354.4	40353.1	40351.1	40350.6	40350.8	40350.9	40352.6	40354.9	40362.6	40365.2	40371.2	40378.3	40373.5	40374.2	40385.5	40375.7
28	40395.7	40408.6	40418.3	40422.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40411.2
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HOURLY MEANS	40373.8	40385.4	40396.7	40399.3	40392.3	40385.0	40372.8	40360.9	40345.3	40341.9	40340.8	40340.5	40339.7	40339.1	40341.0	40342.2	40343.8	40345.6	40347.4	40348.7	40350.2	40351.0	40356.2	40364.2	40360.2

Tabel 80 Nilai Variasi harian komponen Y – east (nT) September 2021

Tondano Magnetic Observatory

September 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	335.1	329.6	328.7	326.6	326.5	326.0	335.6	346.2	347.3	346.1	341.2	340.0	337.8	337.9	337.3	336.6	337.4	337.2	337.0	338.0	340.2	345.6	351.8	345.0	337.9
2	336.9	333.0	326.7	323.3	323.8	332.1	343.4	353.9	355.9	348.4	341.2	339.7	339.6	337.8	336.7	336.2	336.0	335.7	335.4	336.2	341.0	347.1	352.1	344.9	339.0
3	329.9	320.0	311.8	309.8	315.7	324.4	333.5	344.9	353.3	351.1	342.0	340.4	339.0	336.8	336.8	336.5	336.3	336.7	338.7	339.7	339.4	343.8	349.9	344.6	335.6
4	333.2	329.8	329.9	327.7	327.0	330.8	338.2	348.1	351.5	347.5	341.9	339.6	337.4	336.7	336.1	336.5	337.3	338.2	338.1	338.0	340.5	344.6	353.7	351.3	338.9
5	342.1	334.8	326.7	325.7	324.0	327.6	336.8	346.3	351.3	350.1	344.9	342.0	339.8	337.4	336.0	335.9	336.7	336.9	337.5	337.1	337.7	341.4	352.4	350.5	338.8
6	337.9	325.7	320.2	320.4	318.8	321.3	326.6	330.5	337.0	341.7	339.7	338.2	337.1	335.9	336.4	336.4	336.1	337.0	337.8	338.3	337.3	339.5	345.1	343.5	334.1
7	334.9	322.2	318.6	314.2	314.0	318.7	329.7	340.0	346.4	348.2	343.2	339.7	338.2	336.9	336.1	336.0	335.5	333.7	335.6	337.0	338.1	342.9	352.2	345.7	334.9
8	334.9	325.6	323.1	326.2	325.0	327.1	334.8	341.9	345.1	343.9	339.4	337.4	338.8	338.3	336.7	334.6	334.6	332.4	332.4	332.5	334.2	337.0	344.6	341.4	335.1
9	330.2	317.7	312.6	308.1	300.9	302.8	312.6	325.8	339.5	345.9	342.2	339.8	338.3	336.7	335.3	334.3	333.5	333.1	334.1	334.4	336.8	343.7	359.2	360.0	331.6
10	350.6	337.6	329.3	325.0	322.1	319.4	323.5	334.1	343.6	346.7	340.7	340.1	339.5	337.6	335.9	334.6	334.5	333.9	333.9	331.7	330.9	337.6	347.0	343.2	335.6
11	341.6	326.6	311.5	303.7	306.6	316.9	335.1	347.7	354.9	351.1	341.9	338.5	338.0	335.6	333.9	334.0	334.6	335.5	335.5	335.3	337.1	340.8	347.0	341.8	334.4
12	329.3	316.2	304.4	307.9	322.4	334.1	342.4	345.7	345.0	344.4	340.1	337.1	335.1	335.1	332.3	332.1	332.1	332.8	333.9	335.7	338.1	343.5	347.5	339.5	333.6
13	332.0	324.6	323.1	321.4	320.7	325.5	338.4	347.3	347.9	343.8	342.0	340.2	339.1	337.5	336.9	336.0	334.1	334.5	334.5	333.9	334.8	339.0	346.2	341.3	335.6
14	331.7	324.5	325.0	324.0	323.9	326.9	329.8	334.4	339.7	343.3	339.0	337.9	337.5	334.3	334.1	334.1	334.4	334.9	337.1	336.1	336.8	340.4	343.5	335.8	334.1
15	324.6	322.5	320.6	317.9	313.7	313.7	324.6	336.1	343.2	344.3	340.6	338.4	338.1	337.2	336.5	336.5	336.8	336.4	335.5	335.6	335.9	338.6	341.4	328.7	332.4
16	322.0	325.9	330.4	327.8	326.7	329.5	338.9	338.9	344.3	342.0	336.1	335.3	335.6	335.3	333.9	334.2	333.5	332.9	334.8	335.1	334.5	335.2	339.2	333.7	334.0
17	325.1	323.1	325.6	322.9	322.2	330.6	340.3	340.3	347.1	343.9	340.0	338.2	337.8	333.6	332.1	330.2	330.1	332.1	333.1	335.5	344.6	347.9	348.4	335.7	335.0
18	322.2	315.3	314.9	316.5	316.4	322.3	329.3	339.7	347.2	342.7	335.9	330.0	330.6	330.4	331.7	332.4	334.5	335.7	336.5	337.4	339.6	344.8	355.0	347.8	332.9
19	336.4	318.5	310.9	311.0	310.9	317.3	328.6	340.7	342.3	342.7	339.7	337.9	336.3	335.0	334.4	334.6	335.0	335.6	336.0	337.6	338.8	341.1	343.1	331.6	332.3
20	318.5	313.5	313.6	320.1	320.1	329.0	339.7	350.3	346.2	344.3	339.6	335.7	335.5	335.6	335.4	335.6	336.4	336.5	336.9	336.9	337.7	341.2	343.7	332.9	334.0
21	317.7	306.7	305.7	317.6	317.6	325.2	335.9	347.5	348.4	344.8	340.2	337.7	336.3	335.4	334.6	335.0	336.6	335.9	337.7	340.4	339.7	346.7	351.9	334.5	333.7
22	319.5	307.7	307.5	312.3	312.3	320.5	333.4	347.6	355.1	349.1	340.1	336.6	334.4	332.3	331.4	332.1	333.1	332.6	332.3	332.0	333.0	338.5	350.3	342.8	331.9
23	322.7	309.3	312.8	322.4	322.4	331.8	332.1	343.0	343.6	340.5	337.5	336.3	336.2	334.1	334.3	333.9	333.6	334.4	333.5	333.8	333.7	335.3	340.3	336.0	332.2
24	333.8	328.8	329.4	327.1	327.0	325.9	327.0	333.8	344.6	344.1	338.0	335.1	334.5	334.7	333.8	333.3	330.8	332.0	334.3	334.6	334.7	336.5	340.5	333.0	333.6
25	319.1	308.8	310.2	317.2	317.2	321.1	318.6	328.6	345.8	343.5	336.9	335.3	334.4	333.7	334.1	334.0	333.7	334.0	335.0	334.5	334.1	338.7	344.1	334.1	330.3
26	319.7	311.7	313.7	327.9	327.9	334.8	335.5	339.2	344.6	344.6	340.4	337.5	336.6	335.1	334.0	333.7	333.9	334.4	334.4	335.1	335.4	337.0	339.4	330.5	333.2
27	323.6	329.3	339.3	339.9	339.9	332.6	327.9	333.9	343.4	342.2	339.1	336.3	336.0	336.4	336.7	336.4	337.1	338.8	338.5	339.4	339.6	339.3	336.5	328.2	336.3
28	323.7	320.1	323.1	334.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	325.4
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HOURLY MEANS	329.6	321.7	319.6	320.7	320.2	324.7	332.3	341.0	346.4	345.2	340.1	337.8	336.9	335.7	334.9	334.6	334.7	335.0	335.6	336.0	337.2	341.0	346.9	339.9	334.2

Tabel 81 Nilai Variasi harian komponen D – *declination* (menit) September 2021

Tondano Magnetic Observatory

September 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	29.29	28.79	28.70	28.51	28.52	28.48	29.33	30.26	30.37	30.27	29.84	29.73	29.54	29.55	29.50	29.43	29.50	29.49	29.47	29.56	29.75	30.22	30.76	30.16	29.54
2	29.44	29.08	28.53	28.23	28.28	29.01	30.01	30.94	31.11	30.47	29.84	29.71	29.70	29.54	29.45	29.40	29.39	29.36	29.34	29.40	29.81	30.35	30.78	30.14	29.64
3	28.82	27.95	27.23	27.05	27.57	28.34	29.15	30.15	30.90	30.72	29.93	29.78	29.66	29.47	29.47	29.43	29.42	29.45	29.63	29.71	29.69	30.07	30.60	30.13	29.35
4	29.12	28.82	28.82	28.63	28.57	28.91	29.56	30.44	30.74	30.40	29.90	29.70	29.51	29.45	29.39	29.43	29.49	29.58	29.56	29.56	29.77	30.13	30.92	30.70	29.63
5	29.88	29.23	28.52	28.44	28.29	28.62	29.43	30.28	30.72	30.61	30.17	29.92	29.72	29.52	29.39	29.37	29.45	29.46	29.52	29.48	29.52	29.85	30.80	30.62	29.62
6	29.51	28.44	27.95	27.98	27.85	28.07	28.54	28.89	29.46	29.88	29.70	29.57	29.47	29.37	29.42	29.42	29.40	29.48	29.54	29.58	29.49	29.69	30.16	30.02	29.20
7	29.26	28.15	27.83	27.44	27.42	27.85	28.81	29.72	30.29	30.46	30.02	29.71	29.58	29.46	29.38	29.37	29.33	29.18	29.34	29.46	29.56	29.98	30.79	30.23	29.27
8	29.27	28.44	28.21	28.48	28.38	28.57	29.26	29.88	30.17	30.08	29.70	29.52	29.64	29.61	29.46	29.27	29.27	29.07	29.07	29.08	29.23	29.47	30.14	29.84	29.30
9	28.86	27.75	27.30	26.90	26.28	26.46	27.33	28.49	29.70	30.26	29.94	29.72	29.60	29.45	29.33	29.24	29.17	29.14	29.22	29.25	29.45	30.06	31.41	31.47	28.99
10	30.63	29.49	28.76	28.37	28.13	27.90	28.28	29.21	30.05	30.32	29.80	29.74	29.69	29.52	29.37	29.25	29.24	29.19	29.19	29.00	28.92	29.51	30.32	29.99	29.33
11	29.87	28.55	27.22	26.53	26.78	27.68	29.28	30.39	31.03	30.70	29.90	29.60	29.56	29.35	29.21	29.21	29.26	29.34	29.33	29.32	29.47	29.80	30.34	29.87	29.23
12	28.76	27.61	26.58	26.89	28.15	29.19	29.92	30.22	30.16	30.11	29.75	29.50	29.32	29.32	29.07	29.05	29.05	29.10	29.20	29.35	29.55	30.02	30.37	29.67	29.16
13	29.00	28.34	28.20	28.06	28.00	28.43	29.57	30.36	30.43	30.07	29.91	29.75	29.66	29.52	29.47	29.39	29.22	29.26	29.26	29.20	29.28	29.65	30.27	29.83	29.34
14	28.98	28.35	28.39	28.30	28.30	28.56	28.83	29.24	29.71	30.03	29.65	29.55	29.52	29.24	29.23	29.22	29.24	29.29	29.48	29.40	29.45	29.76	30.04	29.35	29.21
15	28.37	28.17	28.00	27.77	27.41	27.42	28.38	29.39	30.01	30.11	29.79	29.60	29.57	29.49	29.42	29.43	29.46	29.42	29.34	29.34	29.37	29.61	29.85	28.73	29.06
16	28.14	28.47	28.85	28.63	28.53	28.79	29.62	29.62	30.10	29.90	29.39	29.31	29.34	29.31	29.19	29.22	29.16	29.11	29.28	29.30	29.24	29.31	29.65	29.17	29.19
17	28.41	28.22	28.43	28.19	28.14	28.89	29.74	29.74	30.35	30.07	29.72	29.59	29.56	29.19	29.05	28.89	28.86	29.04	29.12	29.35	30.15	30.45	30.50	29.38	29.29
18	28.19	27.56	27.51	27.64	27.64	28.16	28.79	29.72	30.38	30.00	29.40	28.88	28.93	28.90	29.02	29.08	29.26	29.36	29.43	29.52	29.71	30.16	31.05	30.41	29.11
19	29.40	27.83	27.16	27.16	27.16	27.72	28.72	29.79	29.94	29.98	29.72	29.55	29.41	29.30	29.25	29.26	29.30	29.36	29.39	29.53	29.63	29.83	30.00	28.99	29.06
20	27.84	27.39	27.39	27.96	27.96	28.73	29.68	30.61	30.27	30.10	29.69	29.35	29.33	29.35	29.33	29.34	29.42	29.42	29.46	29.46	29.53	29.83	30.05	29.10	29.19
21	27.77	26.79	26.69	27.73	27.73	28.39	29.33	30.35	30.45	30.14	29.74	29.52	29.40	29.33	29.26	29.30	29.44	29.36	29.52	29.76	29.70	30.31	30.76	29.24	29.17
22	27.92	26.90	26.87	27.28	27.28	28.00	29.14	30.39	31.08	30.56	29.76	29.45	29.26	29.08	29.01	29.06	29.15	29.10	29.07	29.04	29.12	29.61	30.64	29.97	29.03
23	28.20	27.02	27.32	28.15	28.15	28.98	29.02	29.97	30.06	29.78	29.52	29.41	29.40	29.22	29.23	29.19	29.17	29.24	29.16	29.18	29.17	29.32	29.75	29.37	29.04
24	29.17	28.71	28.76	28.54	28.54	28.45	28.56	29.17	30.14	30.09	29.55	29.30	29.24	29.26	29.19	29.15	28.93	29.04	29.24	29.26	29.27	29.43	29.78	29.11	29.16
25	27.89	26.98	27.09	27.70	27.70	28.05	27.84	28.72	30.24	30.04	29.46	29.32	29.25	29.19	29.22	29.21	29.18	29.21	29.29	29.25	29.21	29.62	30.09	29.21	28.87
26	27.94	27.23	27.39	28.62	28.62	29.23	29.30	29.64	30.13	30.13	29.76	29.51	29.43	29.31	29.21	29.18	29.20	29.24	29.24	29.30	29.32	29.46	29.67	28.88	29.12
27	28.27	28.75	29.62	29.67	29.67	29.03	28.63	29.16	30.02	29.91	29.65	29.41	29.38	29.41	29.44	29.41	29.47	29.61	29.59	29.67	29.67	29.65	29.40	28.67	29.38
28	28.27	27.95	28.20	29.20	29.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28.56
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HOURLY MEANS	28.80	28.11	27.91	28.00	28.01	28.37	29.04	29.81	30.30	30.19	29.75	29.54	29.47	29.36	29.29	29.27	29.27	29.29	29.34	29.38	29.48	29.82	30.33	29.71	29.22

Tabel 82 Nilai variasi harian komponen I – *inclination* (derajat) September 2021

Tondano Magnetic Observatory

September 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-12.90	-12.89	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.89	-12.90
2	-12.88	-12.87	-12.86	-12.86	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.89
3	-12.90	-12.88	-12.87	-12.86	-12.86	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.91	-12.90	-12.91	-12.91	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.89
4	-12.89	-12.88	-12.87	-12.87	-12.87	-12.88	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.90	-12.89
5	-12.89	-12.88	-12.87	-12.87	-12.87	-12.88	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.90
6	-12.89	-12.88	-12.87	-12.88	-12.89	-12.90	-12.91	-12.91	-12.91	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.90	-12.91	-12.91	-12.90	-12.90
7	-12.89	-12.87	-12.86	-12.86	-12.86	-12.88	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.91	-12.90	-12.89
8	-12.89	-12.88	-12.86	-12.86	-12.86	-12.87	-12.88	-12.89	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.90
9	-12.89	-12.88	-12.86	-12.85	-12.86	-12.87	-12.89	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.90	-12.90	-12.91	-12.90	-12.91	-12.91	-12.92	-12.92	-12.90
10	-12.91	-12.90	-12.89	-12.87	-12.86	-12.86	-12.87	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89	-12.90	-12.89	-12.89	-12.90	-12.90	-12.90	-12.89
11	-12.90	-12.89	-12.88	-12.87	-12.87	-12.87	-12.89	-12.89	-12.90	-12.90	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.90	-12.89
12	-12.88	-12.86	-12.85	-12.86	-12.87	-12.88	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89
13	-12.89	-12.88	-12.87	-12.87	-12.87	-12.88	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.90	-12.89
14	-12.89	-12.88	-12.88	-12.87	-12.87	-12.87	-12.88	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.89
15	-12.89	-12.88	-12.88	-12.87	-12.88	-12.88	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.90	-12.89
16	-12.89	-12.89	-12.87	-12.86	-12.86	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89
17	-12.88	-12.87	-12.87	-12.86	-12.85	-12.87	-12.88	-12.88	-12.88	-12.89	-12.89	-12.90	-12.91	-12.91	-12.91	-12.90	-12.90	-12.90	-12.90	-12.90	-12.92	-12.92	-12.92	-12.92	-12.89
18	-12.90	-12.88	-12.86	-12.85	-12.85	-12.86	-12.87	-12.89	-12.89	-12.90	-12.91	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.92	-12.92	-12.89
19	-12.90	-12.87	-12.86	-12.86	-12.86	-12.87	-12.88	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.90	-12.89
20	-12.88	-12.87	-12.86	-12.86	-12.86	-12.86	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.89
21	-12.89	-12.87	-12.86	-12.86	-12.86	-12.86	-12.87	-12.88	-12.89	-12.88	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.90	-12.89
22	-12.89	-12.88	-12.87	-12.86	-12.86	-12.86	-12.87	-12.88	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.90	-12.91	-12.91	-12.91	-12.89
23	-12.89	-12.87	-12.85	-12.85	-12.84	-12.85	-12.86	-12.88	-12.89	-12.90	-12.89	-12.90	-12.90	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.88
24	-12.89	-12.87	-12.86	-12.85	-12.85	-12.85	-12.86	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.91	-12.90	-12.90	-12.90	-12.91	-12.90	-12.89
25	-12.89	-12.88	-12.87	-12.86	-12.86	-12.86	-12.86	-12.86	-12.87	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.89
26	-12.89	-12.87	-12.85	-12.84	-12.85	-12.85	-12.86	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89	-12.88
27	-12.88	-12.87	-12.86	-12.85	-12.86	-12.86	-12.86	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88
28	-12.88	-12.86	-12.85	-12.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-12.86
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HOURLY MEANS	-12.89	-12.88	-12.87	-12.86	-12.86	-12.87	-12.88	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.90	-12.89

2. Gangguan badai magnet

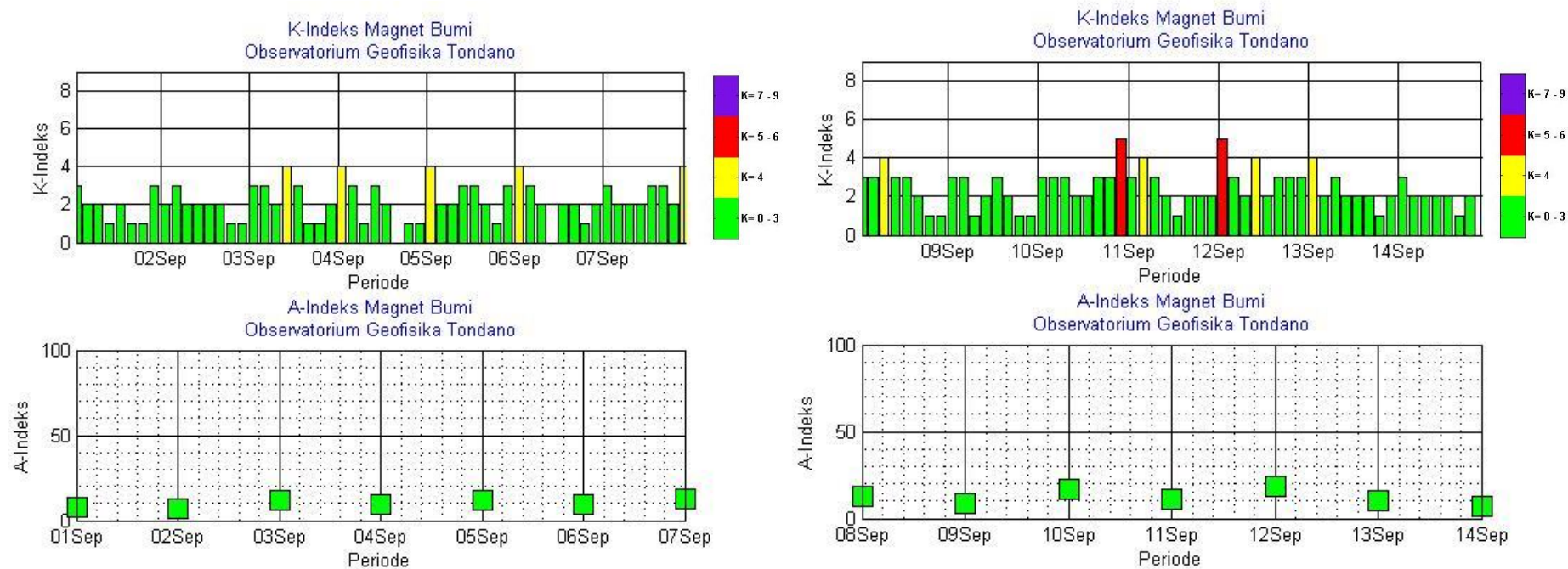
Tabel 83 Monitoring waktu gangguan pada pengamatan magnet bumi September 2021

Kejadian rekaman magnet bumi							Durasi gangguan	Keterangan
No	Hari			Waktu				
	Tanggal	Bulan	Tahun	Jam	Menit	Detik		
1	1	9	2021					
2	2	9	2021					
3	3	9	2021					
4	4	9	2021					
5	5	9	2021					
6	6	9	2021					
7	7	9	2021					
8	8	9	2021					
9	9	9	2021					
10	10	9	2021					
11	11	9	2021					
12	12	9	2021					
13	13	9	2021					
14	14	9	2021					
15	15	9	2021					
16	16	9	2021					
17	17	9	2021					
18	18	9	2021					
19	19	9	2021					
20	20	9	2021					
21	21	9	2021					
22	22	9	2021					
23	23	9	2021					
24	24	9	2021					
25	25	9	2021					
26	26	9	2021					
27	27	9	2021					
28	28	9	2021					
29	29	9	2021					
30	30	9	2021					

Tabel 84 Hasil analisa K-indeks dan A-indeks September 2021

Tanggal	K-1	K-2	K-3	K-4	K-5	K-6	K-7	K-8	A Indeks	Keterangan
1	3	2	2	1	2	1	1	3	7.500	Tenang
2	2	3	2	2	2	2	1	1	7.000	Tenang
3	3	3	2	4	3	1	1	2	11.500	Tenang
4	4	3	1	3	2	0	1	1	9.125	Tenang
5	4	2	2	3	3	2	1	3	12.000	Tenang
6	4	3	2	0	2	2	1	2	9.125	Tenang
7	3	2	2	2	3	3	2	4	12.500	Tenang
8	3	3	4	3	3	2	1	1	12.500	Tenang
9	3	3	1	2	3	2	1	1	8.500	Tenang
10	3	3	3	2	2	3	3	5	17.125	Tenang
11	3	4	3	2	1	2	2	2	11.000	Tenang
12	5	3	2	4	2	3	3	3	18.625	Tenang
13	4	2	3	2	2	2	1	2	10.000	Tenang
14	3	2	2	2	2	1	2	0	6.625	Tenang
15	4	3	3	2	2	2	0	3	11.625	Tenang
16	3	3	3	3	2	2	0	3	11.125	Tenang
17	3	3	3	4	3	3	5	3	20.625	Tenang
18	4	3	3	3	2	0	0	1	10.250	Tenang
19	3	2	2	0	1	1	0	1	4.750	Tenang
20	3	3	1	1	1	1	0	3	7.125	Tenang
21	2	3	3	3	2	4	3	3	14.500	Tenang
22	4	3	4	3	2	3	1	3	15.500	Tenang
23	3	3	3	2	3	2	2	2	11.000	Tenang
24	3	3	2	2	2	3	1	2	9.500	Tenang
25	4	3	2	2	2	1	2	3	11.000	Tenang
26	1	0	0	0	0	0	0	1	0.750	Tenang
27	4	3	4	2	1	3	4	4	18.500	Tenang
28	5	2	-	-	-	-	-	-	-	UPS Mati
29	-	-	-	-	-	-	-	-	-	UPS Mati
30	-	-	-	-	-	-	-	-	-	UPS Mati

Gambar 30 Plot hasil analisa K-indeks dan A-indeks saat terjadi gangguan magnet bumi di bulan September 2021



J. Oktober 2021

1. Nilai variasi harian bulan Oktober 2021

Tabel 85 Nilai variasi harian komponen H – *horizontal* (nT) Oktober 2021

Tondano Magnetic Observatory																								Oktober 2021	
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39345.8	39357.5	39368.7	39373.1	39372.2	39356.5	39337.2	39320.9	39296.2	39300.1	39300.2	39307.0	39299.4	39297.4	39297.2	39306.3	39308.3	39313.8	39320.7	39321.2	39321.5	39325.0	39329.4	39338.1	39325.6
2	39349.8	39363.4	39377.4	39385.1	39378.6	39365.6	39349.2	39335.8	39328.7	39316.8	39300.3	39282.7	39272.8	39271.1	39281.3	39300.8	39307.3	39313.6	39316.6	39316.9	39318.4	39319.7	39323.9	39337.5	39325.6
3	39356.6	39374.6	39384.3	39388.5	39381.3	39357.9	39339.5	39330.0	39326.8	39322.1	39320.6	39322.8	-	-	-	-	-	-	-	-	-	-	-	-	39350.4
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	39360.5	39382.3	39394.8	39406.5	39399.5	39380.1	39361.0	39348.3	39345.0	39335.8	39326.1	39307.9	39302.4	39298.4	39301.8	39301.4	39290.9	39291.7	39304.8	39312.1	39318.5	39323.2	39330.6	39343.6	39336.1
7	39359.2	39372.1	39377.0	39375.2	39368.6	39354.1	39338.9	39327.7	39326.5	39326.6	39324.6	39323.8	39321.3	39314.7	39305.7	39301.4	39308.9	39315.0	39316.8	39320.6	39323.1	39323.8	39326.8	39336.3	39332.9
8	39354.6	39373.3	39389.2	39399.1	39390.1	39367.9	39346.3	39332.1	39327.4	39325.1	39325.2	39325.9	39327.3	39329.5	39325.6	39324.2	39326.7	39329.7	39331.9	39334.4	39337.9	39336.8	39333.5	39336.0	39342.9
9	39344.7	39354.2	39365.2	39377.1	39373.5	39353.7	39338.1	39326.6	39322.5	39322.9	39323.2	39323.7	39317.7	39318.4	39321.4	39325.4	39326.8	39330.3	39332.5	39334.8	39335.4	39331.9	39333.4	39342.1	39336.5
10	39356.0	39370.3	39388.9	39403.2	39393.4	39374.9	39361.9	39352.4	39349.4	39348.8	39349.0	39337.7	39317.3	39304.5	39299.8	39298.7	39304.8	39315.5	39323.2	39326.7	39329.4	39322.5	39327.3	39334.1	39341.2
11	39355.0	39367.9	39381.2	39382.4	39376.7	39361.5	39343.2	39321.1	39308.3	39299.6	39298.6	39300.1	39304.3	39312.4	39315.0	39314.8	39311.6	39312.4	39313.1	39314.1	39315.7	39320.7	39313.7	39304.5	39327.0
12	39362.5	39372.2	39377.8	39387.3	39385.4	39381.0	39368.9	39355.1	39342.7	39338.6	39338.8	39337.4	39335.4	39335.4	39334.6	39331.7	39328.0	39326.5	39329.7	39337.2	39339.3	39347.4	39355.9	39365.8	39350.6
13	39332.2	39336.6	39345.3	39351.9	39346.8	39335.3	39323.4	39316.7	39309.9	39305.4	39304.1	39302.3	39303.1	39303.9	39304.2	39307.7	39309.3	39309.3	39311.2	39313.0	39314.6	39315.7	39315.8	39322.7	39318.4
14	39340.6	39351.6	39361.0	39369.9	39362.8	39346.7	39332.7	39324.6	39321.1	39320.2	39320.8	39318.3	39316.2	39308.2	39303.7	39300.0	39301.7	39302.0	39307.3	39321.7	39330.4	39334.2	39335.0	39343.6	39328.1
15	39353.0	39364.2	39368.7	39368.6	39361.3	39346.0	39331.7	39320.1	39319.5	39319.8	39319.6	39322.9	39324.8	39324.6	39324.9	39326.1	39326.9	39327.5	39329.5	39330.6	39329.7	39329.6	39327.3	39330.9	39334.5
16	39339.5	39362.0	39372.8	39380.2	39376.7	39362.2	39349.7	39349.7	39332.5	39329.8	39331.1	39332.0	39333.3	39334.2	39333.9	39335.3	39342.5	39342.7	39335.7	39336.6	39334.9	39331.6	39330.5	39334.5	39343.5
17	39347.5	39358.9	39369.9	39377.3	39368.6	39356.2	39349.7	39349.7	39340.5	39336.4	39316.0	39291.6	39282.4	39280.6	39282.1	39289.5	39290.7	39294.1	39298.2	39309.4	39312.4	39305.3	39309.4	39318.6	39322.3
18	39324.3	39334.4	39334.4	39336.2	39331.2	39331.2	39321.0	39313.9	39308.4	39314.2	39319.4	39323.1	39322.8	39325.5	39329.3	39327.7	39325.7	39331.7	39335.6	39340.1	39327.0	39318.7	39311.5	39317.8	39325.2
19	39334.1	39352.1	39361.0	39354.7	39339.8	39339.8	39334.5	39321.9	39312.3	39313.0	39310.7	39315.3	39320.0	39322.4	39320.2	39321.5	39320.7	39319.3	39332.5	39324.5	39318.4	39316.4	39324.9	39335.3	39327.7
20	39349.6	39358.8	39356.9	39353.8	39344.9	39344.9	39333.1	39329.8	39333.6	39335.5	39334.8	39335.2	39331.3	39329.9	39327.9	39322.8	39327.2	39329.6	39334.6	39339.8	39343.1	39341.3	39337.4	39345.7	39338.4
21	39349.0	39359.6	39366.0	39375.8	39374.0	39374.0	39359.6	39340.4	39325.1	39328.7	39328.1	39329.2	39331.1	39329.4	39330.9	39330.0	39326.2	39329.8	39330.2	39328.0	39326.8	39326.5	39325.6	39332.4	39339.9
22	39344.8	39358.5	39374.0	39380.5	39375.7	39375.7	39360.8	39344.8	39332.8	39333.2	39333.9	39335.7	39334.4	39330.6	39331.1	39333.1	39334.4	39335.1	39335.8	39337.9	39339.4	39337.1	39340.6	39348.6	39345.4
23	39373.9	39384.1	39393.0	39394.5	39391.5	39391.5	39380.6	39365.0	39345.2	39343.1	39345.0	39346.5	39345.5	39345.4	39343.2	39342.6	39344.0	39344.6	39345.3	39346.6	39345.8	39346.3	39354.8	39369.4	39359.5
24	39359.5	39377.5	39387.0	39390.0	39383.0	39383.0	39365.5	39345.5	39336.5	39336.2	39335.7	39335.4	39335.4	39335.8	39336.3	39336.6	39335.8	39336.0	39336.7	39339.8	39340.3	39340.5	39344.4	39357.8	39350.4
25	39372.0	39391.1	39397.9	39400.4	39386.2	39386.2	39366.1	39344.9	39337.1	39337.1	39335.5	39336.4	39338.5	39337.5	39334.6	39335.5	39339.7	39336.0	39335.3	39337.2	39335.5	39337.2	39347.2	39361.2	39352.8
26	39371.2	39391.7	39401.7	39400.6	39387.9	39387.9	39370.1	39350.9	39339.6	39339.4	39336.4	39336.1	39336.9	39335.2	39333.9	39337.2	39336.7	39338.0	39339.6	39341.3	39342.3	39337.9	39340.5	39352.3	39353.6
27	39366.5	39381.3	39396.6	39399.4	39390.3	39390.3	39373.5	39351.3	39337.4	39341.7	39341.7	39341.7	39337.2	39336.4	39338.2	39337.0	39336.9	39338.1	39339.1	39339.0	39339.2	39339.6	39339.8	-	39353.6
28	-	-	-	39388.0	39379.0	39379.0	39365.2	39351.0	39343.4	39344.5	39343.3	39342.8	39343.2	39343.5	39344.3	39344.0	39343.5	39344.5	39345.6	39346.5	39348.8	39350.3	39348.1	39352.2	39351.9
29	39367.9	39388.6	39403.1	39404.9	39398.5	39398.5	39382.9	39359.4	39346.2	39345.9	39345.7	-	-	-	-	-	-	-	-	-	-	-	-	-	39376.5
30	-	-	-	39386.1	39381.6	39381.6	39365.4	39342.9	39330.9	39332.3	39334.8	39336.6	39339.2	39340.3	39339.7	39337.7	39341.8	39342.6	39347.4	39350.0	39343.8	39342.8	39331.0	39341.6	39347.1
31	39347.0	39352.1	39365.8	39372.9	39366.3	39355.8	39345.0	39335.6	39331.8	39329.4	39338.1	39338.5	39314.8	39283.4	39277.2	39293.6	39298.2	39304.0	39308.7	39317.7	39318.3	39321.6	39335.0	39337.7	39328.7
HOURLY MEANS	39352.5	39366.3	39376.3	39381.5	39374.7	39366.2	39351.5	39338.2	39329.6	39328.4	39326.9	39324.6	39321.8	39319.6	39319.2	39320.8	39322.0	39324.2	39327.3	39330.3	39330.7	39330.5	39332.3	39340.0	39340.2

Tabel 86 Nilai variasi harian komponen Z – vertical (nT) Oktober 2021

Tondano Magnetic Observatory

Oktober 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-8997.7	-8989.1	-8986.8	-8986.7	-8984.8	-8983.2	-8978.8	-8981.8	-8981.8	-8995.7	-8992.0	-8996.4	-8999.2	-8998.4	-9002.9	-9004.4	-9001.4	-9004.3	-9005.5	-9002.3	-9003.6	-9003.5	-9001.8	-9000.3	-8995.1
2	-8998.6	-8995.8	-8993.1	-8993.3	-8989.1	-8987.9	-8987.9	-8989.3	-8989.3	-8998.9	-8998.1	-8995.0	-8997.6	-9000.3	-9004.4	-9008.6	-9004.4	-9003.9	-9002.9	-9002.8	-9003.0	-9002.0	-9001.2	-9001.7	-8997.9
3	-8998.5	-8987.9	-8976.8	-8971.0	-8972.1	-8977.3	-8983.8	-8989.9	-8989.9	-8996.4	-8997.8	-8999.7	-	-	-	-	-	-	-	-	-	-	-	-	-8986.8
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-8989.3	-8988.0	-8986.3	-8984.9	-8985.8	-8990.3	-8995.7	-9000.1	-9000.1	-8995.5	-8994.2	-8995.3	-9000.2	-9000.9	-9001.0	-8999.9	-9000.1	-9003.3	-9006.6	-9006.2	-9005.0	-9002.9	-8999.6	-8995.9	-8997.0
7	-8991.7	-8984.4	-8978.2	-8974.9	-8978.2	-8984.7	-8990.3	-8995.0	-8995.0	-8996.0	-8996.1	-8996.5	-8997.1	-8996.6	-8995.5	-8999.0	-9004.7	-9003.5	-9004.1	-9004.2	-9003.8	-9004.2	-9006.1	-9003.4	-8995.1
8	-8999.2	-8990.6	-8982.4	-8977.0	-8976.6	-8980.4	-8986.5	-8991.2	-8991.2	-8994.8	-8996.0	-8997.4	-8998.0	-8998.4	-8998.7	-9000.1	-9001.9	-9001.4	-9001.4	-9002.5	-9003.6	-9004.3	-9008.2	-9010.0	-8995.5
9	-9008.1	-9000.5	-8996.0	-8991.8	-8985.6	-8984.1	-8987.3	-8989.6	-8989.6	-8997.4	-8998.2	-8998.7	-8998.2	-8999.8	-9000.4	-9001.9	-9002.3	-9002.6	-9002.4	-9002.7	-9001.7	-9001.8	-9004.2	-9002.2	-8997.8
10	-8995.7	-8989.6	-8984.2	-8982.3	-8982.0	-8986.9	-8992.7	-8994.5	-8994.5	-8994.3	-8994.9	-8993.2	-8992.1	-8996.3	-8998.1	-9000.4	-9003.0	-9006.2	-9003.5	-9003.0	-9001.7	-9001.4	-9014.6	-9007.4	-8996.3
11	-8998.4	-8992.9	-8985.2	-8989.5	-9001.9	-9003.6	-9000.3	-8996.3	-8996.3	-8995.2	-8998.0	-8999.2	-8999.9	-9001.6	-8999.7	-8999.9	-8998.8	-9002.3	-9003.1	-9002.7	-9005.9	-9004.3	-9000.4	-8997.4	-8998.9
12	-9002.2	-8991.7	-8987.0	-8993.4	-9001.4	-9003.3	-8998.1	-9002.5	-9002.5	-9002.7	-9003.1	-9003.9	-9004.3	-9005.6	-9005.2	-9005.3	-9005.2	-9007.9	-9009.7	-9010.0	-9009.2	-9011.9	-9013.1	-9010.1	-9003.7
13	-8999.8	-8996.0	-8988.7	-8988.1	-8986.9	-8988.0	-8988.8	-8991.3	-8991.3	-8993.6	-8995.5	-8997.3	-8998.8	-8999.0	-8998.9	-9000.3	-9001.4	-9000.6	-9001.7	-9002.4	-9002.3	-9004.7	-9006.7	-9005.1	-8997.0
14	-8999.8	-8987.2	-8987.1	-8986.3	-8985.6	-8987.9	-8992.4	-8991.3	-8991.3	-8995.4	-8995.9	-8996.3	-8996.8	-8997.1	-8998.9	-9000.1	-9002.3	-9002.5	-9004.1	-9006.0	-9004.6	-9004.8	-9002.8	-9004.2	-8996.7
15	-9000.8	-8992.0	-8984.5	-8982.9	-8981.7	-8984.2	-8985.5	-8989.7	-8991.5	-8994.1	-8995.8	-8997.5	-8997.2	-8997.3	-8998.1	-8999.1	-9000.0	-9001.1	-9001.7	-9001.7	-9001.7	-9003.3	-9003.6	-9002.0	-8995.3
16	-8999.7	-8993.2	-8986.9	-8988.6	-8994.0	-8992.4	-8987.9	-8987.9	-8987.9	-8994.2	-8996.7	-8998.0	-8998.9	-8998.9	-8999.1	-9000.0	-9002.1	-9000.5	-8999.5	-9002.4	-9002.0	-9003.0	-9001.9	-9000.7	-8996.5
17	-9000.5	-9000.3	-8998.4	-8996.1	-8991.8	-8990.7	-8990.2	-8990.2	-8993.5	-8991.8	-8992.7	-8996.0	-8998.5	-9001.3	-9002.9	-9001.3	-9004.0	-9002.4	-9005.5	-9003.3	-9004.5	-9007.9	-9006.6	-8998.4	-8998.4
18	-9001.3	-8999.3	-8995.3	-8994.6	-8994.6	-8996.5	-8994.0	-8993.7	-8993.7	-8994.1	-8994.8	-8995.1	-8995.4	-8997.7	-8996.8	-8997.6	-8998.4	-9002.2	-9004.0	-9000.2	-8995.8	-8995.7	-9000.3	-9006.5	-8997.4
19	-9005.1	-8996.9	-8983.9	-8981.6	-8981.6	-8987.2	-8991.7	-8990.0	-8990.0	-8992.0	-8991.9	-8995.3	-8997.1	-8998.2	-8998.2	-8998.9	-8999.6	-9002.7	-9000.0	-9000.2	-9002.2	-9006.6	-9008.7	-9007.1	-8996.1
20	-9002.6	-8994.5	-8987.6	-8988.3	-8988.3	-8990.8	-8992.1	-8992.6	-8992.6	-8994.7	-8994.8	-8995.6	-8995.3	-8996.4	-8996.9	-8997.8	-9001.6	-9002.0	-9001.8	-9002.2	-9002.7	-9002.5	-9004.9	-9004.6	-8996.8
21	-9001.8	-8999.5	-8992.3	-8994.1	-8994.1	-8987.5	-8982.4	-8980.7	-8980.7	-8993.8	-8994.6	-8996.8	-8997.2	-8997.5	-8998.6	-8999.0	-8999.6	-9001.1	-9001.4	-8999.8	-9001.4	-9000.6	-9000.4	-9000.3	-8995.6
22	-8999.9	-8991.1	-8983.1	-8984.1	-8984.1	-8986.6	-8988.1	-8991.3	-8991.3	-8996.8	-8997.6	-8997.5	-8996.5	-8996.6	-8998.0	-8999.7	-8999.7	-9000.7	-9001.0	-9001.4	-9001.3	-9001.5	-9004.8	-9004.6	-8995.7
23	-9003.4	-8999.6	-9000.2	-8992.3	-8992.3	-8990.6	-9000.3	-9002.3	-9002.3	-9001.3	-9001.9	-9002.5	-9002.8	-9003.3	-9003.5	-9005.1	-9005.9	-9006.3	-9007.2	-9008.0	-9009.8	-9012.1	-9017.7	-9015.3	-9003.6
24	-9002.3	-8997.2	-8988.9	-8987.1	-8987.1	-8989.5	-8987.3	-8985.3	-8985.3	-8996.9	-8998.5	-8998.9	-8998.8	-8998.2	-8998.3	-8999.0	-8999.4	-9000.2	-9001.4	-9000.7	-9000.9	-8998.7	-8996.4	-8993.2	-8995.4
25	-8998.6	-8994.3	-8987.0	-8989.2	-8989.2	-8989.6	-8992.6	-8992.5	-8992.5	-8994.5	-8996.9	-8998.1	-8998.3	-8997.3	-8997.3	-8998.6	-9000.7	-9000.1	-9001.0	-9001.3	-9000.9	-8998.8	-8996.5	-8993.3	-8995.8
26	-8994.6	-8995.9	-8988.4	-8986.6	-8986.6	-8988.6	-8988.4	-8985.2	-8985.2	-8991.7	-8993.7	-8995.8	-8996.6	-8996.1	-8997.0	-8998.7	-8998.8	-8999.9	-9000.4	-9000.6	-9000.9	-8998.3	-9002.7	-9005.0	-8994.8
27	-9004.7	-9002.6	-8996.0	-8992.5	-8992.5	-8991.0	-8992.8	-8994.1	-8994.1	-8996.3	-8995.9	-8997.6	-8996.3	-8997.0	-8997.4	-8997.9	-8999.6	-9000.3	-9000.5	-9001.0	-9001.9	-9003.4	-9004.9	-	-8997.8
28	-	-	-	-8986.9	-8986.9	-8986.8	-8984.2	-8983.4	-8983.4	-8994.0	-8993.5	-8994.8	-8995.5	-8996.5	-8996.7	-8997.1	-8997.7	-8998.3	-8999.5	-8999.4	-9000.6	-9003.6	-9003.8	-9001.9	-8994.5
29	-8999.3	-8997.2	-8991.0	-8989.5	-8989.5	-8988.4	-8984.0	-8981.6	-8981.6	-8994.3	-8995.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-8990.1
30	-	-	-	-8992.2	-8992.2	-8990.3	-8982.8	-8982.4	-8992.5	-8993.9	-8995.9	-8996.6	-8997.9	-8997.6	-8997.0	-8997.4	-8999.5	-9000.0	-9000.1	-8998.5	-8995.5	-8996.9	-8994.4	-9005.3	-8995.2
31	-9006.4	-9009.2	-9003.6	-8996.7	-8992.4	-8991.4	-8987.7	-8988.2	-8991.3	-8992.7	-8997.9	-8997.2	-8991.3	-8988.2	-9002.3	-9008.3	-9003.7	-9003.4	-9003.1	-9003.6	-8999.9	-8998.8	-9000.5	-8997.5	-8998.1
HOURLY MEANS	-9000.0	-8994.7	-8988.8	-8987.7	-8987.9	-8989.0	-8989.5	-8990.5	-8991.0	-8995.3	-8996.1	-8997.1	-8997.5	-8998.1	-8999.3	-9000.6	-9001.2	-9002.3	-9002.6	-9002.6	-9002.4	-9002.7	-9004.0	-9003.1	-8996.4

Tabel 87 Nilai Variasi harian komponen F – total (nT) Oktober 2021

Tondano Magnetic Observatory

Oktober 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	40361.5	40371.0	40381.4	40385.6	40384.3	40368.7	40348.9	40333.7	40309.6	40316.5	40315.8	40323.4	40316.6	40314.4	40315.3	40324.5	40325.7	40331.8	40338.8	40338.6	40339.2	40342.5	40346.4	40354.6	40341.2
2	40365.6	40378.2	40391.3	40398.8	40391.6	40378.6	40362.7	40349.9	40343.0	40333.5	40317.2	40299.4	40290.4	40289.3	40300.1	40320.1	40325.5	40331.5	40334.2	40334.4	40336.0	40337.0	40341.0	40354.3	40341.8
3	40372.2	40387.3	40394.3	40397.2	40390.4	40368.7	40352.2	40344.3	40341.2	40338.1	40337.0	40339.5	-	-	-	-	-	-	-	-	-	-	-	-	40363.5
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	40373.9	40394.9	40406.7	40417.9	40411.2	40393.3	40375.8	40364.5	40361.2	40351.2	40341.5	40324.0	40319.8	40316.0	40319.3	40318.7	40308.5	40310.0	40323.5	40330.6	40336.5	40340.6	40347.1	40358.9	40351.9
7	40373.3	40384.2	40387.5	40385.1	40379.4	40366.7	40353.1	40343.2	40342.1	40342.4	40340.4	40339.8	40337.5	40330.9	40321.9	40318.5	40327.1	40332.8	40334.6	40338.4	40340.8	40341.5	40344.9	40353.5	40348.3
8	40370.4	40386.8	40400.4	40408.9	40400.0	40379.2	40359.5	40346.7	40342.1	40340.7	40341.0	40342.0	40343.5	40345.7	40342.0	40341.0	40343.8	40346.7	40348.8	40351.5	40355.1	40354.2	40351.9	40354.7	40358.2
9	40362.8	40370.3	40380.0	40390.7	40385.8	40366.2	40351.7	40341.0	40337.0	40339.1	40339.5	40340.2	40334.3	40335.3	40338.3	40342.5	40344.0	40347.5	40349.6	40351.9	40352.3	40348.8	40350.9	40358.9	40352.4
10	40371.0	40383.6	40400.5	40414.0	40404.4	40387.4	40376.1	40367.2	40364.3	40363.7	40364.0	40352.6	40332.5	40320.9	40316.8	40316.2	40322.7	40333.9	40340.8	40344.1	40346.4	40339.6	40347.2	40352.3	40356.8
11	40370.6	40382.0	40393.2	40395.3	40392.5	40378.1	40359.5	40337.1	40324.6	40315.9	40315.5	40317.3	40321.5	40329.8	40331.9	40331.8	40328.4	40330.0	40330.8	40331.7	40334.0	40338.5	40330.8	40321.2	40343.4
12	40378.8	40385.9	40390.3	40401.0	40400.9	40397.0	40384.1	40371.6	40359.5	40355.6	40355.8	40354.6	40352.9	40353.1	40352.3	40349.5	40345.8	40344.9	40348.4	40355.8	40357.7	40366.2	40374.8	40383.8	40367.5
13	40348.7	40352.2	40359.0	40365.3	40360.1	40349.1	40337.7	40331.7	40325.1	40321.2	40320.4	40319.0	40320.1	40320.9	40321.2	40324.9	40326.7	40326.6	40328.7	40330.6	40332.1	40333.8	40334.2	40340.6	40334.6
14	40356.9	40364.8	40373.9	40382.5	40375.3	40360.1	40347.5	40339.4	40336.0	40336.0	40336.7	40334.4	40332.4	40324.7	40320.8	40317.4	40319.5	40319.9	40325.4	40339.9	40348.0	40351.8	40352.1	40360.8	40344.0
15	40369.2	40378.2	40380.9	40380.4	40373.1	40358.7	40345.1	40334.6	40334.5	40335.4	40335.5	40339.1	40340.9	40340.7	40341.2	40342.6	40343.6	40344.5	40346.5	40347.6	40346.7	40347.0	40344.7	40347.9	40349.9
16	40355.8	40376.3	40385.4	40393.0	40390.8	40376.3	40363.1	40363.1	40346.4	40345.1	40347.0	40348.1	40349.5	40350.4	40350.2	40351.7	40359.3	40359.1	40352.0	40353.6	40351.9	40348.9	40347.5	40351.1	40359.0
17	40363.7	40374.9	40385.2	40391.9	40382.4	40370.1	40363.6	40363.6	40354.7	40351.4	40331.2	40307.5	40299.3	40298.1	40300.2	40307.8	40308.6	40312.5	40316.2	40327.7	40330.2	40323.5	40328.3	40337.0	40338.7
18	40341.4	40350.8	40349.9	40351.4	40346.6	40347.0	40336.5	40329.5	40324.1	40329.9	40335.1	40338.8	40338.5	40341.7	40345.2	40343.8	40342.1	40348.8	40353.0	40356.5	40342.7	40334.6	40328.6	40336.2	40341.4
19	40351.8	40367.5	40373.3	40366.6	40352.1	40353.3	40349.1	40336.5	40327.2	40328.3	40326.0	40331.2	40336.2	40338.8	40336.7	40338.0	40337.4	40336.7	40349.0	40341.3	40335.8	40334.8	40343.6	40353.4	40343.5
20	40366.3	40373.5	40370.1	40367.2	40358.5	40359.1	40347.8	40344.8	40348.4	40350.8	40350.2	40350.7	40346.9	40345.7	40343.9	40339.1	40344.2	40346.7	40351.5	40356.7	40360.0	40358.2	40354.9	40363.0	40354.1
21	40365.5	40375.4	40380.0	40389.9	40388.2	40386.7	40371.5	40352.5	40337.5	40344.0	40343.6	40345.1	40347.1	40345.5	40347.2	40346.4	40342.9	40346.7	40347.1	40344.7	40343.8	40343.3	40342.4	40349.0	40355.2
22	40361.0	40372.4	40385.7	40392.3	40387.6	40388.2	40374.0	40359.1	40347.4	40349.1	40349.8	40351.6	40350.2	40346.4	40347.3	40349.6	40350.9	40351.7	40352.5	40354.6	40356.0	40353.9	40358.0	40365.8	40360.6
23	40390.2	40399.3	40408.1	40407.8	40404.8	40404.5	40396.0	40381.2	40362.0	40359.7	40361.6	40363.3	40362.4	40362.3	40360.2	40360.0	40361.5	40362.2	40363.1	40364.5	40364.2	40365.2	40374.7	40388.5	40376.1
24	40375.9	40392.3	40399.7	40402.3	40395.4	40396.0	40378.4	40358.5	40349.7	40352.0	40351.9	40351.6	40351.6	40351.8	40352.4	40352.8	40352.1	40352.5	40353.5	40356.3	40356.9	40356.5	40359.8	40372.2	40365.5
25	40387.2	40404.9	40409.9	40412.8	40399.0	40399.1	40380.2	40359.4	40351.8	40352.4	40351.3	40352.4	40354.5	40353.3	40350.5	40351.7	40356.2	40352.5	40352.0	40353.9	40352.2	40353.4	40362.6	40375.6	40367.9
26	40385.6	40405.9	40413.9	40412.5	40400.1	40400.5	40383.1	40363.7	40352.7	40353.9	40351.5	40351.6	40352.6	40350.8	40349.7	40353.3	40352.8	40354.4	40356.1	40357.8	40358.8	40354.0	40357.4	40369.5	40368.4
27	40383.2	40397.1	40410.7	40412.6	40403.7	40403.3	40387.4	40366.1	40352.5	40357.2	40357.1	40357.4	40352.8	40352.1	40354.1	40353.0	40353.2	40354.5	40355.6	40356.0	40356.8	40356.8	40357.3	-	40369.1
28	-	-	-	40400.2	40391.5	40391.4	40377.4	40363.4	40356.0	40359.4	40358.1	40358.0	40358.4	40359.0	40359.8	40359.6	40359.2	40360.4	40361.7	40362.5	40365.1	40367.2	40365.1	40368.7	40366.8
29	40383.4	40403.1	40415.8	40417.3	40411.1	40410.8	40394.6	40371.2	40358.3	40360.9	40360.8	-	-	-	-	-	-	-	-	-	-	-	-	-	40389.8
30	-	-	-	40399.6	40395.1	40394.7	40377.2	40355.3	40345.8	40347.5	40350.3	40352.3	40355.2	40356.2	40355.4	40353.5	40358.0	40358.9	40363.6	40365.8	40359.1	40358.4	40346.4	40359.1	40362.3
31	40364.6	40370.3	40382.3	40387.7	40380.3	40369.8	40358.5	40349.5	40346.4	40344.4	40354.0	40354.3	40329.9	40298.5	40295.7	40312.9	40316.4	40322.0	40326.6	40335.4	40335.2	40338.2	40351.6	40353.6	40344.9
HOURLY MEANS	40368.5	40380.8	40389.2	40394.0	40387.5	40379.4	40365.3	40352.5	40344.2	40344.0	40342.8	40340.7	40338.0	40336.0	40335.9	40337.8	40339.1	40341.5	40344.6	40347.5	40347.9	40347.7	40349.8	40357.1	40355.8

Tabel 88 Nilai Variasi harian komponen X – north (nT) Oktober 2021

Tondano Magnetic Observatory

Oktober 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39344.5	39356.3	39367.5	39371.8	39370.9	39355.1	39335.7	39319.4	39294.7	39298.6	39298.8	39305.6	39298.0	39296.0	39295.7	39304.8	39306.9	39312.4	39319.3	39319.8	39320.1	39323.6	39328.0	39336.7	39324.2
2	39348.5	39362.1	39376.0	39383.7	39377.2	39364.2	39347.8	39334.3	39327.2	39315.2	39298.8	39281.2	39271.4	39269.7	39279.9	39299.4	39305.9	39312.2	39315.2	39315.5	39317.0	39318.3	39322.6	39336.1	39324.1
3	39355.2	39373.2	39382.9	39387.1	39379.9	39356.4	39338.0	39328.4	39325.3	39320.6	39319.2	39321.4	-	-	-	-	-	-	-	-	-	-	-	-	39349.0
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	39359.3	39381.0	39393.4	39405.1	39398.0	39378.5	39359.4	39346.8	39343.5	39334.3	39324.7	39306.4	39301.0	39296.9	39300.4	39300.1	39289.5	39290.4	39303.5	39310.8	39317.1	39321.9	39329.3	39342.3	39334.7
7	39358.0	39370.8	39375.6	39373.7	39367.1	39352.6	39337.4	39326.1	39325.0	39325.1	39323.1	39322.4	39319.8	39313.3	39304.3	39300.0	39307.6	39313.6	39315.4	39319.2	39321.7	39322.4	39325.5	39335.0	39331.4
8	39353.3	39372.1	39387.9	39397.8	39388.7	39366.4	39344.8	39330.6	39325.9	39323.6	39323.7	39324.4	39325.8	39328.1	39324.2	39322.8	39325.3	39328.3	39330.5	39333.0	39336.5	39335.3	39332.0	39334.6	39341.5
9	39343.3	39352.8	39363.8	39375.7	39372.2	39352.3	39336.6	39325.1	39321.0	39321.4	39321.7	39322.3	39316.3	39317.0	39320.0	39324.0	39325.4	39328.9	39331.1	39333.4	39334.1	39330.5	39332.1	39340.8	39335.1
10	39354.7	39368.9	39387.5	39401.8	39391.9	39373.3	39360.3	39350.9	39347.9	39347.4	39347.5	39336.3	39315.9	39303.1	39298.4	39297.3	39303.4	39314.1	39321.8	39325.4	39328.1	39321.1	39325.9	39332.9	39339.8
11	39353.8	39366.8	39380.0	39381.1	39375.2	39359.9	39341.6	39319.6	39306.8	39298.1	39297.1	39298.7	39302.9	39311.0	39313.6	39313.4	39310.2	39311.0	39311.7	39312.6	39314.3	39319.3	39312.4	39303.2	39325.6
12	39361.1	39370.9	39376.6	39386.1	39384.1	39379.7	39367.6	39353.6	39341.1	39337.1	39337.3	39335.9	39333.9	39333.9	39333.2	39330.3	39326.5	39325.0	39328.1	39335.7	39337.8	39345.8	39354.3	39364.2	39349.2
13	39330.9	39335.3	39344.1	39350.6	39345.4	39333.9	39321.9	39315.1	39308.4	39303.9	39302.6	39300.8	39301.6	39302.5	39302.8	39306.3	39307.9	39308.0	39309.8	39311.7	39313.2	39314.4	39314.4	39321.4	39317.0
14	39339.3	39350.3	39359.6	39368.5	39361.3	39345.2	39331.2	39323.1	39319.6	39318.7	39319.3	39316.9	39314.8	39306.8	39302.4	39298.6	39300.3	39300.6	39305.9	39320.3	39329.0	39332.8	39333.6	39342.3	39326.7
15	39351.6	39363.0	39367.5	39367.3	39359.9	39344.5	39330.2	39318.6	39318.0	39318.3	39318.1	39321.4	39323.4	39323.2	39323.4	39324.7	39325.5	39326.1	39328.0	39329.2	39328.3	39328.2	39325.9	39329.5	39333.1
16	39338.2	39360.7	39371.5	39378.8	39375.2	39360.7	39348.2	39348.2	39331.1	39328.4	39329.7	39330.5	39331.8	39332.7	39332.5	39333.9	39341.1	39341.3	39334.3	39335.2	39333.5	39330.2	39329.1	39333.2	39342.1
17	39346.2	39357.7	39368.6	39375.9	39367.1	39354.7	39348.2	39348.2	39339.0	39334.9	39314.5	39290.1	39281.0	39279.2	39280.7	39288.1	39289.3	39292.7	39296.9	39308.0	39311.0	39303.9	39308.0	39317.4	39320.9
18	39323.2	39333.3	39333.2	39334.8	39329.9	39329.7	39319.4	39312.3	39306.8	39312.7	39317.9	39321.7	39321.3	39324.1	39327.9	39326.3	39324.3	39330.3	39334.2	39338.7	39325.6	39317.3	39310.2	39316.6	39323.8
19	39332.9	39350.9	39359.9	39353.4	39338.6	39338.4	39333.0	39320.3	39310.8	39311.5	39309.3	39313.8	39318.6	39321.0	39318.8	39320.1	39319.3	39317.9	39331.1	39323.1	39317.0	39314.9	39323.5	39334.0	39326.3
20	39348.4	39357.6	39355.8	39352.6	39343.8	39343.7	39331.8	39328.4	39332.1	39334.0	39333.4	39333.7	39329.9	39328.5	39326.5	39321.4	39325.8	39328.2	39333.2	39338.4	39341.7	39339.9	39336.0	39344.4	39337.1
21	39347.7	39358.4	39364.8	39374.5	39372.7	39372.7	39358.2	39339.0	39323.6	39327.3	39326.7	39327.8	39329.7	39328.0	39329.5	39328.7	39324.8	39328.4	39328.8	39326.7	39325.4	39325.1	39324.3	39331.1	39338.5
22	39343.5	39357.2	39372.7	39379.1	39374.4	39374.3	39359.3	39343.3	39331.3	39331.8	39332.4	39334.3	39333.0	39329.2	39329.7	39331.7	39333.1	39333.7	39334.4	39336.5	39338.0	39335.7	39339.3	39347.4	39344.0
23	39372.4	39382.7	39391.7	39393.2	39390.2	39390.2	39379.2	39363.5	39343.6	39341.5	39343.5	39345.0	39344.0	39343.9	39341.7	39341.1	39342.5	39343.1	39343.8	39345.1	39344.3	39344.8	39353.1	39367.9	39358.0
24	39358.3	39376.4	39385.9	39388.8	39381.8	39381.7	39364.1	39344.1	39335.1	39334.8	39334.3	39334.0	39334.0	39334.4	39334.9	39335.2	39334.4	39334.6	39335.3	39338.4	39338.9	39339.1	39343.1	39356.5	39349.1
25	39370.7	39389.7	39396.5	39398.8	39384.7	39384.7	39364.6	39343.3	39335.7	39335.8	39334.1	39335.0	39337.1	39336.1	39333.2	39334.1	39338.3	39334.6	39333.9	39335.8	39334.1	39335.9	39345.9	39360.0	39351.4
26	39370.0	39390.5	39400.4	39399.2	39386.5	39386.4	39368.5	39349.3	39338.1	39338.0	39335.0	39334.7	39335.5	39333.8	39332.5	39335.8	39335.3	39336.6	39338.2	39340.0	39340.9	39336.6	39339.2	39351.0	39352.2
27	39365.1	39379.9	39395.3	39398.1	39388.9	39388.8	39372.0	39349.8	39335.9	39340.3	39340.3	39340.2	39335.8	39335.0	39336.9	39335.7	39335.5	39336.7	39337.7	39337.6	39337.8	39338.3	39338.4	-	39352.2
28	-	-	-	39386.7	39377.7	39377.6	39363.8	39349.6	39341.9	39343.0	39341.9	39341.4	39341.7	39342.1	39342.9	39342.6	39342.1	39343.1	39344.2	39345.1	39347.4	39348.8	39346.8	39351.0	39350.5
29	39366.8	39387.4	39401.7	39403.4	39397.0	39397.0	39381.4	39358.0	39344.8	39344.5	39344.3	-	-	-	-	-	-	-	-	-	-	-	-	-	39375.1
30	-	-	-	39384.6	39380.0	39380.0	39363.7	39341.4	39329.4	39330.9	39333.3	39335.2	39337.8	39338.9	39338.3	39336.3	39340.4	39341.3	39346.1	39348.7	39342.5	39341.5	39329.9	39340.5	39345.7
31	39345.8	39350.9	39364.5	39371.4	39364.8	39354.2	39343.5	39334.2	39330.3	39328.0	39336.7	39337.1	39313.5	39282.1	39275.9	39292.2	39296.8	39302.6	39307.4	39316.4	39317.0	39320.4	39333.9	39336.6	39327.3
HOURLY MEANS	39351.2	39365.1	39375.0	39380.1	39373.3	39364.7	39350.0	39336.7	39328.1	39326.9	39325.5	39323.2	39320.4	39318.2	39317.8	39319.4	39320.6	39322.8	39325.9	39328.9	39329.3	39329.1	39331.0	39338.7	39338.8

Tabel 89 Nilai Variasi harian komponen Y – east (nT) Oktober 2021

Tondano Magnetic Observatory																							Oktober 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	316.5	309.4	310.4	312.4	317.9	327.5	336.0	344.2	347.9	345.2	334.4	331.1	333.2	331.5	334.1	335.4	333.3	335.4	336.8	335.6	335.9	336.4	335.9	329.5	331.1
2	322.0	323.2	330.1	332.5	330.7	330.6	334.5	339.6	345.7	348.6	347.3	337.2	334.6	331.8	329.7	332.1	331.8	330.9	330.5	330.3	329.7	327.8	325.4	323.6	332.5
3	321.7	321.5	326.7	329.8	336.8	341.1	345.0	345.4	343.2	339.8	335.6	334.8	-	-	-	-	-	-	-	-	-	-	-	-	335.1
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	306.4	319.3	330.9	335.8	344.7	351.8	350.9	347.4	343.8	340.8	338.3	336.0	335.8	332.8	329.5	326.3	325.5	324.0	324.6	326.2	326.1	323.7	322.1	318.0	331.7
7	316.6	319.8	329.3	341.9	345.4	345.7	344.5	345.6	343.6	341.5	338.3	336.6	335.1	333.2	328.4	327.7	329.0	329.1	330.4	331.1	330.6	330.7	327.8	319.8	333.4
8	321.4	318.0	320.1	325.8	336.8	340.9	344.4	345.6	343.1	340.8	338.1	336.5	334.7	332.9	332.2	332.2	333.6	332.6	331.5	332.2	333.8	337.8	338.7	333.5	334.1
9	332.9	332.4	327.3	323.5	326.3	333.0	339.8	342.2	342.0	342.0	338.6	336.4	334.9	333.0	331.8	332.9	333.4	333.3	332.6	332.1	330.6	330.6	326.3	320.6	332.9
10	318.7	326.3	328.4	330.2	339.4	344.5	346.7	346.6	345.0	340.6	338.2	336.1	333.2	332.0	331.0	328.9	329.1	331.6	330.3	329.6	328.5	327.3	327.6	311.1	332.5
11	298.6	297.5	301.6	317.9	340.6	350.0	350.5	346.4	344.9	342.0	337.6	335.0	333.2	333.2	332.3	332.0	330.8	331.8	332.7	333.3	336.5	336.6	328.1	319.1	330.9
12	338.5	324.9	308.5	309.1	313.2	315.8	321.2	337.4	346.0	347.4	343.6	342.0	341.2	341.9	341.0	340.9	340.5	343.0	344.3	345.1	345.5	349.6	356.4	355.7	337.2
13	315.2	317.4	318.6	322.2	331.8	338.6	343.6	346.7	347.3	342.6	337.8	336.3	334.9	332.4	329.9	329.7	330.4	329.8	329.6	329.3	328.4	330.7	327.8	318.3	331.2
14	314.2	317.4	329.4	332.7	334.4	338.1	340.9	338.0	339.8	339.9	335.7	333.0	330.2	330.2	328.6	329.4	330.1	330.0	330.5	330.6	330.3	333.2	332.2	326.7	331.5
15	322.0	315.9	310.0	319.6	331.5	339.4	341.6	343.2	344.2	342.7	339.0	337.3	334.5	332.7	332.6	332.6	332.4	332.6	332.4	331.1	330.5	331.0	329.7	327.2	331.9
16	326.2	318.1	316.2	326.6	337.8	346.2	346.3	346.3	339.5	338.3	336.7	336.1	334.9	333.0	332.1	332.0	332.1	331.5	331.2	331.9	332.1	332.2	326.5	319.1	332.6
17	315.8	313.8	320.5	330.6	335.4	339.8	345.7	345.7	345.4	342.5	340.0	337.7	333.5	329.5	329.3	328.1	326.9	329.0	326.5	327.7	328.8	332.1	323.1	309.0	330.7
18	297.0	296.0	308.1	326.3	326.3	343.2	350.2	355.3	349.8	344.7	340.2	337.0	334.0	332.6	330.7	330.5	329.8	331.5	334.3	331.8	328.8	325.4	323.2	316.0	330.1
19	310.4	303.7	301.0	312.3	312.2	329.7	342.6	354.3	350.9	345.6	337.4	334.7	333.3	332.5	332.3	331.1	331.5	331.1	328.6	329.7	332.9	339.7	335.6	324.1	329.9
20	313.4	303.2	295.6	301.9	301.8	309.9	321.2	332.1	341.5	341.7	338.1	336.2	334.1	332.6	331.9	331.9	332.5	332.3	330.2	330.3	331.2	333.7	334.2	325.4	325.7
21	314.7	309.8	304.5	314.1	314.1	325.3	332.0	336.8	341.2	339.6	335.8	334.5	332.8	331.9	330.7	331.3	331.5	331.1	330.9	329.7	329.9	328.8	324.0	320.1	327.3
22	318.5	315.4	317.9	323.4	323.3	336.7	344.2	345.5	339.7	337.8	337.1	335.4	333.2	331.7	330.4	331.2	330.9	330.9	330.9	331.1	331.3	329.4	321.7	308.2	329.8
23	344.8	331.2	322.9	317.8	317.8	319.4	333.4	343.4	353.8	351.5	344.6	342.0	341.4	340.9	339.9	340.4	340.1	340.4	340.7	341.1	343.5	349.3	357.8	347.6	339.4
24	300.2	300.4	304.1	312.5	312.5	324.6	332.2	331.8	334.0	336.4	336.3	336.5	335.5	333.4	332.0	331.6	331.5	331.8	332.2	331.6	331.5	327.3	320.3	311.4	325.5
25	317.4	327.0	336.8	346.3	346.2	351.1	352.6	345.6	330.2	330.2	332.2	332.6	333.0	331.3	330.8	330.1	332.0	331.9	331.0	329.4	328.0	320.6	312.2	306.1	331.9
26	310.7	316.2	320.5	334.5	334.4	346.2	350.8	348.5	340.8	337.8	335.4	334.6	333.6	332.2	331.6	331.6	331.1	330.5	329.8	328.5	327.5	322.9	322.4	320.8	331.4
27	323.3	321.0	318.7	328.6	328.5	341.1	345.7	343.7	338.4	336.6	334.3	335.4	333.4	331.5	330.2	330.6	330.5	329.6	328.5	328.2	328.9	329.6	329.9	-	331.6
28	-	-	-	320.3	320.3	331.6	336.5	336.8	340.7	341.0	337.1	335.5	334.1	333.2	332.2	331.5	330.5	329.6	329.2	329.1	330.6	334.7	326.7	309.2	331.0
29	300.9	307.3	324.7	340.3	340.3	345.1	342.4	337.7	338.8	336.9	336.0	-	-	-	-	-	-	-	-	-	-	-	-	-	331.8
30	-	-	-	347.5	347.5	355.9	356.0	348.9	337.4	334.0	333.8	333.5	332.8	331.9	330.8	331.1	331.1	330.8	330.1	327.8	324.4	319.6	304.3	297.0	332.7
31	298.2	308.3	322.7	336.9	349.8	352.6	344.3	337.6	335.2	332.6	331.2	333.1	328.3	320.9	324.5	326.8	325.7	324.7	324.1	322.9	318.6	310.0	304.4	294.9	325.3
HOURLY MEANS	316.2	315.3	318.0	326.0	330.3	337.8	341.9	343.4	342.5	340.7	337.5	335.8	334.2	332.5	331.5	331.5	331.4	331.5	331.3	331.0	330.9	330.8	327.6	319.7	331.5

Tabel 90 Nilai Variasi harian komponen D – *declination* (menit) Oktober 2021

Tondano Magnetic Observatory

Oktober 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	27.67	27.03	27.11	27.28	27.77	28.62	29.37	30.10	30.45	30.21	29.27	28.97	29.16	29.01	29.24	29.35	29.16	29.34	29.46	29.35	29.38	29.42	29.38	28.81	28.95
2	28.14	28.24	28.83	29.03	28.88	28.89	29.24	29.69	30.23	30.50	30.39	29.52	29.30	29.06	28.87	29.06	29.03	28.95	28.91	28.90	28.84	28.67	28.46	28.30	29.08
3	28.11	28.09	28.53	28.79	29.41	29.81	30.16	30.21	30.01	29.72	29.36	29.28	-	-	-	-	-	-	-	-	-	-	-	-	29.29
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	26.78	27.88	28.89	29.31	30.09	30.73	30.66	30.36	30.05	29.79	29.58	29.40	29.39	29.13	28.83	28.55	28.49	28.36	28.40	28.54	28.52	28.31	28.16	27.80	29.00
7	27.66	27.93	28.76	29.87	30.18	30.21	30.12	30.22	30.05	29.87	29.59	29.44	29.31	29.15	28.74	28.68	28.78	28.79	28.90	28.96	28.92	28.92	28.66	27.96	29.15
8	28.09	27.78	27.95	28.44	29.41	29.78	30.10	30.22	30.00	29.80	29.57	29.43	29.27	29.11	29.06	29.06	29.18	29.08	28.99	29.05	29.19	29.53	29.61	29.16	29.20
9	29.10	29.05	28.59	28.26	28.50	29.10	29.71	29.93	29.91	29.91	29.61	29.42	29.30	29.13	29.02	29.11	29.16	29.15	29.08	29.04	28.91	28.91	28.54	28.03	29.10
10	27.85	28.50	28.67	28.82	29.64	30.09	30.30	30.29	30.16	29.77	29.56	29.39	29.15	29.05	28.96	28.78	28.80	29.01	28.89	28.83	28.73	28.63	28.65	27.20	29.07
11	26.09	25.99	26.34	27.77	29.75	30.58	30.64	30.30	30.18	29.93	29.54	29.32	29.16	29.15	29.07	29.04	28.94	29.02	29.10	29.16	29.43	29.44	28.71	27.92	28.94
12	29.58	28.38	26.94	26.99	27.35	27.58	28.06	29.48	30.25	30.37	30.04	29.90	29.83	29.89	29.82	29.81	29.77	30.00	30.11	30.17	30.20	30.55	31.14	31.08	29.47
13	27.56	27.75	27.85	28.16	29.01	29.60	30.05	30.33	30.38	29.98	29.56	29.43	29.31	29.08	28.87	28.85	28.91	28.85	28.83	28.81	28.73	28.93	28.68	27.84	28.97
14	27.47	27.74	28.78	29.07	29.21	29.55	29.81	29.56	29.72	29.73	29.36	29.13	28.88	28.89	28.76	28.83	28.89	28.88	28.91	28.92	28.88	29.14	29.05	28.56	28.99
15	28.14	27.60	27.08	27.92	28.96	29.67	29.87	30.02	30.10	29.98	29.65	29.50	29.26	29.09	29.09	29.09	29.07	29.09	29.06	28.95	28.91	28.94	28.83	28.61	29.02
16	28.52	27.79	27.62	28.52	29.50	30.25	30.27	30.27	29.69	29.59	29.44	29.39	29.28	29.11	29.04	29.02	29.03	28.98	28.96	29.02	29.04	29.05	28.55	27.90	29.08
17	27.60	27.42	28.00	28.87	29.30	29.70	30.21	30.21	30.20	29.95	29.74	29.56	29.20	28.85	28.83	28.72	28.61	28.80	28.57	28.67	28.77	29.06	28.27	27.02	28.92
18	25.98	25.89	26.94	28.53	28.53	30.01	30.63	31.08	30.60	30.15	29.75	29.48	29.21	29.09	28.92	28.90	28.84	28.98	29.23	29.00	28.76	28.46	28.28	27.64	28.87
19	27.14	26.54	26.30	27.29	27.29	28.83	29.95	30.99	30.69	30.24	29.52	29.28	29.15	29.08	29.07	28.96	29.00	28.96	28.73	28.83	29.12	29.71	29.35	28.34	28.85
20	27.39	26.50	25.83	26.38	26.38	27.09	28.08	29.04	29.86	29.88	29.56	29.39	29.22	29.08	29.03	29.03	29.08	29.06	28.87	28.88	28.95	29.18	29.22	28.45	28.48
21	27.51	27.07	26.61	27.44	27.44	28.42	29.01	29.45	29.84	29.70	29.36	29.25	29.10	29.02	28.92	28.97	29.00	28.95	28.94	28.83	28.85	28.76	28.34	27.99	28.61
22	27.84	27.56	27.76	28.24	28.24	29.41	30.07	30.20	29.70	29.53	29.47	29.32	29.13	29.01	28.89	28.96	28.93	28.93	28.94	28.95	28.96	28.80	28.13	26.94	28.83
23	30.12	28.92	28.20	27.75	27.75	27.89	29.12	30.00	30.93	30.73	30.12	29.89	29.84	29.80	29.71	29.76	29.73	29.75	29.79	29.82	30.03	30.53	31.27	30.37	29.66
24	26.23	26.24	26.55	27.29	27.29	28.34	29.02	29.00	29.20	29.41	29.40	29.42	29.34	29.15	29.03	28.99	28.98	29.01	29.04	28.99	28.98	28.61	28.00	27.21	28.45
25	27.73	28.55	29.40	30.23	30.23	30.66	30.80	30.21	28.87	28.87	29.04	29.08	29.11	28.97	28.92	28.86	29.02	29.02	28.94	28.80	28.68	28.03	27.29	26.75	29.00
26	27.14	27.61	27.98	29.20	29.20	30.23	30.65	30.46	29.79	29.53	29.33	29.25	29.17	29.04	28.99	28.99	28.95	28.90	28.83	28.72	28.63	28.23	28.19	28.04	28.96
27	28.25	28.03	27.83	28.68	28.68	29.78	30.20	30.04	29.59	29.43	29.22	29.32	29.15	28.98	28.87	28.91	28.90	28.82	28.72	28.70	28.76	28.82	28.84	-	28.98
28	-	-	-	27.97	27.97	28.96	29.40	29.44	29.78	29.81	29.47	29.33	29.21	29.12	29.04	28.98	28.89	28.81	28.78	28.77	28.89	29.26	28.56	27.03	28.93
29	26.28	26.83	28.34	29.71	29.71	30.12	29.90	29.51	29.61	29.45	29.37	-	-	-	-	-	-	-	-	-	-	-	-	-	28.98
30	-	-	-	30.35	30.35	31.08	31.10	30.50	29.50	29.21	29.19	29.16	29.09	29.02	28.92	28.95	28.95	28.92	28.86	28.65	28.36	27.94	26.61	25.97	29.08
31	26.07	26.95	28.20	29.43	30.56	30.81	30.10	29.52	29.31	29.09	28.95	28.98	28.72	28.10	28.41	28.60	28.50	28.41	28.36	28.24	27.87	27.11	26.62	25.78	28.45
HOURLY MEANS	27.63	27.55	27.77	28.47	28.85	29.51	29.88	30.02	29.95	29.80	29.52	29.36	29.23	29.08	29.00	28.99	28.98	28.99	28.97	28.95	28.94	28.92	28.64	27.95	28.98

Tabel 91 Nilai variasi harian komponen I – *inclination* (derajat) Oktober 2021

Tondano Magnetic Observatory

Oktober 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS	
1	-12.89	-12.87	-12.86	-12.86	-12.86	-12.86	-12.86	-12.87	-12.88	-12.90	-12.89	-12.90	-12.90	-12.90	-12.91	-12.91	-12.90	-12.91	-12.91	-12.90	-12.90	-12.90	-12.90	-12.89	-12.89	
2	-12.89	-12.88	-12.87	-12.87	-12.86	-12.87	-12.87	-12.88	-12.88	-12.90	-12.90	-12.90	-12.91	-12.91	-12.92	-12.92	-12.91	-12.91	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89	-12.89	
3	-12.88	-12.86	-12.85	-12.84	-12.84	-12.85	-12.87	-12.88	-12.88	-12.89	-12.89	-12.90	-	-	-	-	-	-	-	-	-	-	-	-	-12.87	
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	-12.87	-12.86	-12.86	-12.85	-12.85	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.91	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.89	-12.88	-12.89
7	-12.87	-12.86	-12.85	-12.85	-12.85	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.91	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89
8	-12.89	-12.87	-12.85	-12.84	-12.84	-12.86	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.88	
9	-12.90	-12.89	-12.88	-12.87	-12.86	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89	-12.89	
10	-12.88	-12.87	-12.85	-12.85	-12.85	-12.86	-12.87	-12.88	-12.88	-12.88	-12.88	-12.88	-12.89	-12.90	-12.90	-12.91	-12.91	-12.91	-12.90	-12.90	-12.90	-12.90	-12.92	-12.90	-12.89	
11	-12.88	-12.87	-12.86	-12.86	-12.88	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.90	-12.90	-12.90	-12.89	
12	-12.89	-12.87	-12.86	-12.87	-12.88	-12.88	-12.88	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.90	-12.91	-12.90	-12.90	-12.89	
13	-12.89	-12.89	-12.87	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.90	-12.89	
14	-12.89	-12.87	-12.87	-12.86	-12.86	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.90	-12.90	-12.90	-12.90	-12.89	
15	-12.89	-12.87	-12.86	-12.86	-12.86	-12.87	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89	
16	-12.89	-12.88	-12.86	-12.86	-12.87	-12.87	-12.87	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.89	-12.89	
17	-12.89	-12.89	-12.88	-12.87	-12.87	-12.87	-12.87	-12.87	-12.88	-12.88	-12.89	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.89	
18	-12.90	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.89	-12.89	-12.89	-12.89	-12.91	-12.89	
19	-12.90	-12.88	-12.86	-12.86	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.89	-12.90	-12.90	-12.91	-12.91	-12.90	-12.89	
20	-12.89	-12.88	-12.87	-12.87	-12.87	-12.88	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.89	-12.89	-12.89	-12.90	-12.90	-12.89	
21	-12.89	-12.88	-12.87	-12.87	-12.87	-12.86	-12.86	-12.86	-12.87	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89	-12.89	
22	-12.89	-12.87	-12.86	-12.86	-12.86	-12.86	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.88	
23	-12.89	-12.88	-12.88	-12.86	-12.86	-12.86	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.90	-12.89	
24	-12.89	-12.88	-12.86	-12.86	-12.86	-12.86	-12.87	-12.87	-12.87	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	-12.88	
25	-12.88	-12.87	-12.86	-12.86	-12.86	-12.86	-12.87	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	-12.88	-12.88	
26	-12.87	-12.87	-12.86	-12.85	-12.86	-12.86	-12.87	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.89	-12.88	
27	-12.89	-12.88	-12.87	-12.86	-12.87	-12.86	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-	-12.88
28	-	-	-	-12.86	-12.86	-12.86	-12.86	-12.87	-12.87	-12.88	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	
29	-12.88	-12.87	-12.86	-12.86	-12.86	-12.86	-12.86	-12.86	-12.86	-12.88	-12.88	-	-	-	-	-	-	-	-	-	-	-	-	-	-12.87	
30	-	-	-	-12.87	-12.87	-12.86	-12.86	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	-12.89	-12.89	-12.90	-12.88	
31	-12.90	-12.90	-12.89	-12.88	-12.87	-12.87	-12.87	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.91	-12.92	-12.91	-12.91	-12.91	-12.90	-12.90	-12.90	-12.89	-12.89	-12.89	
HOURLY MEANS	-12.89	-12.88	-12.86	-12.86	-12.86	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89	

2. Gangguan badai magnet

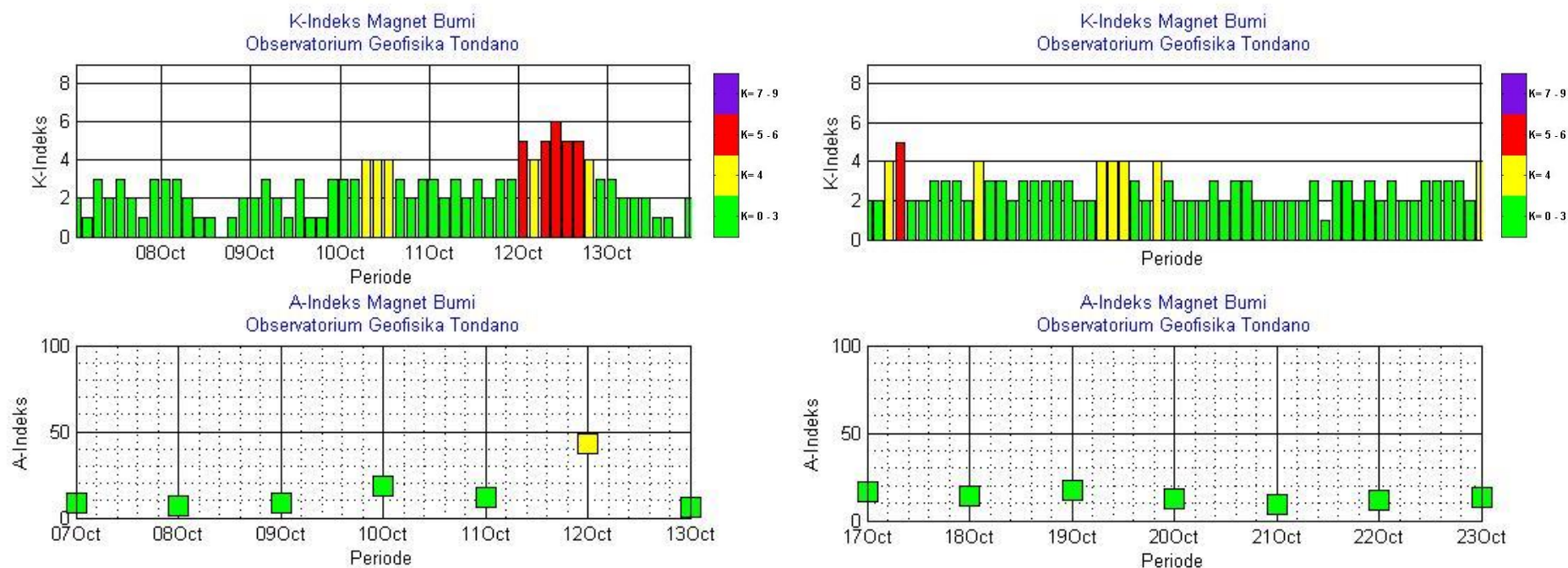
Tabel 92 Monitoring waktu gangguan pada pengamatan magnet bumi Oktober 2021

Kejadian rekaman magnet bumi						Durasi gangguan	Keterangan	
No	Hari			Waktu				
	Tanggal	Bulan	Tahun	Jam	Menit	Detik		
1	1	10	2021					
2	2	10	2021					
3	3	10	2021					
4	4	10	2021					
5	5	10	2021					
6	6	10	2021					
7	7	10	2021					
8	8	10	2021					
9	9	10	2021					
10	10	10	2021					
11	11	10	2021					
12	12	10	2021					
13	13	10	2021					
14	14	10	2021					
15	15	10	2021					
16	16	10	2021					
17	17	10	2021					
18	18	10	2021					
19	19	10	2021					
20	20	10	2021					
21	21	10	2021					
22	22	10	2021					
23	23	10	2021					
24	24	10	2021					
25	25	10	2021					
26	26	10	2021					
27	27	10	2021					
28	28	10	2021					
29	29	10	2021					
30	30	10	2021					
31	31	10	2021					

Tabel 93 Hasil analisa K-indeks dan A-indeks Oktober 2021

Tanggal	K-1	K-2	K-3	K-4	K-5	K-6	K-7	K-8	A Indeks	Keterangan
1	3	3	4	4	3	2	1	3	15.500	Tenang
2	2	1	1	5	4	3	0	3	14.750	Tenang
3	2	3	3	1	0	0	0	0	5.000	Tenang
4	-	-	-	-	-	-	-	-	-	Tenang
5	-	-	-	-	-	-	-	-	-	Tenang
6	3	4	3	4	2	3	3	4	18.500	Tenang
7	2	1	3	2	3	2	1	3	9.000	Tenang
8	3	3	2	1	1	0	1	2	6.625	Tenang
9	2	3	2	1	3	1	1	3	8.500	Tenang
10	3	3	4	4	4	3	2	3	18.500	Tenang
11	3	2	3	2	3	2	3	3	12.000	Tenang
12	5	4	5	6	5	5	4	3	42.625	Badai Kecil
13	3	2	2	2	1	1	0	2	6.125	Tenang
14	3	2	3	2	3	4	3	3	14.500	Tenang
15	2	1	3	1	1	0	1	2	5.125	Tenang
16	3	2	2	3	3	4	3	2	13.500	Tenang
17	2	2	4	5	2	2	3	3	16.625	Tenang
18	3	2	4	3	3	2	3	3	14.500	Tenang
19	3	3	3	2	2	4	4	4	17.500	Tenang
20	3	2	4	3	2	2	2	3	12.500	Tenang
21	2	3	3	2	2	2	2	2	9.000	Tenang
22	3	1	3	3	2	3	2	3	11.500	Tenang
23	2	2	3	3	3	3	2	4	13.500	Tenang
24	3	3	3	4	2	3	1	4	15.500	Tenang
25	3	3	3	3	3	3	1	4	15.000	Tenang
26	3	3	3	4	3	3	2	3	15.500	Tenang
27	3	3	3	4	3	3	2	1	14.000	Tenang
28	0	1	3	4	4	4	4	4	19.125	Tenang
29	3	4	4	3	0	0	0	0	10.500	Tenang
30	0	2	3	3	3	4	3	3	13.625	Tenang
31	3	2	3	3	5	3	2	3	17.125	Tenang

Gambar 31 Plot hasil analisa K-indeks dan A-indeks saat terjadi gangguan magnet bumi di bulan Oktober 2021



K. November 2021

1. Nilai variasi harian bulan November 2021

Tabel 94 Nilai variasi harian komponen H – *horizontal* (nT) November 2021

Tondano Magnetic Observatory

November 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39342.7	39357.6	39374.3	39371.4	39364.0	39354.8	39342.3	39329.6	39323.1	39319.6	39323.6	39324.6	39325.8	39328.7	39331.8	39333.7	39332.3	39335.6	39343.0	39339.2	39345.5	39354.0	39353.6	39356.1	39342.0
2	39370.9	39378.5	39376.0	39373.3	39359.4	39337.3	39323.2	39318.6	39323.1	39323.1	39317.2	39314.1	39310.5	39312.4	39316.5	39319.3	39319.5	39325.7	39325.7	39323.2	39322.5	39326.5	39331.2	39342.8	39332.9
3	39356.0	39362.7	39364.0	39365.8	39360.3	39350.1	39337.8	39329.1	39328.2	39330.3	39327.9	39324.9	39325.3	39327.6	39325.6	39323.4	39322.9	39323.1	39323.1	39328.8	39354.0	39347.4	39325.4	39324.0	39337.0
4	39351.1	39360.4	39361.1	39362.2	39329.5	39300.7	39254.9	39233.4	39184.2	39195.7	39217.7	39219.4	39188.8	39192.2	39247.5	39256.3	39252.9	39258.9	39265.8	39271.6	39276.8	39286.1	39300.1	39309.3	39269.9
5	39317.0	39327.3	39331.4	39331.1	39326.9	39349.0	39338.7	39318.3	39306.4	39304.2	39298.8	39296.5	39297.4	39299.6	39296.9	39291.8	39303.2	39299.1	39294.2	39296.6	39296.4	39297.6	39310.8	39339.3	39311.2
6	39378.8	39384.4	39389.8	39376.8	39375.5	39356.3	39330.7	39321.9	39315.3	39303.6	39314.8	39304.5	39296.4	39297.7	39296.7	39297.0	39295.2	39297.2	39307.6	39306.8	39302.3	39302.7	39302.4	39310.7	39323.5
7	39335.1	39361.1	39349.5	39349.8	39330.4	39317.0	39312.5	39309.5	39308.9	39309.2	39308.2	39307.0	39306.4	39307.4	39307.2	39306.7	39308.1	39309.9	39311.0	39312.6	39313.1	39313.5	39315.1	-	39317.8
8	39337.6	39347.1	39359.4	39361.6	39356.8	39346.1	39335.3	39325.6	39321.3	39320.5	39319.1	39322.6	39320.5	39318.4	39316.9	39317.3	39317.3	39319.8	39323.8	39328.4	39325.7	39323.3	39323.8	39334.8	39330.1
9	39341.6	39359.0	39366.1	39366.7	39358.5	39341.8	39323.8	39313.6	39311.8	39311.6	39309.9	39306.2	39306.8	39310.5	39312.3	39313.6	39316.9	39320.7	39321.7	39323.0	39328.8	39323.3	39317.3	39321.0	39326.1
10	39329.6	39341.1	39358.3	39365.7	39361.5	39346.4	39330.2	39312.1	39304.5	39304.5	39304.9	39310.8	39310.1	39307.7	39310.2	39311.5	39313.1	39314.2	39316.0	39316.2	39315.6	39318.6	39319.2	39326.8	39322.8
11	39341.0	39357.7	39377.0	39382.8	39376.9	39364.0	39348.9	39336.5	39328.9	39320.5	39318.0	39311.8	39318.8	39318.3	39322.8	39325.0	39327.0	39325.0	39323.6	39326.8	39329.9	39330.0	39331.5	-	39336.6
12	39353.5	39365.3	39367.4	39368.1	39366.8	39357.2	39343.9	39334.1	39329.2	39326.2	39323.0	39322.1	39322.6	39321.5	39319.6	39321.4	39321.1	39321.0	39321.3	39322.2	39324.4	39326.3	39329.3	39336.3	39335.2
13	39346.3	39358.8	39368.6	39370.6	39366.3	39353.7	39340.8	39329.6	39328.2	39328.5	39326.8	39325.9	39325.0	39324.4	39324.7	39325.4	39325.2	39326.1	39328.0	39329.7	39330.1	39327.4	39328.4	39334.0	39336.4
14	39337.4	39347.5	39361.1	39366.2	39363.1	39354.3	39347.4	39342.1	39338.4	39333.0	39330.7	39328.2	39325.6	39322.9	39320.8	39324.0	39326.1	39323.0	39323.0	39323.9	39324.5	39326.2	39329.3	39336.6	39335.6
15	39347.2	39359.2	39370.7	39374.8	39374.0	39363.2	39348.5	39336.5	39332.2	39332.7	39331.8	39330.8	39330.4	39327.6	39325.4	39317.2	39312.7	39321.3	39333.0	39337.6	39337.2	39348.9	39340.4	39343.3	39340.7
16	39352.4	39354.2	39363.9	39363.2	39341.2	39326.8	39323.2	39323.2	39318.9	39317.2	39306.4	39306.6	39307.6	39313.1	39323.0	39313.6	39312.0	39318.4	39323.8	39326.8	39324.5	39323.0	39329.1	39329.9	39326.8
17	39337.4	39345.5	39355.7	39364.8	39360.2	39349.4	39334.1	39334.1	39325.5	39318.7	39324.2	39316.8	39316.1	39320.4	39321.2	39325.6	39323.7	39321.3	39323.3	39328.7	39327.3	39327.1	39327.6	39332.3	39331.7
18	39338.6	39351.7	39363.6	39369.8	39364.6	39364.6	39350.4	39338.9	39324.3	39322.5	39323.6	39322.1	39323.2	39323.7	39322.9	39321.5	39323.6	39324.5	39324.8	39325.1	39325.6	39325.9	39332.0	39337.8	39335.2
19	39349.6	39364.4	39378.1	39380.3	39370.7	39370.7	39359.1	39344.8	39329.4	39329.4	39328.6	39328.1	39325.3	39324.7	39326.5	39330.2	39328.2	39326.5	39327.7	39332.1	39335.8	39337.7	39340.1	39347.3	39342.3
20	39362.5	39371.3	39381.1	39384.4	39381.8	39381.8	39365.9	39354.7	39331.5	39330.6	39327.5	39324.3	39328.2	39324.8	39322.4	39330.9	39324.1	39322.4	39326.8	39327.9	39327.7	39327.7	39330.0	39341.9	39343.0
21	39354.2	39360.7	39365.8	39367.5	39357.3	39357.3	39352.0	39345.4	39333.6	39323.0	39322.1	39317.2	39322.8	39324.3	39315.9	39317.4	39319.6	39332.4	39328.9	39327.4	39328.7	39328.6	39325.7	39327.1	39335.6
22	39329.4	39341.5	39350.7	39354.8	39350.4	39350.4	39346.5	39341.2	39329.7	39331.3	39329.4	39327.7	39323.6	39322.8	39322.0	39324.6	39326.3	39326.2	39326.8	39329.2	39328.1	39326.4	39328.4	39335.0	39333.4
23	39342.9	39357.4	39366.4	39367.0	39360.9	39360.9	39349.6	39339.2	39326.1	39319.1	39313.5	39316.8	39316.9	39318.5	39318.0	39316.1	39319.0	39319.3	39317.8	39322.1	39325.5	39322.1	39324.6	39330.0	39332.1
24	39341.8	39357.0	39368.6	39370.6	39367.2	39367.2	39356.2	39345.4	39331.6	39328.0	39325.3	39327.5	39327.5	39326.9	39327.7	39328.0	39326.7	39333.1	39332.4	39332.1	39332.8	39332.9	39333.2	39335.6	39339.8
25	39341.8	39351.8	39362.3	39368.0	39359.3	39359.3	39352.0	39342.2	39325.8	39322.4	39321.1	39321.4	39322.4	39323.5	39323.6	39323.8	39325.2	39326.8	39325.9	39325.9	39325.3	39327.1	39332.1	39339.3	39335.3
26	39347.8	39355.5	39362.1	39365.8	39358.8	39358.8	39348.6	39336.7	39330.2	39331.1	39333.2	39332.2	39330.0	39328.8	39332.7	39334.4	39334.6	39336.4	39336.1	39337.5	39337.2	39338.0	39339.5	39343.9	39341.2
27	39352.4	39363.4	39369.1	39371.6	39368.7	39368.7	39358.4	39344.7	39332.9	39334.4	39332.6	39330.4	39325.5	39322.6	39321.4	39322.1	39322.6	39323.3	39324.5	39326.2	39327.8	39330.9	39335.2	39366.0	39340.6
28	39370.1	39372.5	39375.1	39363.2	39369.6	39369.6	39370.1	39368.4	39347.3	39344.9	39338.7	39329.4	39330.1	39333.0	39332.0	39332.6	39335.5	39335.3	39335.4	39336.1	39337.1	39335.2	39338.7	39334.6	39347.3
29	39326.1	39331.4	39336.4	39342.0	39334.3	39334.3	39326.6	39325.5	39322.5	39320.9	39316.3	39311.0	39309.0	39310.2	39312.4	39314.0	39317.9	39319.0	39320.8	39322.5	39327.3	39330.7	39330.7	39332.7	39323.9
30	39341.3	39352.3	39364.9	39372.1	39369.1	39369.1	39361.7	39348.9	39332.4	39331.5	39331.7	39330.7	39330.2	39330.3	39331.3	39334.3	39339.7	39342.1	39345.0	39351.7	39351.5	39335.2	39328.9	39318.2	39343.5
HOURLY MEANS	39345.8	39356.6	39364.6	39366.4	39359.5	39352.7	39340.4	39330.8	39320.8	39318.9	39318.2	39316.4	39315.0	39315.5	39317.6	39318.4	39319.1	39320.9	39322.7	39324.6	39326.3	39326.7	39327.8	39334.5	39331.7

Tabel 95 Nilai variasi harian komponen Z – *vertical* (nT) November 2021

Tondano Magnetic Observatory

November 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-9000.0	-8997.9	-8990.7	-8985.8	-8989.4	-8985.3	-8981.7	-8980.6	-8980.6	-8989.2	-8992.1	-8995.2	-8997.4	-8997.7	-8998.0	-8998.0	-8998.8	-9000.2	-9001.6	-8998.2	-9001.1	-8997.8	-8994.9	-8998.6	-8993.8
2	-8998.6	-8993.0	-8992.9	-8994.0	-8994.5	-8992.2	-8989.1	-8988.6	-8988.6	-8989.6	-8989.6	-8995.2	-8996.3	-8998.3	-8998.9	-8999.0	-8998.4	-9001.1	-9000.7	-8999.4	-8999.1	-8997.1	-8994.4	-8996.1	-8995.2
3	-8997.1	-8996.2	-8995.2	-8996.4	-8996.3	-8994.3	-8989.7	-8988.2	-8988.2	-8992.0	-8994.4	-8995.6	-8996.7	-8996.6	-8996.9	-8998.5	-8998.9	-8999.0	-8999.3	-9001.6	-9002.3	-8993.1	-9002.4	-9007.7	-8996.5
4	-9006.5	-8994.1	-8994.0	-8995.2	-8989.2	-8997.6	-9000.9	-9005.1	-9005.1	-8999.9	-9019.8	-9006.8	-8991.4	-9003.4	-9012.1	-8999.4	-8997.5	-9000.1	-9000.8	-9001.4	-9001.2	-8999.7	-9002.5	-9003.2	-9001.1
5	-9004.2	-9007.7	-9007.4	-9007.3	-9010.0	-9017.9	-9004.6	-8993.6	-8993.6	-8995.5	-8994.5	-8996.3	-8998.8	-8999.5	-8998.7	-8997.8	-9003.0	-8999.0	-9002.2	-9003.8	-9001.8	-9001.4	-8999.1	-8996.7	-9001.4
6	-8990.5	-8983.0	-8981.7	-8982.0	-8990.6	-8993.0	-8993.2	-8998.7	-8998.7	-8990.1	-8998.3	-8991.0	-8995.4	-8998.0	-8997.7	-8997.7	-8999.9	-9004.7	-9003.2	-9002.7	-9002.0	-9007.7	-9001.3	-8999.3	-8995.8
7	-8998.1	-8989.8	-8982.0	-8984.2	-8980.0	-8985.6	-8991.3	-8992.7	-8992.7	-8996.0	-8996.3	-8996.6	-8997.8	-8998.5	-8998.9	-8999.1	-9000.2	-9001.0	-9000.9	-9001.0	-9001.4	-9003.2	-9004.0	-	-8995.3
8	-9003.7	-8999.4	-8993.9	-8987.4	-8986.2	-8985.7	-8988.1	-8991.6	-8991.6	-8994.8	-8995.4	-8997.2	-8995.4	-8996.3	-8997.0	-8998.3	-8999.2	-9001.0	-9001.0	-9000.1	-9001.4	-9001.8	-9002.5	-9002.3	-8996.3
9	-8998.6	-8993.6	-8984.2	-8979.3	-8977.0	-8978.2	-8982.4	-8987.8	-8987.8	-8994.7	-8994.4	-8995.5	-8997.0	-8997.5	-8997.6	-8998.0	-8998.9	-8999.6	-8998.6	-9000.3	-9001.3	-9001.3	-9003.2	-9000.9	-8993.7
10	-9001.0	-9000.5	-8998.4	-8995.4	-8990.5	-8987.8	-8988.1	-8986.7	-8986.7	-8995.6	-8997.1	-8999.1	-8997.6	-8997.4	-8998.9	-8999.0	-8999.7	-8999.5	-9000.1	-8999.7	-8999.9	-9000.6	-9000.1	-9002.4	-8996.7
11	-9000.0	-8997.8	-8993.6	-8990.4	-8986.4	-8987.0	-8985.7	-8988.9	-8988.9	-8990.8	-8994.5	-8994.4	-8998.3	-8996.3	-8998.6	-8998.7	-8998.6	-8997.7	-8998.7	-8999.4	-8999.4	-8997.7	-8997.9	-	-8994.8
12	-8997.8	-8990.3	-8986.5	-8992.7	-8995.7	-8999.2	-8998.8	-8998.4	-8998.4	-8996.6	-8997.1	-8998.8	-8999.2	-8998.6	-8997.7	-8998.7	-8999.0	-8999.1	-8999.6	-8999.8	-9000.5	-9000.3	-9000.8	-9003.7	-8997.8
13	-9002.4	-8998.7	-8993.5	-8990.0	-8988.2	-8986.0	-8985.2	-8988.2	-8988.2	-8995.6	-8996.4	-8997.4	-8997.7	-8998.3	-8998.4	-8998.3	-8998.7	-8999.9	-9000.1	-9000.0	-8999.1	-9002.3	-9005.7	-8996.1	
14	-9006.9	-9008.0	-9004.8	-9000.7	-8998.4	-8996.8	-8998.3	-8999.8	-8999.8	-8996.6	-8996.9	-8997.4	-8997.9	-8998.5	-8998.4	-9000.4	-8999.2	-8999.6	-9000.3	-9000.3	-8999.4	-8997.8	-8996.9	-8998.2	-8999.6
15	-8999.2	-9000.1	-9001.6	-8997.9	-8995.5	-8990.1	-8989.5	-8992.1	-8994.6	-8996.7	-8997.1	-8998.2	-8998.5	-8998.0	-8997.5	-8997.4	-9001.1	-9004.0	-9002.0	-8997.8	-8996.7	-9006.5	-9000.0	-8997.9	-8997.9
16	-9000.2	-8998.2	-8995.6	-8988.4	-8989.4	-8997.3	-8997.3	-8997.3	-8997.3	-8992.1	-8991.5	-8996.3	-8996.7	-8998.9	-8999.4	-8994.5	-8998.1	-9002.4	-9001.2	-8999.7	-8998.6	-9000.1	-9000.1	-8995.3	-8996.9
17	-8995.1	-8995.1	-8991.1	-8988.5	-8987.2	-8988.9	-8988.4	-8988.4	-8988.4	-8993.7	-8995.8	-8995.9	-8998.5	-8999.7	-8999.3	-8999.5	-8999.5	-8999.4	-9001.1	-9001.0	-8997.3	-8998.0	-8996.6	-8996.3	-8995.1
18	-8995.4	-8995.5	-8994.9	-8996.3	-8996.3	-8992.2	-8992.1	-8991.6	-8991.6	-8989.1	-8991.3	-8993.4	-8995.3	-8995.7	-8996.4	-8997.5	-8998.2	-8999.1	-8999.2	-8999.9	-8999.6	-8999.1	-9000.7	-9000.2	-8995.9
19	-8999.6	-8999.0	-8996.6	-8992.8	-8992.8	-8990.9	-8992.9	-8995.9	-8995.9	-8993.7	-8993.7	-8994.6	-8994.6	-8996.2	-8996.7	-8997.9	-8998.0	-8998.4	-8999.8	-9000.3	-9000.2	-8996.1	-8992.0	-8993.7	-8995.9
20	-8995.1	-8989.1	-8983.1	-8977.8	-8977.8	-8978.5	-8983.7	-8987.9	-8987.9	-8992.9	-8991.6	-8992.5	-8994.5	-8995.6	-8995.8	-8999.9	-8993.7	-8997.3	-9000.7	-8999.2	-9000.0	-8997.2	-8997.7	-9000.2	-8992.1
21	-9000.2	-8998.9	-8993.4	-8991.5	-8991.5	-8989.2	-8994.9	-8994.1	-8994.1	-8991.5	-8995.6	-8992.4	-8999.1	-8995.8	-8995.4	-8998.4	-9001.4	-9002.7	-8998.3	-8998.2	-9000.0	-8998.7	-8994.6	-8994.4	-8996.0
22	-8995.5	-8999.5	-8996.9	-8992.8	-8992.8	-8994.5	-8993.3	-8992.0	-8992.0	-8995.1	-8994.2	-8995.0	-8994.5	-8997.0	-8996.5	-8998.8	-8999.2	-8998.5	-9001.4	-9001.0	-9000.2	-9000.1	-9001.0	-9001.5	-8996.8
23	-9002.6	-8999.3	-8993.1	-8986.4	-8986.4	-8987.9	-8988.3	-8990.7	-8990.7	-8992.3	-8994.3	-8998.2	-8996.5	-8996.5	-8997.4	-8997.1	-8997.9	-8996.8	-8998.7	-9001.9	-9000.3	-8997.2	-8995.4	-8992.8	-8995.0
24	-8990.9	-8986.3	-8986.8	-8985.1	-8985.1	-8986.4	-8983.9	-8985.4	-8985.4	-8990.4	-8992.2	-8996.0	-8996.1	-8995.8	-8996.1	-8996.5	-8996.6	-8999.1	-8996.7	-8998.0	-8997.9	-8997.5	-8997.5	-8998.1	-8992.5
25	-8997.7	-8994.6	-8996.6	-8992.2	-8992.2	-8986.1	-8990.2	-8991.7	-8991.7	-8993.3	-8994.6	-8995.6	-8996.5	-8997.0	-8996.9	-8997.1	-8998.2	-8998.3	-8998.3	-8998.6	-8998.1	-8998.4	-8999.3	-9004.0	-8995.7
26	-9008.6	-9009.1	-9004.4	-9002.6	-9002.6	-9001.5	-8995.5	-8997.2	-8997.2	-9000.2	-8999.0	-8997.5	-8996.8	-8996.6	-8998.1	-8997.8	-8996.8	-8997.6	-8997.5	-8998.0	-8997.7	-8995.5	-8992.9	-8991.8	-8998.9
27	-8990.3	-8990.5	-8985.9	-8984.6	-8984.6	-8979.0	-8977.6	-8980.5	-8980.5	-8995.8	-8994.6	-8994.0	-8994.3	-8995.2	-8997.1	-8997.6	-8997.7	-8997.7	-8998.2	-8998.3	-8999.5	-9002.1	-9005.9	-9013.3	-8993.1
28	-9020.6	-9022.1	-9008.5	-9000.8	-9000.8	-9002.0	-8992.0	-8988.2	-8988.2	-8995.0	-8994.8	-8994.7	-8997.8	-8999.2	-8998.1	-8999.3	-8999.6	-8998.6	-8996.9	-8998.7	-9000.1	-9001.9	-9000.6	-8999.6	-8999.9
29	-9006.8	-9012.2	-9009.5	-8999.9	-8999.9	-8992.8	-8993.6	-8991.8	-8991.8	-8996.9	-8994.0	-8995.1	-8997.3	-8998.1	-8999.4	-8998.7	-8999.6	-8998.6	-8999.2	-9000.1	-9000.4	-9000.5	-8998.2	-8998.1	-8998.9
30	-9001.7	-9003.8	-9001.9	-8997.6	-8997.6	-8988.5	-8985.6	-8986.9	-8992.6	-8996.9	-8998.1	-8997.9	-8998.5	-8998.7	-8999.5	-8998.9	-9000.0	-9000.0	-9000.0	-8999.9	-8996.6	-8994.7	-8996.7	-9002.6	-8997.3
HOURLY MEANS	-9000.2	-8998.1	-8994.6	-8991.9	-8991.5	-8991.1	-8990.5	-8991.4	-8991.6	-8994.1	-8995.6	-8996.1	-8996.7	-8997.6	-8998.2	-8998.3	-8998.8	-8999.6	-8999.9	-8999.9	-8999.8	-8999.4	-8999.1	-8999.8	-8996.4

Tabel 96 Nilai Variasi harian komponen F – total (nT) November 2021

Tondano Magnetic Observatory

November 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	40358.9	40373.1	40387.8	40383.8	40377.3	40367.5	40354.6	40341.9	40335.5	40334.1	40338.6	40340.3	40342.0	40344.8	40347.9	40349.8	40348.6	40352.1	40359.6	40355.2	40361.9	40369.5	40368.4	40371.7	40356.9
2	40386.2	40392.3	40389.9	40387.4	40374.0	40352.0	40337.6	40333.0	40337.4	40337.6	40331.8	40330.1	40326.8	40329.0	40333.2	40336.0	40336.0	40342.6	40342.6	40339.9	40339.1	40342.6	40346.6	40358.2	40348.4
3	40371.3	40377.6	40378.7	40380.7	40375.3	40364.9	40351.9	40343.1	40342.2	40345.2	40343.3	40340.7	40341.3	40343.5	40341.6	40339.8	40339.4	40339.7	40339.8	40345.8	40370.5	40362.1	40342.6	40342.5	40352.6
4	40368.7	40374.9	40375.6	40376.9	40343.7	40317.5	40273.6	40253.6	40205.6	40215.7	40241.5	40240.3	40207.1	40213.1	40268.9	40274.7	40270.9	40277.4	40284.2	40290.0	40295.1	40303.7	40318.0	40327.1	40288.2
5	40334.9	40345.6	40349.6	40349.3	40345.8	40369.1	40356.2	40333.7	40322.2	40320.5	40315.0	40313.2	40314.6	40316.8	40314.0	40308.9	40321.1	40316.3	40312.2	40314.9	40314.3	40315.3	40327.7	40355.0	40328.6
6	40392.1	40395.8	40400.8	40388.2	40388.8	40370.7	40345.8	40338.4	40332.0	40318.7	40331.4	40319.7	40312.8	40314.7	40313.7	40314.0	40312.7	40315.7	40325.4	40324.6	40320.1	40321.7	40320.0	40327.6	40339.4
7	40351.1	40374.7	40361.6	40362.4	40342.5	40330.7	40327.6	40325.0	40324.5	40325.4	40324.5	40323.5	40323.1	40324.2	40324.1	40323.7	40325.3	40327.2	40328.3	40329.9	40330.4	40331.3	40333.0	-	40333.7
8	40354.8	40363.2	40373.9	40374.6	40369.7	40359.1	40349.1	40340.4	40336.2	40336.2	40334.9	40338.7	40336.4	40334.5	40333.2	40333.8	40334.1	40336.8	40340.8	40345.1	40342.8	40340.5	40341.1	40351.8	40345.9
9	40357.6	40373.5	40378.3	40377.8	40369.3	40353.2	40336.6	40327.9	40326.1	40327.5	40325.8	40322.4	40323.3	40327.1	40328.8	40330.1	40333.6	40337.5	40338.2	40339.8	40345.7	40340.3	40334.9	40338.0	40341.4
10	40346.4	40357.5	40373.8	40380.3	40375.2	40359.9	40344.2	40326.2	40318.8	40320.7	40321.5	40327.7	40326.7	40324.3	40327.1	40328.3	40330.0	40331.1	40333.0	40333.1	40332.5	40335.6	40336.1	40344.0	40338.9
11	40357.3	40373.2	40391.0	40396.0	40389.3	40376.9	40361.9	40350.4	40343.0	40335.3	40333.7	40327.6	40335.3	40334.4	40339.2	40341.5	40343.4	40341.2	40340.1	40343.4	40346.4	40346.1	40347.6	-	40351.9
12	40369.1	40378.8	40380.0	40382.1	40381.6	40372.9	40359.9	40350.2	40345.4	40342.2	40339.2	40338.6	40339.2	40338.0	40336.0	40337.9	40337.7	40337.7	40338.1	40338.9	40341.3	40343.1	40346.1	40353.6	40351.1
13	40363.1	40374.4	40382.8	40384.0	40379.3	40366.6	40353.9	40343.5	40342.3	40344.2	40342.7	40342.0	40341.2	40340.6	40341.1	40341.7	40341.6	40342.5	40344.6	40346.3	40346.7	40343.9	40345.6	40351.8	40351.9
14	40355.4	40365.5	40378.0	40382.0	40378.5	40369.6	40363.2	40358.4	40354.7	40348.8	40346.6	40344.3	40341.8	40339.4	40337.3	40340.9	40342.6	40339.7	40339.8	40340.7	40341.1	40342.4	40345.2	40352.7	40352.0
15	40363.3	40375.1	40386.6	40389.8	40388.5	40376.8	40362.3	40351.2	40347.5	40348.5	40347.7	40347.0	40346.7	40343.8	40341.6	40333.5	40330.0	40339.0	40350.0	40353.5	40352.9	40366.5	40356.7	40359.1	40356.6
16	40368.5	40369.8	40378.6	40376.4	40355.1	40342.8	40339.4	40339.4	40335.2	40332.3	40321.7	40323.0	40324.1	40329.9	40339.6	40329.4	40328.7	40335.8	40340.9	40343.4	40341.0	40339.8	40345.8	40345.5	40342.8
17	40352.8	40360.6	40369.7	40378.0	40373.2	40363.0	40348.0	40348.0	40339.6	40334.2	40340.0	40332.9	40332.7	40337.2	40337.9	40342.2	40340.4	40338.0	40340.3	40345.6	40343.4	40343.3	40343.5	40348.0	40347.2
18	40354.0	40366.8	40378.2	40384.6	40379.5	40378.6	40364.7	40353.4	40339.2	40336.8	40338.4	40337.4	40339.0	40339.5	40338.9	40337.7	40340.0	40341.1	40341.4	40341.8	40342.3	40342.4	40348.7	40354.3	40350.8
19	40365.6	40379.9	40392.8	40394.1	40384.7	40384.2	40373.4	40360.1	40345.1	40344.6	40343.8	40343.6	40340.8	40340.6	40342.5	40346.3	40344.4	40342.9	40344.3	40348.7	40352.3	40353.3	40354.7	40362.1	40357.7
20	40377.2	40384.5	40392.7	40394.7	40392.2	40392.4	40378.0	40368.0	40345.4	40345.6	40342.3	40339.4	40343.6	40340.6	40338.3	40347.5	40339.4	40338.6	40343.7	40344.4	40344.3	40343.7	40346.1	40358.2	40357.5
21	40370.2	40376.3	40380.1	40381.3	40371.4	40370.9	40366.9	40360.3	40348.8	40337.9	40337.9	40332.4	40339.4	40340.2	40331.8	40334.0	40336.8	40349.6	40345.1	40343.7	40345.3	40344.9	40341.2	40342.5	40351.2
22	40345.0	40357.7	40366.1	40369.2	40364.9	40365.2	40361.2	40355.8	40344.5	40346.8	40344.7	40343.2	40339.2	40338.9	40338.0	40341.1	40342.8	40342.6	40343.8	40346.0	40344.8	40343.1	40345.3	40351.8	40349.2
23	40359.8	40373.1	40380.5	40379.7	40373.7	40374.0	40363.2	40353.5	40340.7	40334.3	40329.3	40333.3	40333.0	40334.6	40334.4	40332.4	40335.4	40335.4	40334.4	40339.4	40342.3	40338.3	40340.3	40345.0	40347.5
24	40356.1	40369.9	40381.3	40382.8	40379.5	40379.8	40368.5	40358.4	40344.9	40342.5	40340.3	40343.2	40343.3	40342.7	40343.5	40343.9	40342.6	40349.4	40348.2	40348.2	40348.9	40348.9	40349.2	40351.6	40354.5
25	40357.6	40366.6	40377.3	40381.9	40373.4	40372.1	40365.9	40356.6	40340.6	40337.8	40336.7	40337.2	40338.5	40339.6	40339.7	40339.9	40341.5	40343.1	40342.2	40342.3	40341.6	40343.4	40348.5	40356.5	40350.9
26	40365.9	40373.5	40378.9	40382.1	40375.3	40375.1	40363.8	40352.5	40346.1	40347.7	40349.5	40348.2	40345.9	40344.7	40348.8	40350.4	40350.4	40352.3	40352.0	40353.5	40353.1	40353.4	40354.3	40358.3	40357.3
27	40366.3	40377.1	40381.6	40383.7	40380.9	40379.7	40369.3	40356.5	40345.1	40349.9	40347.9	40345.6	40341.0	40338.3	40337.6	40338.4	40338.8	40339.6	40340.9	40342.5	40344.3	40348.0	40353.0	40384.6	40355.4
28	40390.3	40393.0	40392.5	40379.1	40385.4	40385.7	40383.9	40381.4	40360.8	40360.0	40353.9	40344.8	40346.2	40349.3	40348.2	40349.0	40351.9	40351.5	40351.2	40352.3	40353.5	40352.1	40355.2	40351.0	40363.4
29	40344.3	40350.7	40355.0	40358.3	40350.7	40349.2	40341.9	40340.4	40337.4	40337.0	40331.9	40327.0	40325.6	40326.8	40329.3	40330.7	40334.8	40335.5	40337.5	40339.4	40344.1	40347.4	40346.9	40348.8	40340.4
30	40358.0	40369.2	40381.0	40387.1	40384.2	40382.2	40374.3	40362.1	40347.3	40347.3	40347.3	40347.9	40346.8	40346.4	40346.6	40347.8	40350.6	40356.1	40358.4	40361.3	40367.7	40366.8	40350.5	40344.8	40335.7
HOURLY MEANS	40362.1	40372.1	40379.2	40380.3	40373.4	40366.7	40354.7	40345.5	40335.8	40334.5	40334.1	40332.5	40331.2	40331.9	40334.1	40334.9	40335.7	40337.7	40339.5	40341.3	40343.0	40343.2	40344.2	40351.0	40347.4

Tabel 97 Nilai Variasi harian komponen X – *north* (nT) November 2021

Tondano Magnetic Observatory

November 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39341.5	39356.4	39373.1	39370.1	39362.5	39353.3	39340.8	39328.2	39321.6	39318.2	39322.2	39323.2	39324.4	39327.3	39330.4	39332.3	39330.9	39334.2	39341.7	39337.9	39344.2	39352.8	39352.4	39354.9	39340.6
2	39369.7	39377.3	39374.7	39371.7	39357.7	39335.6	39321.7	39317.1	39321.6	39321.7	39315.8	39312.7	39309.1	39311.0	39315.1	39318.0	39318.2	39324.3	39324.4	39321.9	39321.2	39325.2	39330.0	39341.6	39331.5
3	39354.7	39361.4	39362.7	39364.4	39358.9	39348.6	39336.4	39327.7	39326.8	39328.9	39326.5	39323.5	39323.9	39326.2	39324.2	39322.0	39321.5	39321.8	39321.8	39327.4	39352.7	39346.2	39324.1	39322.7	39335.6
4	39349.9	39359.2	39359.9	39360.9	39328.1	39299.2	39253.2	39231.7	39182.6	39194.2	39216.0	39217.8	39187.4	39190.8	39246.2	39255.0	39251.7	39257.7	39264.5	39270.3	39275.6	39284.9	39298.9	39308.1	39268.5
5	39315.8	39326.0	39330.1	39329.8	39325.5	39347.5	39337.2	39316.8	39305.0	39302.8	39297.4	39295.1	39296.0	39298.2	39295.5	39290.5	39301.8	39297.8	39292.9	39295.2	39295.1	39296.3	39309.5	39338.1	39309.8
6	39377.6	39383.1	39388.5	39375.4	39373.9	39354.7	39329.1	39320.4	39313.8	39302.2	39313.4	39303.1	39295.0	39296.4	39295.4	39295.7	39293.9	39295.8	39306.2	39305.5	39300.9	39301.2	39301.2	39309.5	39322.2
7	39334.0	39360.0	39348.4	39348.5	39329.1	39315.7	39311.1	39308.1	39307.6	39307.8	39306.8	39305.7	39305.0	39306.0	39305.8	39305.4	39306.7	39308.5	39309.7	39311.3	39311.7	39312.2	39313.8	-	39316.5
8	39336.3	39345.9	39358.1	39360.3	39355.4	39344.6	39333.8	39324.1	39319.9	39319.1	39317.7	39321.2	39319.1	39317.0	39315.5	39315.9	39316.0	39318.4	39322.5	39327.0	39324.3	39321.9	39322.4	39333.5	39328.7
9	39340.4	39357.8	39364.9	39365.5	39357.2	39340.4	39322.3	39312.1	39310.3	39310.1	39308.5	39304.8	39305.4	39309.2	39310.9	39312.2	39315.6	39319.4	39320.3	39321.7	39327.5	39321.9	39315.9	39319.6	39324.7
10	39328.2	39339.7	39356.9	39364.2	39359.9	39344.8	39328.7	39310.6	39303.0	39303.0	39303.4	39309.4	39308.7	39306.3	39308.8	39310.2	39311.7	39312.9	39314.6	39314.9	39314.2	39317.3	39317.9	39325.5	39321.5
11	39339.7	39356.5	39375.8	39381.5	39375.5	39362.5	39347.4	39335.0	39327.4	39319.0	39316.6	39310.4	39317.0	39321.4	39323.7	39325.7	39323.7	39322.3	39325.5	39328.6	39328.7	39330.2	-	39335.3	
12	39352.2	39363.9	39366.1	39366.8	39365.5	39355.7	39342.4	39332.7	39327.8	39324.9	39321.7	39320.7	39321.2	39320.2	39318.2	39320.0	39319.7	39319.7	39320.0	39320.8	39323.1	39325.0	39328.0	39335.1	39333.8
13	39345.1	39357.5	39367.3	39369.2	39364.8	39352.3	39339.4	39328.2	39326.8	39327.1	39325.4	39324.5	39323.6	39323.0	39323.3	39324.0	39323.9	39324.8	39326.6	39328.4	39328.8	39326.1	39327.1	39332.7	39335.0
14	39336.2	39346.4	39360.0	39364.9	39361.8	39353.0	39346.0	39340.7	39337.0	39331.6	39329.3	39326.8	39324.2	39321.6	39319.4	39322.7	39324.7	39321.6	39321.6	39322.5	39323.1	39324.9	39328.0	39335.4	39334.3
15	39346.0	39358.0	39369.3	39373.4	39372.6	39361.8	39347.1	39335.1	39330.8	39331.3	39330.4	39329.4	39329.0	39326.3	39324.0	39315.8	39311.3	39320.0	39331.7	39336.3	39335.9	39347.6	39339.1	39342.1	39339.3
16	39351.1	39353.0	39362.6	39361.8	39339.7	39325.2	39321.7	39321.7	39317.5	39315.8	39305.0	39305.2	39306.2	39311.8	39321.6	39312.2	39310.7	39317.1	39322.5	39325.4	39323.2	39321.7	39327.9	39328.8	39325.4
17	39336.3	39344.3	39354.6	39363.5	39358.8	39347.9	39332.6	39332.6	39324.0	39317.3	39322.8	39315.5	39314.8	39319.1	39319.8	39324.3	39322.4	39319.9	39322.0	39327.4	39326.0	39325.8	39326.3	39331.1	39330.4
18	39337.4	39350.5	39362.3	39368.5	39363.2	39363.1	39348.8	39337.4	39322.8	39321.0	39322.2	39320.7	39321.9	39322.4	39321.6	39320.2	39322.3	39323.2	39323.5	39323.8	39324.3	39324.6	39330.7	39336.5	39333.9
19	39348.3	39363.1	39376.8	39378.9	39369.3	39369.3	39357.7	39343.3	39328.0	39328.0	39327.2	39326.7	39323.9	39323.3	39325.2	39328.9	39326.8	39325.2	39326.3	39330.7	39334.5	39336.5	39339.0	39346.2	39341.0
20	39361.4	39370.2	39379.9	39383.1	39380.5	39380.4	39364.4	39353.3	39330.1	39329.1	39326.1	39322.9	39326.8	39323.5	39321.1	39329.6	39322.8	39321.1	39325.5	39326.5	39326.3	39326.4	39328.8	39340.7	39341.7
21	39353.0	39359.5	39364.6	39366.1	39355.9	39355.9	39350.5	39343.9	39332.1	39321.6	39320.7	39315.8	39321.5	39323.0	39314.6	39316.1	39318.3	39331.1	39327.5	39326.1	39327.4	39327.3	39324.5	39326.0	39334.3
22	39328.2	39340.3	39349.4	39353.5	39349.1	39349.0	39345.1	39339.8	39328.3	39329.9	39328.0	39326.3	39322.3	39321.4	39320.7	39323.2	39325.0	39324.9	39325.5	39327.8	39326.7	39325.0	39327.1	39333.7	39332.1
23	39341.7	39356.1	39365.1	39365.7	39359.6	39359.5	39348.2	39337.8	39324.7	39317.7	39312.1	39315.4	39315.5	39317.2	39316.7	39314.8	39317.6	39318.0	39316.4	39320.8	39324.2	39320.8	39323.3	39328.7	39330.7
24	39340.6	39355.8	39367.2	39369.2	39365.8	39365.8	39354.7	39344.0	39330.2	39326.6	39323.9	39326.1	39326.1	39325.6	39326.4	39326.6	39325.3	39331.7	39331.1	39330.8	39331.5	39331.6	39332.0	39334.3	39338.5
25	39340.6	39350.5	39361.0	39366.7	39358.0	39358.0	39350.7	39340.8	39324.3	39321.1	39319.7	39320.0	39321.1	39322.2	39322.3	39322.5	39323.9	39325.5	39324.6	39324.6	39324.0	39325.8	39330.8	39338.0	39334.0
26	39346.5	39354.1	39360.7	39364.3	39357.4	39357.4	39347.2	39335.3	39328.8	39329.7	39331.8	39330.9	39328.6	39327.4	39331.3	39333.0	39333.3	39335.1	39334.8	39336.2	39335.9	39336.7	39338.3	39342.7	39339.9
27	39351.2	39362.1	39367.7	39370.1	39367.3	39367.3	39357.0	39343.2	39331.5	39333.0	39331.2	39329.0	39324.2	39321.3	39320.1	39320.8	39321.2	39322.0	39323.2	39324.9	39326.5	39329.6	39333.9	39364.8	39339.3
28	39368.9	39371.3	39373.8	39361.9	39368.3	39368.2	39368.7	39367.0	39345.8	39343.4	39337.3	39328.0	39328.7	39331.6	39330.7	39331.3	39334.2	39334.0	39334.1	39334.8	39335.8	39333.8	39337.4	39333.4	39345.9
29	39324.8	39330.2	39335.2	39340.8	39333.0	39333.0	39325.3	39324.2	39321.1	39319.5	39314.9	39309.6	39307.7	39308.8	39311.0	39312.7	39316.6	39317.7	39319.5	39321.2	39326.0	39329.4	39329.4	39331.5	39322.6
30	39340.0	39351.0	39363.6	39370.8	39367.8	39367.8	39360.3	39347.6	39331.1	39330.1	39330.4	39329.3	39328.8	39329.0	39330.0	39333.0	39338.4	39340.8	39343.8	39350.4	39350.2	39334.0	39327.7	39317.0	39342.2
HOURLY MEANS	39344.6	39355.4	39363.3	39365.1	39358.1	39351.2	39339.0	39329.3	39319.4	39317.5	39316.8	39315.0	39313.6	39314.1	39316.2	39317.1	39317.7	39319.6	39321.4	39323.3	39325.0	39325.4	39326.5	39333.3	39330.3

Tabel 98 Nilai Variasi harian komponen Y – east (nT) November 2021

Tondano Magnetic Observatory

November 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	299.0	305.9	314.0	326.9	343.8	348.5	343.7	339.1	340.4	338.2	333.1	333.6	334.2	332.9	330.7	328.5	327.3	325.4	323.6	321.6	319.8	311.6	307.3	307.5	326.5
2	311.7	314.1	326.0	345.7	364.3	368.5	353.1	344.8	340.6	336.9	332.1	331.8	330.5	329.8	328.9	327.4	325.6	325.3	325.9	324.0	322.3	317.3	316.3	314.3	331.6
3	314.8	318.7	320.5	328.6	338.0	339.7	335.3	332.0	332.3	332.9	332.3	331.9	330.7	327.3	326.2	326.5	325.9	325.5	325.2	325.8	322.3	310.9	319.4	319.9	326.8
4	310.1	306.6	308.7	318.8	327.5	341.8	360.7	361.1	351.4	339.1	358.1	354.2	336.6	332.5	325.1	318.7	315.3	314.9	313.8	314.8	313.4	306.8	307.0	305.6	326.8
5	307.6	311.5	319.5	328.0	331.6	342.8	344.1	337.3	334.9	337.0	334.3	331.6	329.8	329.3	326.5	322.5	322.4	321.5	323.0	324.7	323.3	320.2	316.6	311.9	326.3
6	311.4	317.6	326.1	335.1	349.3	354.5	351.4	346.8	343.0	335.7	335.3	329.6	328.0	326.7	324.8	321.7	322.4	326.7	326.1	328.2	329.8	332.8	315.1	302.5	330.0
7	294.7	292.7	299.1	310.9	319.2	323.9	327.6	328.3	331.3	332.7	331.1	329.7	328.9	327.7	326.5	325.3	325.2	325.1	324.8	324.6	325.7	328.4	325.3	-	322.1
8	314.7	313.5	313.7	316.4	327.7	339.3	341.3	337.3	335.7	333.6	333.3	332.7	330.7	329.2	327.5	326.8	326.6	326.9	326.6	326.5	329.4	329.5	323.1	314.6	327.4
9	310.5	306.5	305.7	308.5	320.3	333.4	343.2	344.9	341.4	338.8	335.8	333.8	331.8	329.2	327.5	325.8	325.3	324.3	322.6	323.0	324.0	327.9	328.7	324.5	326.6
10	328.0	327.6	327.8	336.5	346.7	347.2	345.1	338.8	336.6	333.8	333.4	332.5	330.6	327.7	325.9	324.5	324.5	324.2	324.2	324.6	324.7	323.5	318.1	315.2	330.1
11	311.8	309.0	309.2	321.3	332.4	338.6	339.5	339.1	338.9	335.3	334.9	332.6	331.1	328.6	327.1	326.7	325.9	325.3	324.6	323.7	322.4	321.3	322.6	-	327.0
12	329.6	324.7	319.9	324.1	330.7	337.1	336.8	332.3	329.7	328.7	328.9	330.0	329.9	328.7	326.4	325.5	325.3	324.4	323.7	323.3	323.2	321.9	317.9	315.0	326.6
13	313.9	314.5	316.8	327.6	334.7	335.6	332.4	331.1	332.5	333.5	332.0	331.9	330.7	329.1	327.8	326.2	324.5	323.7	323.4	323.0	322.6	321.2	317.8	312.2	325.8
14	306.9	301.0	302.1	309.7	319.6	324.8	329.3	332.2	332.6	330.7	330.1	329.3	329.2	328.4	327.5	327.6	326.1	326.0	325.7	325.0	323.1	317.8	311.2	310.4	321.9
15	313.7	318.6	328.7	335.5	336.4	333.1	331.2	331.9	332.1	331.5	331.1	330.3	329.3	327.4	324.5	322.3	323.0	323.5	319.8	315.5	311.3	320.8	317.5	309.6	324.9
16	310.9	312.4	317.2	328.7	343.3	346.3	342.1	342.1	335.1	333.6	330.5	329.4	328.3	326.7	325.3	323.1	322.0	325.0	325.3	324.5	324.1	324.0	317.9	306.7	326.9
17	304.2	302.2	306.7	320.4	330.2	341.8	340.4	340.4	333.6	330.9	328.0	327.8	326.0	324.3	323.7	322.9	323.5	323.4	324.0	323.1	320.0	318.0	311.8	304.8	323.0
18	305.0	308.9	313.8	325.2	325.1	339.7	347.1	346.6	339.1	333.0	329.0	328.0	327.1	325.3	324.1	324.3	323.8	324.0	323.8	323.9	323.3	322.9	321.7	317.9	325.9
19	318.5	319.5	321.4	328.4	328.3	333.1	338.4	339.6	333.9	331.3	329.2	328.0	326.7	325.7	324.4	323.9	324.4	324.2	324.2	323.2	322.1	314.3	304.2	301.2	324.5
20	302.2	303.4	309.9	322.5	322.5	337.0	345.5	341.5	335.3	334.6	330.4	328.0	326.6	326.8	326.1	326.1	321.9	321.6	322.8	323.1	323.3	316.6	309.7	305.0	323.4
21	305.3	307.5	316.1	331.8	331.7	340.2	347.3	342.4	334.6	331.6	330.7	325.8	325.2	323.3	321.3	320.2	322.6	323.8	322.6	320.8	321.6	317.6	308.0	300.5	323.9
22	300.0	307.0	315.9	321.4	321.3	330.7	334.2	334.6	331.8	331.6	329.3	328.2	325.6	325.3	323.7	323.2	323.1	322.0	323.6	324.4	324.8	324.8	321.5	315.0	323.5
23	311.3	311.9	315.5	321.1	321.1	331.9	335.0	333.9	332.9	330.4	329.7	329.3	327.1	325.3	325.0	324.9	323.5	321.2	321.5	324.3	323.4	319.9	315.8	312.7	323.7
24	313.0	312.8	322.3	324.3	324.2	331.6	335.8	337.8	333.6	330.0	327.6	328.4	327.6	326.4	325.6	325.3	324.4	323.7	321.5	321.9	320.9	318.4	313.7	310.5	324.2
25	314.8	312.0	315.7	317.9	317.9	317.7	322.7	329.0	334.2	331.3	329.1	327.7	326.9	325.7	324.8	323.9	323.4	322.8	322.1	321.6	319.9	318.6	316.7	317.5	322.3
26	323.2	327.7	332.3	337.3	337.2	341.9	337.9	331.0	326.0	329.7	329.9	328.8	327.5	326.0	325.2	324.5	323.0	321.7	321.0	320.5	319.0	314.1	310.1	309.7	326.1
27	311.3	318.9	327.1	337.2	337.2	340.0	339.6	334.7	331.5	330.6	328.3	325.2	324.1	323.2	323.5	322.5	321.1	319.9	319.7	319.1	319.8	323.0	316.5	304.7	324.9
28	307.5	311.1	315.7	319.3	319.4	327.0	329.3	331.7	336.1	335.2	331.9	328.7	326.3	326.0	324.8	324.6	324.3	322.7	319.8	320.7	322.4	324.0	317.8	310.5	323.2
29	309.8	306.7	312.2	309.5	309.4	317.3	326.9	326.1	332.2	333.8	329.4	326.9	325.9	324.7	323.4	321.7	321.0	320.0	319.6	320.4	320.5	321.0	315.7	311.5	320.2
30	312.6	316.5	322.7	325.5	325.5	323.6	322.7	325.0	327.5	327.1	326.4	325.5	324.9	323.8	322.8	320.8	319.7	319.5	319.0	318.2	314.9	312.1	306.5	306.4	320.4
HOURLY MEANS	310.9	312.0	316.7	324.8	330.5	337.0	338.7	337.1	335.0	333.1	331.8	330.4	328.6	327.1	325.6	324.3	323.6	323.3	322.8	322.6	321.9	320.1	315.7	310.6	325.2

Tabel 99 Nilai Variasi harian komponen D – *declination* (menit) November 2021

Tondano Magnetic Observatory

November 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	26.14	26.73	27.42	28.56	30.04	30.46	30.05	29.66	29.77	29.59	29.13	29.17	29.23	29.11	28.92	28.73	28.62	28.45	28.29	28.12	27.96	27.23	26.86	26.87	28.54
2	27.23	27.44	28.48	30.20	31.83	32.22	30.88	30.16	29.79	29.46	29.05	29.03	28.91	28.85	28.77	28.64	28.48	28.45	28.50	28.34	28.19	27.75	27.65	27.47	28.99
3	27.51	27.84	28.00	28.71	29.53	29.69	29.31	29.03	29.06	29.11	29.06	29.03	28.92	28.62	28.53	28.55	28.51	28.47	28.45	28.49	28.16	27.17	27.93	27.98	28.57
4	27.10	26.79	26.98	27.85	28.64	29.91	31.60	31.65	30.84	29.76	31.40	31.06	29.54	29.18	28.49	27.92	27.62	27.59	27.49	27.57	27.45	26.86	26.87	26.74	28.62
5	26.91	27.24	27.94	28.68	29.00	29.96	30.08	29.51	29.31	29.49	29.26	29.02	28.86	28.82	28.57	28.22	28.21	28.14	28.27	28.42	28.29	28.03	27.70	27.27	28.55
6	27.20	27.74	28.47	29.27	30.51	30.98	30.73	30.33	30.01	29.37	29.33	28.84	28.71	28.60	28.42	28.16	28.22	28.59	28.53	28.72	28.86	29.12	27.58	26.46	28.86
7	25.77	25.58	26.14	27.17	27.91	28.34	28.66	28.72	28.99	29.11	28.97	28.85	28.78	28.67	28.57	28.46	28.46	28.44	28.42	28.40	28.49	28.73	28.46	-	28.18
8	27.51	27.41	27.41	27.65	28.63	29.65	29.85	29.50	29.36	29.18	29.15	29.10	28.93	28.79	28.65	28.59	28.57	28.59	28.57	28.56	28.81	28.82	28.26	27.51	28.63
9	27.14	26.78	26.70	26.95	27.99	29.14	30.01	30.17	29.87	29.64	29.38	29.21	29.03	28.80	28.65	28.50	28.46	28.37	28.21	28.25	28.34	28.68	28.75	28.38	28.56
10	28.69	28.64	28.65	29.39	30.29	30.35	30.18	29.64	29.45	29.21	29.17	29.09	28.92	28.67	28.51	28.39	28.39	28.37	28.36	28.39	28.40	28.29	27.83	27.56	28.87
11	27.26	27.01	27.00	28.06	29.03	29.58	29.67	29.65	29.64	29.33	29.29	29.10	28.96	28.74	28.61	28.57	28.50	28.45	28.39	28.31	28.20	28.09	28.21	-	28.59
12	28.80	28.37	27.94	28.32	28.89	29.46	29.45	29.05	28.83	28.75	28.77	28.86	28.85	28.75	28.55	28.47	28.45	28.37	28.31	28.27	28.27	28.15	27.80	27.54	28.55
13	27.44	27.48	27.68	28.62	29.24	29.33	29.06	28.95	29.08	29.17	29.04	29.03	28.92	28.78	28.67	28.53	28.38	28.31	28.28	28.25	28.21	28.09	27.79	27.30	28.48
14	26.83	26.31	26.39	27.05	27.92	28.39	28.78	29.04	29.08	28.91	28.87	28.80	28.79	28.72	28.65	28.65	28.52	28.51	28.49	28.43	28.26	27.79	27.21	27.14	28.15
15	27.42	27.84	28.71	29.30	29.38	29.11	28.95	29.02	29.04	28.98	28.95	28.88	28.79	28.63	28.38	28.19	28.26	28.29	27.97	27.58	27.21	28.04	27.76	27.07	28.41
16	27.17	27.30	27.71	28.72	30.01	30.29	29.92	29.92	29.31	29.18	28.92	28.82	28.73	28.58	28.45	28.26	28.17	28.42	28.45	28.38	28.34	28.34	27.80	26.82	28.58
17	26.60	26.42	26.80	27.99	28.85	29.88	29.77	29.77	29.18	28.95	28.69	28.68	28.52	28.36	28.32	28.24	28.29	28.29	28.34	28.26	27.98	27.81	27.27	26.65	28.25
18	26.67	27.00	27.42	28.41	28.41	29.68	30.33	30.30	29.66	29.13	28.78	28.69	28.61	28.45	28.35	28.36	28.32	28.34	28.32	28.33	28.28	28.24	28.13	27.79	28.50
19	27.84	27.91	28.07	28.68	28.68	29.10	29.57	29.69	29.20	28.97	28.79	28.68	28.57	28.49	28.37	28.33	28.37	28.35	28.35	28.26	28.16	27.48	26.59	26.33	28.37
20	26.40	26.51	27.06	28.16	28.16	29.43	30.18	29.84	29.32	29.26	28.89	28.69	28.56	28.58	28.52	28.51	28.15	28.13	28.23	28.25	28.27	27.69	27.08	26.66	28.27
21	26.68	26.87	27.62	28.99	28.99	29.73	30.35	29.93	29.26	29.00	28.92	28.50	28.44	28.27	28.10	28.01	28.22	28.32	28.21	28.05	28.12	27.78	26.94	26.28	28.32
22	26.23	26.83	27.61	28.09	28.09	28.91	29.21	29.25	29.01	29.00	28.79	28.70	28.48	28.45	28.31	28.27	28.25	28.16	28.30	28.37	28.41	28.41	28.11	27.54	28.28
23	27.21	27.25	27.56	28.06	28.06	29.00	29.28	29.19	29.11	28.90	28.84	28.81	28.61	28.46	28.42	28.42	28.30	28.09	28.12	28.36	28.28	27.98	27.62	27.35	28.30
24	27.36	27.34	28.15	28.33	28.33	28.97	29.35	29.53	29.17	28.86	28.65	28.72	28.65	28.54	28.47	28.44	28.37	28.30	28.11	28.14	28.06	27.84	27.43	27.15	28.34
25	27.52	27.27	27.59	27.78	27.78	27.76	28.21	28.76	29.23	28.98	28.79	28.66	28.59	28.48	28.40	28.33	28.28	28.23	28.17	28.12	27.97	27.86	27.70	27.76	28.18
26	28.25	28.64	29.04	29.47	29.47	29.87	29.53	28.94	28.51	28.83	28.85	28.75	28.64	28.51	28.43	28.37	28.24	28.13	28.07	28.02	27.89	27.46	27.11	27.07	28.50
27	27.21	27.86	28.58	29.46	29.46	29.70	29.67	29.26	28.99	28.90	28.70	28.44	28.34	28.27	28.30	28.21	28.08	27.98	27.96	27.91	27.97	28.24	27.68	26.62	28.41
28	26.86	27.17	27.57	27.90	27.90	28.57	28.77	28.98	29.38	29.30	29.02	28.74	28.53	28.50	28.40	28.39	28.36	28.21	27.96	28.04	28.19	28.33	27.78	27.15	28.25
29	27.10	26.82	27.30	27.06	27.06	27.74	28.58	28.52	29.05	29.20	28.82	28.60	28.51	28.40	28.29	28.15	28.08	27.99	27.96	28.02	28.03	28.07	27.61	27.24	28.01
30	27.33	27.66	28.19	28.44	28.44	28.27	28.19	28.41	28.63	28.61	28.55	28.46	28.41	28.32	28.23	28.05	27.95	27.93	27.88	27.81	27.52	27.29	26.80	26.80	28.01
HOURLY MEANS	27.18	27.27	27.67	28.38	28.88	29.45	29.61	29.48	29.30	29.14	29.03	28.90	28.74	28.61	28.48	28.36	28.30	28.28	28.23	28.21	28.15	27.99	27.61	27.16	28.44

Tabel 100 Nilai variasi harian komponen I – *inclination* (derajat) November 2021

Tondano Magnetic Observatory

November 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-12.89	-12.88	-12.87	-12.86	-12.87	-12.87	-12.87	-12.87	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	-12.88	-12.88	-12.88
2	-12.88	-12.87	-12.87	-12.87	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89	-12.89	-12.89	-12.89
3	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.89	-12.88	-12.90	-12.91	-12.89
4	-12.90	-12.88	-12.88	-12.88	-12.88	-12.90	-12.92	-12.93	-12.95	-12.94	-12.96	-12.94	-12.93	-12.94	-12.94	-12.92	-12.92	-12.92	-12.92	-12.92	-12.91	-12.91	-12.91	-12.91	-12.92
5	-12.90	-12.91	-12.90	-12.90	-12.91	-12.91	-12.90	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.91	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.89
6	-12.87	-12.85	-12.85	-12.86	-12.87	-12.88	-12.89	-12.90	-12.90	-12.89	-12.90	-12.89	-12.90	-12.90	-12.90	-12.90	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.91	-12.90	-12.89
7	-12.89	-12.87	-12.86	-12.87	-12.87	-12.88	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-	-12.89
8	-12.90	-12.89	-12.88	-12.87	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89
9	-12.89	-12.88	-12.86	-12.85	-12.85	-12.86	-12.87	-12.88	-12.88	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89
10	-12.90	-12.89	-12.88	-12.88	-12.87	-12.87	-12.88	-12.88	-12.88	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89
11	-12.89	-12.88	-12.87	-12.86	-12.86	-12.87	-12.87	-12.88	-12.88	-12.88	-12.89	-12.89	-12.90	-12.89	-12.90	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-	-12.89
12	-12.88	-12.87	-12.86	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89
13	-12.89	-12.88	-12.87	-12.87	-12.87	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.89	-12.89	-12.89	-12.90	-12.90	-12.89
14	-12.90	-12.90	-12.89	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.89	-12.90	-12.90	-12.90	-12.90	-12.89	-12.89	-12.89	-12.89
15	-12.89	-12.89	-12.88	-12.88	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89	-12.89	-12.90	-12.89	-12.89	-12.89
16	-12.89	-12.88	-12.88	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.89	-12.90	-12.90	-12.90	-12.90	-12.89	-12.90	-12.90	-12.89	-12.89
17	-12.89	-12.88	-12.87	-12.87	-12.87	-12.87	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89	-12.89	-12.89	-12.89	-12.89
18	-12.89	-12.88	-12.88	-12.88	-12.88	-12.87	-12.88	-12.88	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.89	-12.90	-12.89	-12.89
19	-12.89	-12.88	-12.87	-12.87	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.89	-12.89	-12.89	-12.88	-12.88	-12.89
20	-12.88	-12.87	-12.86	-12.85	-12.85	-12.85	-12.86	-12.87	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.89	-12.90	-12.89	-12.89	-12.89	-12.88
21	-12.89	-12.88	-12.87	-12.87	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.90	-12.89	-12.89	-12.90	-12.90	-12.90	-12.89	-12.89	-12.90	-12.89	-12.89	-12.89	-12.89
22	-12.89	-12.89	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89
23	-12.89	-12.89	-12.87	-12.86	-12.87	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.90	-12.89	-12.89	-12.89	-12.90	-12.90	-12.89	-12.90	-12.90	-12.90	-12.89	-12.89	-12.88	-12.89
24	-12.88	-12.87	-12.86	-12.86	-12.86	-12.86	-12.86	-12.87	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88
25	-12.89	-12.88	-12.88	-12.87	-12.87	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.89
26	-12.90	-12.90	-12.89	-12.89	-12.89	-12.89	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	-12.88	-12.89
27	-12.87	-12.87	-12.86	-12.86	-12.86	-12.85	-12.85	-12.86	-12.87	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.88
28	-12.91	-12.91	-12.89	-12.89	-12.88	-12.88	-12.87	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.89	-12.89	-12.89
29	-12.91	-12.91	-12.91	-12.89	-12.89	-12.88	-12.89	-12.88	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89	-12.89	-12.90
30	-12.89	-12.89	-12.89	-12.88	-12.88	-12.87	-12.86	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	-12.89	-12.89	-12.90	-12.89
HOURLY MEANS	-12.89	-12.88	-12.88	-12.87	-12.87	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89	-12.89	-12.89	-12.89

2. Gangguan badai magnet

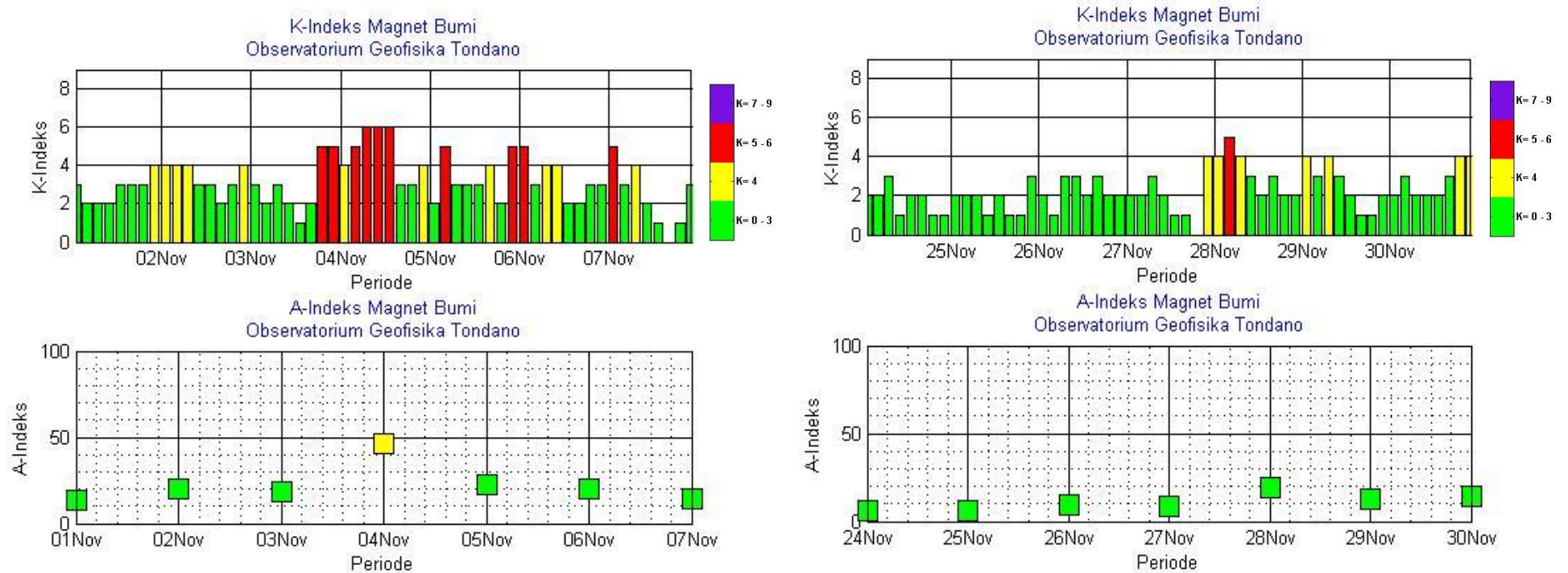
Tabel 101 Monitoring waktu gangguan pada pengamatan magnet bumi November 2021

Kejadian rekaman magnet bumi							Durasi gangguan	Keterangan
No	Hari			Waktu				
	Tanggal	Bulan	Tahun	Jam	Menit	Detik		
1	1	11	2021					
2	2	11	2021					
3	3	11	2021					
4	4	11	2021	0	45	0	14j15m	Badai Kecil
5	5	11	2021					
6	6	11	2021					
7	7	11	2021					
8	8	11	2021					
9	9	11	2021					
10	10	11	2021					
11	11	11	2021					
12	12	11	2021					
13	13	11	2021					
14	14	11	2021					
15	15	11	2021					
16	16	11	2021					
17	17	11	2021					
18	18	11	2021					
19	19	11	2021					
20	20	11	2021					
21	21	11	2021					
22	22	11	2021					
23	23	11	2021					
24	24	11	2021					
25	25	11	2021					
26	26	11	2021					
27	27	11	2021					
28	28	11	2021					
29	29	11	2021					
30	30	11	2021					

Tabel 102 Hasil analisa K-indeks dan A-indeks November 2021

Tanggal	K-1	K-2	K-3	K-4	K-5	K-6	K-7	K-8	A Indeks	Keterangan
1	3	2	2	2	3	3	3	4	13.500	Tenang
2	4	4	4	3	3	2	3	4	20.000	Tenang
3	3	2	3	2	1	2	5	5	18.750	Tenang
4	4	5	6	6	6	3	3	4	46.500	Badai Kecil
5	2	5	3	3	3	4	2	5	22.750	Tenang
6	5	3	4	4	2	2	3	3	20.125	Tenang
7	5	3	4	2	1	0	1	3	14.750	Tenang
8	4	2	3	0	2	1	2	3	10.125	Tenang
9	2	2	3	2	2	1	2	2	7.500	Tenang
10	3	2	2	2	2	0	2	3	8.125	Tenang
11	4	1	1	3	2	2	1	2	9.000	Tenang
12	3	3	2	2	0	1	2	3	8.625	Tenang
13	1	1	3	2	1	1	0	2	5.125	Tenang
14	2	3	3	2	1	2	2	2	8.500	Tenang
15	1	2	3	3	2	2	3	4	12.000	Tenang
16	3	4	4	3	3	3	2	2	16.000	Tenang
17	2	2	3	3	2	3	1	2	9.500	Tenang
18	2	1	2	2	1	1	2	3	6.500	Tenang
19	2	1	2	2	2	2	1	3	7.000	Tenang
20	2	2	2	3	2	3	2	3	10.000	Tenang
21	3	3	3	3	3	3	2	2	13.000	Tenang
22	1	3	3	2	1	2	1	2	7.500	Tenang
23	1	2	3	2	1	2	1	3	7.500	Tenang
24	2	2	3	1	2	2	1	1	6.500	Tenang
25	2	2	2	1	2	1	1	3	6.500	Tenang
26	2	1	3	3	2	3	2	2	9.500	Tenang
27	2	2	3	2	1	1	0	4	8.625	Tenang
28	4	5	4	3	2	3	2	2	19.125	Tenang
29	4	3	4	3	2	1	1	2	13.000	Tenang
30	2	3	2	2	2	3	4	4	14.000	Tenang

Gambar 32 Plot hasil analisa K-indeks dan A-indeks saat terjadi gangguan magnet bumi di bulan November 2021



L. Desember 2021

1. Nilai variasi harian bulan Desember 2021

Tabel 103 Nilai variasi harian komponen H – *horizontal* (nT) Desember 2021

Tondano Magnetic Observatory

Desember 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	39316.3	39322.8	39338.9	39343.6	39339.6	39331.5	39312.5	39303.8	39299.2	39294.6	39290.0	39286.1	39286.9	39302.3	39294.9	39294.4	39303.9	39306.4	39304.7	39310.0	39310.1	39315.5	39316.6	39316.5	39310.0
2	39320.2	39334.5	39343.8	39344.1	39338.6	39329.0	39310.0	39304.5	39306.9	39305.3	39307.1	39306.3	39310.8	39319.0	39318.5	39315.8	39312.2	39310.4	39309.5	39312.4	39312.0	39315.0	39319.4	39319.7	39317.7
3	39326.7	39336.0	39344.3	39347.9	39343.4	39338.4	39332.3	39324.8	39322.5	39321.5	39316.9	39320.9	39316.6	39310.3	39302.7	39296.0	39301.9	39312.1	39328.7	39319.4	39317.3	39323.1	39326.9	39334.2	39323.5
4	39343.1	39352.0	39346.5	39343.3	39337.5	39328.7	39318.8	39310.0	39310.6	39314.7	39315.3	39315.8	39317.0	39320.7	39318.1	39314.5	39314.9	39316.0	39321.0	39325.5	39330.6	39329.8	39329.7	39333.9	39325.3
5	39341.7	39347.9	39352.2	39347.8	39343.2	39337.4	39324.3	39315.9	39316.1	39320.9	39324.9	39324.9	39322.1	39323.6	39321.4	39322.6	39320.8	39328.1	39335.2	39330.2	39327.0	39328.4	39332.7	39339.1	39330.3
6	39347.2	39365.1	39376.1	39378.6	39371.1	39356.3	39340.0	39328.2	39324.5	39324.3	39321.3	39318.7	39319.5	39327.9	39332.0	39332.0	39325.1	39321.0	39320.9	39321.7	39326.5	39328.9	39331.0	39335.2	39336.4
7	39342.2	39355.4	39362.2	39362.5	39352.6	39342.5	39333.6	39326.5	39325.2	39328.3	39327.9	39328.0	39328.2	39327.6	39327.6	39325.3	39325.7	39326.7	39327.9	39328.9	39330.0	39330.7	39329.2	39337.1	39334.7
8	39349.7	39360.7	39374.4	39380.9	39376.9	39365.7	39350.6	39335.8	39325.3	39323.4	39325.1	39326.6	39325.7	39323.8	39323.1	39324.5	39329.2	39331.1	39332.3	39330.0	39329.0	39330.2	39332.8	39333.3	39339.2
9	39333.6	39343.0	39358.6	39368.2	39372.1	39370.8	39361.3	39346.9	39335.7	39331.3	39330.8	39330.2	39329.7	39331.5	39330.4	39331.2	39331.5	39332.4	39333.2	39335.3	39336.3	39337.2	39337.2	39338.0	39341.1
10	39344.2	39356.5	39369.7	39379.7	39377.0	39370.9	39362.8	39348.9	39339.6	39340.1	39340.6	39341.1	39338.3	39334.7	39334.4	39341.3	39343.6	39346.1	39345.3	39343.2	39346.2	39343.4	39343.1	39347.2	39349.1
11	39352.6	39358.5	39365.9	39373.8	39365.7	39356.4	39349.8	39340.1	39334.9	39333.5	39333.3	39332.3	39333.1	39332.4	39332.7	39332.6	39333.6	39333.9	39334.2	39333.9	39332.6	39334.4	39342.0	39349.4	39342.6
12	39358.7	39367.6	39376.2	39381.2	39375.8	39365.3	39354.5	39345.6	39340.5	39337.6	39336.3	39334.6	39333.1	39331.3	39329.5	39330.4	39332.3	39333.4	39333.6	39338.6	39338.3	39342.3	39350.3	39357.4	39346.8
13	39364.8	39371.8	39378.0	39382.7	39371.1	39355.1	39350.0	39344.1	39337.1	39337.2	39333.3	39331.4	39332.0	39333.2	39334.4	39336.4	39336.8	39337.3	39340.7	39342.9	39345.8	39345.3	39348.5	39350.7	39347.5
14	39358.1	39362.0	39365.7	39368.6	39367.0	39361.9	39351.3	39337.3	39329.0	39327.9	39330.7	39330.2	39330.9	39328.1	39325.2	39324.6	39333.1	39332.1	39329.5	39332.8	39337.1	39340.4	39343.4	39348.9	39341.5
15	39361.3	39368.3	39373.1	39384.9	39380.4	39372.5	39362.8	39349.7	39338.4	39321.8	39313.7	39323.2	39322.9	39323.3	39323.5	39326.9	39330.8	39334.5	39334.6	39335.2	39334.2	39333.3	39338.7	39341.2	39342.9
16	39342.0	39351.1	39357.9	39360.8	39355.8	39351.1	39342.0	39342.0	39329.8	39325.3	39325.2	39320.7	39328.9	39329.1	39329.0	39329.0	39329.4	39328.5	39332.1	39329.6	39327.6	39329.1	39334.6	39344.2	39336.4
17	39352.8	39359.2	39364.6	39366.5	39362.2	39351.7	39343.6	39343.6	39331.8	39331.8	39331.3	39331.8	39332.2	39330.9	39330.4	39330.8	39331.6	39332.2	39333.6	39335.8	39337.4	39337.8	39343.2	39351.5	39341.6
18	39361.7	39374.1	39379.2	39380.0	39377.2	39377.2	39367.8	39355.1	39337.0	39335.3	39335.0	39336.0	39336.1	39333.9	39334.1	39332.0	39332.6	39334.1	39334.4	39335.4	39336.3	39337.6	39337.6	39342.4	39347.6
19	39352.6	39365.0	39373.6	39376.0	39371.1	39371.1	39361.4	39352.8	39343.0	39341.1	39340.7	39336.1	39335.0	39338.0	39342.9	39349.9	39352.7	39338.2	39336.0	39301.7	39319.9	39313.8	39323.9	39322.7	39344.1
20	39334.5	39351.4	39349.6	39349.6	39348.7	39348.7	39345.4	39331.5	39308.2	39300.8	39309.3	39314.4	39316.2	39315.5	39310.9	39316.2	39308.0	39310.2	39313.0	39315.9	39315.2	39309.7	39310.9	39316.0	39322.9
21	39325.4	39344.5	39351.0	39359.0	39360.7	39360.7	39351.6	39336.0	39313.2	39316.6	39317.0	39315.3	39313.1	39317.0	39316.4	39314.4	39315.8	39318.2	39317.9	39320.6	39320.3	39321.8	39327.1	39334.5	39328.7
22	39343.5	39358.4	39373.1	39381.6	39376.9	39376.9	39355.4	39337.7	39309.0	39310.9	39316.1	39315.4	39316.6	39315.0	39314.9	39310.5	39312.3	39312.2	39313.6	39315.8	39319.6	39317.6	39320.3	39324.3	39331.2
23	39337.1	39352.4	39370.7	39379.8	39374.7	39374.7	39361.0	39344.4	39322.0	39321.8	39323.0	39321.6	39323.7	39324.1	39323.1	39323.9	39324.3	39324.3	39326.4	39327.3	39326.2	39325.9	39326.0	39327.3	39336.9
24	39336.0	39350.2	39365.4	39379.4	39386.1	39386.1	39375.4	39359.2	39332.9	39329.8	39326.2	39328.0	39329.4	39328.9	39327.0	39327.2	39330.1	39330.8	39330.3	39327.9	39325.7	39327.7	39328.7	39334.9	39341.8
25	39345.6	39363.5	39380.0	39385.7	39380.9	39380.9	39363.8	39350.3	39328.4	39320.9	39313.9	39311.9	39310.4	39318.2	39323.9	39319.1	39312.9	39313.5	39316.9	39319.3	39318.5	39319.6	39320.6	39327.9	39335.3
26	39335.8	39344.7	39362.9	39375.6	39378.6	39378.6	39374.3	39360.6	39336.8	39330.4	39324.5	39323.6	39325.6	39327.1	39328.7	39329.8	39330.5	39329.6	39330.1	39331.2	39331.9	39332.9	39333.0	39333.4	39341.3
27	39340.5	39358.6	39374.5	39378.2	39376.2	39376.2	39365.2	39350.7	39325.1	39333.3	39336.2	39327.7	39327.6	39318.0	39322.4	39324.0	39316.9	39313.9	39316.5	39320.1	39321.8	39325.0	39325.0	39326.9	39337.5
28	39332.2	39340.6	39355.8	39357.5	39353.7	39353.7	39340.4	39318.9	39306.9	39307.4	39306.8	39311.0	39312.0	39309.2	39308.5	39310.1	39312.8	39315.4	39317.6	39319.8	39320.7	39320.9	39323.0	39323.1	39324.1
29	39322.8	39329.8	39345.8	39359.4	39355.4	39355.4	39348.2	39341.6	39322.9	39319.0	39322.5	39325.5	39322.9	39317.0	39321.2	39322.2	39321.1	39328.4	39330.2	39327.6	39333.8	39351.6	39361.9	39371.6	39335.7
30	39377.3	39373.3	39368.8	39379.8	39384.4	39384.4	39373.7	39361.4	39341.0	39327.3	39319.9	39328.1	39328.9	39321.5	39322.7	39323.9	39325.3	39324.3	39326.9	39330.1	39332.9	39336.8	39343.5	39350.8	39345.3
31	39358.4	39365.0	39370.4	39371.9	39365.8	39357.9	39344.1	39334.5	39333.1	39334.5	39334.6	39335.5	39335.8	39333.9	39331.8	39333.5	39331.5	39335.4	39339.4	39339.7	39341.4	39345.7	39352.7	39358.9	39345.2
HOURLY MEANS	39343.8	39354.3	39363.5	39368.7	39365.2	39360.2	39349.3	39338.2	39326.0	39324.2	39323.5	39323.6	39323.9	39324.1	39323.7	39324.0	39324.6	39325.5	39327.3	39327.0	39328.5	39330.0	39333.3	39337.8	39336.3

Tabel 104 Nilai variasi harian komponen Z – *vertical* (nT) Desember 2021

Tondano Magnetic Observatory																							Desember 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-9009.8	-9003.1	-8995.5	-8986.4	-8993.1	-8987.4	-8987.6	-8990.5	-8990.5	-8996.9	-8998.2	-8998.8	-8998.8	-9001.2	-8990.1	-8999.8	-9002.6	-8998.6	-8996.7	-8997.2	-8996.5	-9002.6	-8999.3	-8999.0	-8996.7
2	-8997.9	-8996.4	-8997.9	-8996.7	-8992.1	-8989.2	-8984.6	-8984.7	-8984.7	-8990.8	-8996.3	-8995.6	-8996.2	-8996.5	-8994.2	-8994.9	-8995.1	-8997.3	-8995.8	-8997.9	-8997.6	-8998.7	-9002.1	-9002.3	-8994.8
3	-9002.4	-9001.6	-9001.7	-8999.0	-8994.4	-8992.3	-8990.6	-8990.0	-8990.0	-8996.6	-8996.8	-8998.5	-8996.1	-8997.1	-8995.6	-8997.7	-9000.7	-8999.9	-9002.2	-8994.5	-8998.6	-8996.5	-8991.5	-8989.6	-8996.4
4	-8990.8	-8988.5	-8992.1	-8991.2	-8994.8	-8994.9	-8991.1	-8990.5	-8990.5	-8994.2	-8992.4	-8993.3	-8995.1	-8996.6	-8994.2	-8995.8	-8997.4	-8997.8	-8998.7	-8998.4	-8999.9	-8997.2	-8992.3	-8990.2	-8994.1
5	-8989.6	-8994.3	-8995.8	-8999.2	-9008.4	-9009.8	-9004.5	-9002.8	-9002.8	-9000.3	-8999.3	-8997.6	-8997.0	-8997.6	-8997.1	-8997.9	-8997.2	-9000.8	-9000.6	-8996.5	-8996.7	-8995.0	-8992.1	-8993.1	-8998.6
6	-8998.9	-8999.3	-8994.9	-8993.3	-8994.0	-8995.4	-8996.1	-8995.2	-8995.2	-8992.1	-8993.6	-8995.9	-8995.5	-8996.8	-8995.4	-8994.6	-8993.2	-8994.7	-8998.6	-8997.7	-8999.6	-8996.6	-8990.4	-8984.9	-8995.1
7	-8983.1	-8984.4	-8982.6	-8977.0	-8977.7	-8982.1	-8988.2	-8991.9	-8991.9	-8996.0	-8995.6	-8996.5	-8996.4	-8995.2	-8995.4	-8995.3	-8997.2	-8996.9	-8996.5	-8996.6	-8997.4	-8995.9	-8991.9	-8991.7	-8991.4
8	-8989.1	-8984.4	-8985.3	-8985.4	-8984.4	-8987.2	-8991.7	-8995.4	-8995.4	-8995.4	-8994.7	-8995.0	-8995.2	-8995.0	-8995.5	-8995.9	-8997.5	-8997.3	-8997.2	-8996.4	-8996.5	-8997.3	-8996.5	-8996.8	-8993.3
9	-9000.6	-9003.0	-9002.1	-8998.5	-8999.6	-8999.9	-8997.7	-8996.8	-8996.8	-8993.7	-8993.5	-8994.8	-8995.3	-8995.3	-8994.1	-8995.5	-8995.8	-8996.8	-8997.3	-8997.5	-8997.2	-8997.9	-8994.8	-8991.9	-8996.9
10	-8989.6	-8985.4	-8981.5	-8977.4	-8978.7	-8986.0	-8984.0	-8984.1	-8984.1	-8990.4	-8990.5	-8992.3	-8991.7	-8993.1	-8994.6	-8996.1	-8995.4	-8995.9	-8994.8	-8994.2	-8996.5	-8995.4	-8993.8	-8988.6	-8989.7
11	-8987.9	-8991.1	-8990.2	-8985.1	-8979.3	-8981.4	-8984.6	-8987.8	-8987.8	-8993.5	-8994.0	-8994.3	-8994.9	-8994.4	-8994.3	-8994.0	-8995.0	-8996.0	-8995.9	-8995.5	-8994.1	-8992.4	-8990.4	-8990.9	-8991.0
12	-8991.4	-8987.4	-8982.3	-8980.1	-8977.6	-8980.6	-8984.1	-8988.7	-8988.7	-8989.1	-8990.7	-8992.2	-8993.8	-8994.0	-8994.0	-8994.5	-8995.5	-8995.3	-8996.8	-8996.9	-8995.1	-8993.8	-8989.1	-8987.8	-8990.0
13	-8989.1	-8989.7	-8990.0	-8986.9	-8983.6	-8985.1	-8991.8	-8987.2	-8987.2	-8989.1	-8990.8	-8993.9	-8994.4	-8993.2	-8993.1	-8994.4	-8994.0	-8994.3	-8994.8	-8995.1	-8994.5	-8993.4	-8994.6	-8995.1	-8991.5
14	-8996.8	-8994.5	-8994.5	-8995.8	-8992.3	-8990.9	-8989.2	-8988.4	-8988.4	-8994.3	-8995.0	-8995.1	-8995.5	-8994.9	-8994.8	-8996.2	-8998.8	-8994.8	-8995.6	-8996.2	-8996.5	-8995.9	-8997.9	-9001.3	-8994.7
15	-8999.6	-8996.1	-8996.3	-8996.3	-8986.5	-8988.2	-8988.2	-8988.6	-8986.1	-8985.3	-8995.3	-8999.0	-8995.4	-8994.1	-8995.2	-8995.8	-9000.6	-8994.3	-8997.7	-8995.9	-8996.0	-8991.5	-8988.8	-8985.8	-8993.2
16	-8986.4	-8988.5	-8987.5	-8985.3	-8984.8	-8986.3	-8982.3	-8982.3	-8982.3	-8987.3	-8992.5	-8989.7	-8994.7	-8994.4	-8993.5	-8993.3	-8994.0	-8994.3	-8995.5	-8992.4	-8993.8	-8993.0	-8990.4	-8988.9	-8989.7
17	-8991.1	-8991.5	-8986.1	-8981.4	-8977.9	-8975.6	-8979.0	-8979.0	-8979.0	-8988.6	-8990.5	-8992.0	-8992.5	-8992.6	-8992.9	-8993.4	-8993.8	-8994.6	-8995.3	-8995.6	-8995.3	-8993.3	-8989.8	-8988.8	-8988.7
18	-8991.6	-8992.5	-8987.1	-8982.5	-8982.5	-8978.2	-8979.1	-8979.7	-8979.7	-8987.0	-8990.6	-8992.5	-8993.4	-8992.8	-8993.4	-8994.0	-8995.4	-8995.4	-8995.8	-8996.3	-8995.9	-8994.8	-8990.8	-8988.6	-8989.6
19	-8988.0	-8986.4	-8980.9	-8977.2	-8977.2	-8975.3	-8979.3	-8983.8	-8983.8	-8989.3	-8990.5	-8990.4	-8993.0	-8994.4	-8996.4	-8996.1	-8996.3	-8990.6	-8993.2	-8992.9	-9003.5	-8994.3	-9014.5	-8999.1	-8990.3
20	-8998.1	-8995.4	-8979.3	-8977.5	-8977.5	-8977.3	-8975.9	-8976.4	-8976.4	-8990.8	-8994.5	-8995.3	-8994.9	-8993.6	-8992.3	-8995.9	-8993.4	-8997.5	-8995.7	-8998.4	-8996.4	-8993.3	-8990.8	-8989.2	-8989.4
21	-8993.2	-8985.6	-8979.2	-8981.9	-8981.9	-8985.8	-8988.9	-8987.6	-8987.6	-8992.3	-8993.3	-8994.1	-8994.3	-8996.1	-8994.9	-8996.2	-8998.6	-8998.3	-8998.6	-8998.7	-8998.6	-8997.0	-8994.1	-8992.9	-8992.1
22	-8990.3	-8985.5	-8987.7	-8991.3	-8991.3	-8992.2	-8987.8	-8987.4	-8987.4	-8991.9	-8994.6	-8994.1	-8995.4	-8993.9	-8994.3	-8995.7	-8997.3	-8997.7	-8999.1	-8998.3	-8997.9	-8997.8	-8996.2	-9001.9	-8993.6
23	-9003.7	-9000.5	-8996.9	-8995.4	-8995.4	-8988.2	-8984.7	-8980.8	-8980.8	-8993.3	-8994.3	-8993.7	-8995.4	-8996.5	-8996.5	-8997.0	-8996.8	-8996.7	-8998.4	-8999.0	-8998.0	-8998.6	-8996.0	-8993.3	-8994.6
24	-8990.6	-8987.0	-8977.0	-8971.0	-8971.0	-8971.8	-8973.7	-8973.8	-8973.8	-8985.5	-8988.3	-8993.2	-8993.5	-8993.7	-8993.5	-8994.5	-8994.7	-8995.7	-8995.7	-8995.9	-8996.3	-8996.0	-8994.3	-8995.8	-8987.3
25	-8996.3	-8989.8	-8980.4	-8979.2	-8979.2	-8981.9	-8980.8	-8987.6	-8987.6	-8992.2	-8992.6	-8993.7	-8996.3	-8996.9	-8994.1	-8992.3	-8993.1	-8995.9	-8997.2	-8998.3	-8998.0	-8999.1	-8996.6	-8997.2	-8991.5
26	-8995.3	-8995.7	-8995.5	-8984.0	-8984.0	-8978.9	-8982.8	-8986.5	-8986.5	-8994.6	-8993.8	-8995.2	-8996.8	-8996.1	-8995.4	-8994.8	-8994.7	-8994.6	-8995.4	-8995.9	-8997.0	-8997.6	-8996.7	-8997.2	-8992.7
27	-8997.2	-8994.4	-8989.3	-8980.9	-8980.9	-8983.8	-8984.4	-8986.5	-8986.5	-8999.1	-8996.6	-8993.0	-8993.9	-8993.7	-9000.3	-8997.6	-8993.9	-8995.4	-8997.3	-8998.1	-8999.2	-8999.4	-8995.4	-8992.0	-8992.9
28	-8991.8	-8990.2	-8985.5	-8977.4	-8977.4	-8974.9	-8980.4	-8979.4	-8979.4	-8994.6	-8993.8	-8995.6	-8995.8	-8993.9	-8995.9	-8996.4	-8997.0	-8996.0	-8996.4	-8996.4	-8996.0	-8996.0	-8995.4	-8991.6	-8990.3
29	-8987.6	-8981.9	-8983.0	-8973.1	-8973.1	-8970.5	-8975.3	-8982.7	-8982.7	-8990.3	-8993.5	-8993.0	-8992.0	-8993.2	-8995.8	-8992.7	-8994.5	-8995.5	-8994.5	-8993.6	-8995.3	-8996.3	-8993.0	-8992.4	-8988.2
30	-8993.2	-8993.8	-8988.7	-8980.6	-8980.6	-8971.5	-8967.5	-8973.1	-8986.7	-8990.8	-8996.8	-8998.3	-8994.4	-8992.2	-8994.7	-8995.1	-8995.0	-8994.6	-8995.6	-8995.2	-8994.9	-8993.4	-8994.1	-8998.4	-8990.0
31	-9000.2	-8995.2	-8989.7	-8982.2	-8976.9	-8984.6	-8985.6	-8987.8	-8992.4	-8994.3	-8994.9	-8994.2	-8993.8	-8992.6	-8993.1	-8995.4	-8994.2	-8995.8	-8995.3	-8993.9	-8994.0	-8991.9	-8989.0	-8988.9	-8991.5
HOURLY MEANS	-8993.9	-8992.0	-8988.9	-8985.5	-8984.8	-8984.7	-8985.2	-8986.4	-8986.9	-8992.3	-8993.8	-8994.5	-8994.9	-8994.9	-8994.7	-8995.4	-8996.1	-8996.1	-8996.7	-8996.3	-8996.9	-8995.9	-8994.3	-8993.1	-8992.3

Tabel 105 Nilai Variasi harian komponen F – *total* (nT) Desember 2021

Tondano Magnetic Observatory																							Desember 2021		
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	40335.4	40340.3	40354.3	40356.8	40354.5	40345.3	40326.7	40318.9	40314.4	40311.4	40307.2	40303.5	40304.3	40319.9	40310.2	40311.9	40321.7	40323.3	40321.2	40326.5	40326.4	40333.1	40333.4	40333.2	40326.4
2	40336.5	40350.2	40359.6	40359.6	40353.2	40343.2	40323.7	40318.3	40320.7	40320.5	40323.5	40322.6	40327.1	40335.1	40334.1	40331.6	40328.2	40326.9	40325.7	40329.0	40328.5	40331.7	40336.7	40337.1	40333.5
3	40343.9	40352.8	40360.9	40363.8	40358.4	40353.1	40346.7	40339.3	40337.1	40337.5	40333.1	40337.4	40332.7	40326.7	40319.0	40312.9	40319.4	40329.2	40345.8	40335.1	40334.0	40339.1	40341.7	40348.3	40339.5
4	40357.3	40365.5	40361.0	40357.6	40352.7	40344.2	40333.7	40325.0	40325.6	40330.4	40330.6	40331.2	40332.9	40336.8	40333.7	40330.5	40331.4	40332.5	40337.6	40341.8	40347.2	40345.7	40344.6	40348.3	40340.7
5	40355.7	40362.8	40367.3	40363.7	40361.3	40356.0	40342.1	40333.5	40333.7	40337.8	40341.5	40341.1	40338.3	40339.8	40337.5	40338.9	40337.0	40344.9	40351.8	40346.0	40342.9	40343.9	40347.5	40354.0	40346.6
6	40363.2	40380.7	40390.4	40392.5	40385.3	40371.2	40355.4	40343.8	40340.2	40339.3	40336.7	40334.6	40335.4	40343.9	40347.5	40347.3	40340.3	40336.7	40337.5	40338.0	40343.1	40344.8	40345.5	40348.3	40351.7
7	40354.8	40367.9	40374.1	40373.2	40363.6	40354.8	40347.5	40341.4	40340.2	40344.1	40343.6	40343.9	40344.0	40343.2	40343.3	40341.0	40341.8	40342.7	40343.7	40344.8	40346.0	40346.4	40344.1	40351.7	40349.2
8	40363.4	40373.1	40386.6	40393.0	40388.8	40378.6	40364.8	40351.2	40341.0	40339.2	40340.7	40342.1	40341.4	40339.4	40338.9	40340.4	40345.3	40347.1	40348.2	40345.8	40344.9	40346.2	40348.6	40349.1	40354.1
9	40350.3	40360.0	40375.0	40383.5	40387.6	40386.3	40376.6	40362.3	40351.4	40346.5	40345.9	40345.7	40345.3	40347.0	40345.7	40346.8	40347.1	40348.2	40349.2	40351.3	40352.1	40353.2	40352.4	40352.6	40356.7
10	40358.2	40369.1	40381.1	40390.1	40387.7	40383.4	40375.0	40361.5	40352.4	40354.4	40354.8	40355.7	40352.8	40349.6	40349.7	40356.8	40358.9	40361.4	40360.4	40358.2	40361.6	40358.7	40358.0	40360.9	40362.9
11	40366.0	40372.5	40379.5	40386.0	40376.8	40368.1	40362.5	40353.8	40348.6	40348.5	40348.5	40347.6	40348.5	40347.7	40347.9	40347.8	40349.0	40349.5	40349.8	40349.4	40347.8	40349.2	40356.2	40363.5	40356.9
12	40372.7	40380.4	40387.7	40392.1	40386.2	40376.7	40367.0	40359.3	40354.3	40351.6	40350.7	40349.4	40348.3	40346.6	40344.8	40345.8	40347.9	40347.8	40349.2	40354.3	40353.6	40357.2	40364.0	40370.6	40360.8
13	40378.1	40385.1	40391.2	40395.0	40383.0	40367.8	40364.3	40357.5	40350.7	40351.2	40347.8	40346.6	40347.3	40348.2	40349.4	40351.6	40351.9	40352.5	40355.9	40358.1	40360.8	40360.1	40363.5	40365.7	40361.8
14	40373.3	40376.6	40380.2	40383.3	40381.0	40375.7	40365.0	40351.1	40343.0	40343.3	40346.2	40345.7	40346.5	40343.6	40340.7	40340.5	40349.4	40347.5	40345.2	40348.5	40352.8	40355.8	40359.2	40365.3	40356.6
15	40377.0	40383.1	40387.8	40399.3	40392.7	40385.4	40376.0	40363.3	40351.7	40335.4	40329.6	40339.8	40338.7	40338.7	40339.2	40342.7	40347.5	40349.8	40350.6	40350.8	40349.8	40348.0	40352.6	40354.4	40357.7
16	40355.2	40364.6	40371.0	40373.3	40368.4	40364.1	40354.4	40354.4	40342.5	40339.2	40340.3	40335.2	40344.3	40344.5	40344.2	40344.1	40344.7	40343.9	40347.7	40344.5	40342.9	40344.2	40348.9	40358.0	40350.6
17	40366.9	40373.2	40377.2	40378.1	40373.1	40362.3	40355.2	40355.2	40343.7	40345.9	40345.7	40346.6	40347.0	40345.8	40345.4	40345.9	40346.8	40347.6	40349.1	40351.3	40352.7	40352.8	40357.2	40365.1	40355.4
18	40375.7	40387.9	40391.7	40391.4	40388.7	40387.7	40378.8	40366.6	40348.9	40348.9	40349.4	40350.8	40351.1	40348.8	40349.1	40347.2	40348.1	40349.6	40350.0	40351.1	40351.9	40352.9	40352.0	40356.2	40361.4
19	40366.0	40377.7	40384.9	40386.4	40381.6	40381.2	40372.6	40365.2	40355.7	40355.1	40354.9	40350.4	40349.9	40353.2	40358.4	40365.1	40367.9	40352.5	40350.9	40317.5	40337.5	40329.6	40343.9	40339.3	40358.2
20	40350.6	40366.5	40361.1	40360.7	40359.8	40359.7	40356.3	40342.8	40320.1	40316.1	40325.2	40330.3	40332.0	40331.0	40326.3	40332.3	40323.6	40326.7	40329.0	40332.5	40331.4	40325.4	40325.9	40330.6	40337.3
21	40340.6	40357.5	40362.5	40370.8	40372.6	40373.4	40365.2	40349.7	40327.5	40331.9	40332.4	40331.0	40328.9	40333.1	40332.2	40330.6	40332.5	40334.7	40334.5	40337.1	40336.8	40338.0	40342.5	40349.4	40343.6
22	40357.7	40371.1	40385.9	40395.0	40390.4	40390.6	40368.7	40351.3	40323.3	40326.2	40331.9	40331.0	40332.5	40330.7	40330.6	40326.6	40328.8	40328.7	40330.4	40332.4	40336.1	40334.0	40336.3	40341.5	40346.3
23	40354.4	40368.5	40385.6	40394.2	40389.1	40387.5	40373.4	40356.3	40334.5	40337.1	40338.5	40337.1	40339.4	40340.1	40339.1	40339.9	40340.4	40340.3	40342.8	40343.7	40342.4	40342.3	40341.9	40342.5	40352.1
24	40350.4	40363.4	40376.0	40388.4	40394.8	40395.0	40385.0	40369.2	40343.6	40343.2	40340.3	40343.1	40344.6	40344.2	40342.2	40342.7	40345.5	40346.4	40345.9	40343.6	40341.6	40343.4	40344.0	40350.5	40355.3
25	40361.0	40377.0	40391.0	40396.2	40391.6	40392.2	40375.3	40363.7	40342.3	40336.0	40329.3	40327.5	40326.6	40334.4	40339.4	40334.3	40328.4	40329.6	40333.2	40335.8	40335.0	40336.2	40336.6	40343.9	40349.9
26	40351.2	40360.0	40377.7	40387.5	40390.5	40389.3	40385.9	40373.5	40350.2	40345.8	40339.8	40339.3	40341.6	40343.0	40344.3	40345.3	40345.9	40345.1	40345.7	40346.9	40347.8	40348.9	40348.8	40349.3	40356.0
27	40356.3	40373.2	40387.6	40389.3	40387.4	40388.0	40377.4	40363.8	40338.8	40349.6	40351.8	40342.8	40342.9	40333.6	40339.2	40340.2	40332.5	40329.9	40332.8	40336.5	40338.4	40341.6	40340.7	40341.8	40352.3
28	40346.9	40354.8	40368.5	40368.4	40364.7	40364.1	40352.4	40331.2	40319.5	40323.4	40322.6	40327.1	40328.1	40325.0	40324.8	40326.4	40329.1	40331.5	40333.7	40335.9	40336.7	40336.9	40338.8	40338.0	40338.7
29	40336.9	40342.4	40358.2	40369.3	40365.4	40364.8	40358.9	40354.1	40335.9	40333.8	40337.9	40340.7	40337.9	40332.4	40337.1	40337.4	40336.7	40344.0	40345.6	40342.8	40349.3	40366.8	40376.2	40385.5	40349.6
30	40391.2	40387.5	40381.9	40390.8	40395.3	40393.3	40382.0	40371.3	40354.4	40341.9	40336.1	40344.4	40344.3	40336.6	40338.3	40339.6	40340.9	40339.9	40342.6	40345.6	40348.3	40351.8	40358.5	40366.5	40359.3
31	40374.4	40379.6	40383.7	40383.5	40376.4	40370.4	40357.2	40348.3	40347.9	40349.8	40350.0	40350.7	40350.9	40348.8	40346.8	40348.9	40346.8	40350.9	40354.8	40354.7	40356.3	40360.2	40366.3	40372.3	40359.6
HOURLY MEANS	40358.7	40368.5	40376.8	40381.1	40377.5	40372.7	40362.1	40351.5	40339.8	40339.2	40338.9	40339.2	40339.5	40339.7	40339.3	40339.8	40340.5	40341.3	40343.2	40342.9	40344.4	40345.7	40348.6	40352.7	40351.0

Tabel 107 Nilai Variasi harian komponen Y – east (nT) Desember 2021

Tondano Magnetic Observatory

Desember 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	317.3	308.5	308.6	311.0	324.4	328.6	326.0	329.8	332.9	332.8	331.8	330.3	326.5	323.5	313.4	317.2	317.9	315.5	312.2	309.0	308.3	311.7	307.3	306.4	318.8
2	308.9	311.5	317.7	326.0	330.6	330.9	332.9	329.5	328.9	329.2	331.7	330.1	328.1	324.9	321.5	320.1	318.6	318.2	316.0	315.7	314.1	313.5	309.6	305.1	321.4
3	303.2	302.4	305.0	309.7	315.4	317.6	317.7	319.4	326.9	332.3	333.1	330.9	328.5	326.8	322.3	320.5	317.9	315.0	315.1	311.9	313.0	306.9	299.5	302.1	316.4
4	312.4	320.8	330.9	334.8	340.8	336.4	334.7	334.7	335.8	335.5	329.3	325.9	325.1	325.0	321.6	319.6	318.1	316.8	316.5	315.9	317.9	316.3	308.5	304.5	324.1
5	304.0	303.5	303.4	309.0	318.5	323.4	322.4	322.9	325.6	327.1	326.3	324.2	322.6	321.0	319.1	318.5	317.4	318.6	320.8	319.4	318.6	312.8	307.9	311.0	317.4
6	317.5	321.6	327.5	335.4	339.6	342.1	342.6	338.3	334.1	329.3	328.1	327.1	325.0	322.6	320.5	319.7	316.0	314.7	317.0	316.3	318.1	314.0	304.4	298.6	323.7
7	298.8	304.4	313.8	322.2	331.5	336.7	338.3	336.0	331.2	328.8	327.8	326.7	325.1	322.9	321.0	320.4	321.6	320.9	319.2	318.5	318.5	316.0	311.3	308.2	321.7
8	302.4	302.8	313.6	326.0	340.6	346.0	342.2	336.8	333.9	327.7	325.2	323.5	322.9	321.6	320.5	319.7	319.8	320.5	321.2	320.6	319.8	318.8	310.7	302.7	322.5
9	302.2	307.0	309.2	316.8	328.4	335.0	332.9	333.7	334.5	330.6	326.8	326.2	325.2	323.6	321.3	320.8	320.0	320.1	321.1	321.5	321.8	321.8	315.6	309.5	321.9
10	308.1	311.0	312.7	314.2	328.8	341.1	342.4	342.6	342.2	336.8	331.4	329.2	326.1	324.9	323.5	321.6	321.1	320.8	320.1	318.9	319.7	318.5	308.9	299.9	323.5
11	298.4	293.1	291.1	297.2	311.6	319.3	326.1	330.0	329.2	328.6	327.6	326.9	324.9	323.3	322.4	321.7	322.1	322.5	321.7	320.4	317.4	310.3	302.6	304.2	316.4
12	308.3	313.7	322.9	329.2	336.7	340.3	344.5	341.9	334.9	328.7	326.4	325.8	325.8	324.8	323.8	321.9	322.1	320.9	320.9	320.1	317.2	310.6	296.0	290.0	322.8
13	294.6	308.2	326.5	332.1	340.2	350.0	354.3	342.7	333.7	330.5	328.9	330.1	328.8	325.4	323.3	322.7	321.4	320.2	318.6	317.7	315.1	311.2	304.3	301.5	324.2
14	304.1	304.4	307.6	313.6	320.1	323.5	328.2	329.5	327.3	326.3	325.9	325.7	324.6	322.8	320.5	319.7	320.0	318.2	318.0	315.6	315.1	313.0	310.0	309.9	318.5
15	310.7	315.1	321.0	324.2	324.0	327.4	333.9	338.6	336.7	328.2	328.9	329.7	326.0	321.4	318.8	317.3	319.6	316.0	317.1	315.1	313.9	305.3	296.6	296.1	320.1
16	300.0	304.3	306.4	310.3	321.2	331.3	335.5	335.5	331.4	327.9	329.2	323.6	323.1	323.6	322.2	320.8	320.0	320.3	319.5	316.3	314.7	309.0	298.1	294.2	318.3
17	299.2	310.7	312.0	316.7	325.5	327.5	327.6	327.6	327.3	326.3	325.9	325.3	324.8	323.9	322.5	321.3	320.2	320.0	319.7	319.3	318.4	312.9	302.6	303.7	319.2
18	311.3	316.9	318.5	316.3	316.3	316.0	325.1	327.7	329.2	325.3	324.8	324.8	324.7	323.4	321.9	321.0	320.5	319.7	318.6	318.0	317.7	314.5	306.9	301.6	319.2
19	298.2	300.7	310.2	325.6	325.6	339.4	343.5	341.6	333.8	329.3	326.5	324.2	323.3	321.7	321.3	320.4	320.9	317.1	311.9	315.3	317.2	313.5	324.6	309.4	321.5
20	303.5	300.4	301.6	309.7	309.7	321.3	337.8	336.9	327.1	324.8	324.1	323.9	322.6	320.4	318.2	317.2	317.0	317.4	315.9	318.0	317.8	311.8	298.4	288.7	316.0
21	290.6	294.2	306.3	325.4	325.4	333.8	332.6	325.7	324.1	323.0	321.9	320.3	319.0	317.2	315.3	315.4	316.2	315.9	317.0	317.1	317.8	313.0	304.8	303.4	316.5
22	308.1	313.1	321.7	329.2	329.2	338.5	342.4	329.5	322.2	319.7	320.0	319.8	319.7	317.1	314.3	315.4	316.2	317.7	319.2	319.3	318.5	319.4	311.8	310.3	320.5
23	310.4	317.4	319.8	319.7	319.6	320.5	317.7	312.2	325.7	325.6	324.0	321.9	321.0	320.8	319.6	318.7	317.6	316.7	317.7	319.3	319.5	321.1	315.2	309.1	318.8
24	309.2	306.0	295.7	309.0	309.0	324.8	337.0	336.0	329.7	324.6	322.7	323.7	322.6	321.9	320.1	318.1	315.6	316.2	316.4	316.7	316.3	315.3	312.0	323.0	318.4
25	334.6	332.0	325.0	329.2	329.1	329.3	332.3	335.3	332.3	327.2	324.7	322.2	322.3	318.4	315.3	313.3	312.7	313.1	314.4	317.2	317.9	319.1	314.1	311.9	322.6
26	314.4	320.7	315.4	308.4	308.4	316.6	315.4	313.2	322.0	323.3	321.7	321.5	321.5	321.1	319.2	316.8	315.6	315.0	314.7	314.7	315.4	317.7	315.8	319.5	317.0
27	328.3	334.1	330.4	331.0	331.0	333.1	329.8	329.1	329.2	327.4	328.2	325.5	320.4	318.4	319.2	317.5	312.7	311.5	310.4	312.4	315.2	316.1	308.0	303.0	321.8
28	305.6	304.4	299.7	307.5	307.5	318.1	316.9	317.7	326.4	325.2	322.6	321.7	321.0	317.8	316.9	316.0	315.7	314.1	313.3	312.7	312.3	310.7	308.0	309.2	314.2
29	317.1	328.5	339.6	344.2	344.1	345.2	335.9	335.3	332.2	325.5	324.8	322.4	319.8	319.3	318.8	314.7	314.2	313.1	311.5	310.3	309.2	305.4	296.4	289.8	321.6
30	293.1	295.9	297.4	312.7	312.7	325.8	328.5	318.4	324.5	324.3	328.1	326.5	322.1	317.9	317.2	316.2	315.6	314.0	313.3	312.3	310.7	305.3	300.5	306.8	314.2
31	317.2	326.2	330.6	333.9	333.5	328.9	328.2	326.7	323.5	322.0	324.0	323.5	322.2	319.5	317.2	316.2	314.4	313.5	312.1	310.3	307.9	300.5	292.9	299.3	318.5
HOURLY MEANS	307.5	310.8	314.2	320.3	325.1	330.6	332.4	330.8	329.9	327.5	326.5	325.3	323.7	321.8	319.8	318.7	318.0	317.2	316.8	316.3	316.0	313.1	306.6	304.3	319.7

Tabel 108 Nilai Variasi harian komponen D – *declination* (menit) Desember 2021

Tondano Magnetic Observatory

Desember 2021

Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	27.76	26.98	26.98	27.19	28.36	28.74	28.52	28.86	29.14	29.13	29.04	28.91	28.58	28.31	27.43	27.76	27.81	27.60	27.32	27.03	26.97	27.27	26.88	26.80	27.89
2	27.01	27.23	27.77	28.50	28.90	28.94	29.13	28.84	28.78	28.80	29.02	28.88	28.70	28.42	28.12	28.00	27.87	27.84	27.65	27.62	27.48	27.42	27.08	26.69	28.11
3	26.51	26.44	26.66	27.07	27.57	27.77	27.78	27.93	28.59	29.06	29.14	28.95	28.74	28.59	28.21	28.05	27.82	27.56	27.56	27.29	27.38	26.85	26.19	26.41	27.67
4	27.31	28.04	28.93	29.27	29.79	29.42	29.27	29.29	29.38	29.35	28.81	28.51	28.44	28.43	28.13	27.96	27.83	27.72	27.68	27.63	27.80	27.66	26.97	26.62	28.34
5	26.57	26.53	26.52	27.01	27.84	28.28	28.20	28.25	28.48	28.61	28.53	28.36	28.21	28.07	27.91	27.86	27.76	27.86	28.05	27.93	27.86	27.35	26.92	27.19	27.76
6	27.75	28.10	28.60	29.29	29.66	29.90	29.95	29.58	29.22	28.80	28.70	28.61	28.43	28.21	28.03	27.95	27.64	27.52	27.72	27.67	27.82	27.46	26.61	26.11	28.31
7	26.12	26.60	27.42	28.16	28.97	29.43	29.58	29.39	28.96	28.76	28.66	28.57	28.43	28.24	28.07	28.02	28.13	28.06	27.91	27.85	27.85	27.64	27.23	26.95	28.12
8	26.43	26.46	27.39	28.47	29.74	30.23	29.91	29.44	29.20	28.66	28.44	28.29	28.24	28.13	28.03	27.96	27.96	28.02	28.08	28.04	27.97	27.88	27.17	26.46	28.19
9	26.43	26.84	27.01	27.68	28.69	29.26	29.08	29.17	29.24	28.91	28.58	28.52	28.44	28.30	28.09	28.05	27.98	27.99	28.08	28.11	28.13	28.13	27.59	27.06	28.14
10	26.93	27.18	27.32	27.44	28.72	29.80	29.92	29.95	29.91	29.44	28.97	28.78	28.51	28.40	28.29	28.11	28.07	28.04	27.98	27.88	27.95	27.85	27.01	26.22	28.28
11	26.08	25.61	25.43	25.96	27.23	27.90	28.50	28.85	28.78	28.73	28.64	28.59	28.41	28.27	28.19	28.13	28.17	28.20	28.13	28.02	27.75	27.13	26.46	26.58	27.66
12	26.94	27.41	28.20	28.75	29.41	29.73	30.10	29.89	29.28	28.74	28.54	28.48	28.49	28.40	28.31	28.15	28.17	28.06	28.06	27.98	27.73	27.15	25.87	25.34	28.22
13	25.74	26.92	28.52	29.00	29.72	30.59	30.97	29.96	29.17	28.89	28.76	28.86	28.75	28.45	28.27	28.22	28.10	27.99	27.85	27.77	27.54	27.20	26.60	26.35	28.34
14	26.58	26.60	26.87	27.40	27.97	28.27	28.68	28.81	28.62	28.54	28.50	28.48	28.39	28.23	28.03	27.96	27.98	27.83	27.81	27.60	27.55	27.36	27.10	27.09	27.84
15	27.14	27.53	28.04	28.31	28.30	28.60	29.17	29.60	29.44	28.71	28.77	28.83	28.51	28.11	27.88	27.75	27.95	27.63	27.73	27.55	27.45	26.69	25.93	25.89	27.98
16	26.23	26.59	26.77	27.12	28.06	28.96	29.33	29.33	28.98	28.67	28.79	28.30	28.26	28.30	28.17	28.06	27.98	28.01	27.94	27.66	27.52	27.02	26.06	25.72	27.83
17	26.15	27.15	27.26	27.67	28.44	28.63	28.64	28.64	28.62	28.53	28.50	28.44	28.40	28.32	28.21	28.10	28.00	27.98	27.95	27.92	27.84	27.36	26.45	26.54	27.91
18	27.20	27.68	27.82	27.62	27.62	27.60	28.40	28.64	28.78	28.44	28.40	28.40	28.39	28.28	28.14	28.07	28.03	27.95	27.85	27.81	27.77	27.50	26.83	26.36	27.90
19	26.06	26.27	27.10	28.44	28.44	29.65	30.01	29.86	29.18	28.79	28.54	28.35	28.26	28.12	28.09	28.00	28.05	27.72	27.27	27.59	27.75	27.43	28.39	27.06	28.10
20	26.54	26.25	26.36	27.07	27.07	28.08	29.53	29.46	28.62	28.42	28.35	28.33	28.22	28.02	27.84	27.75	27.74	27.77	27.64	27.82	27.80	27.28	26.10	25.25	27.64
21	25.41	25.72	26.77	28.43	28.43	29.17	29.07	28.47	28.35	28.26	28.15	28.02	27.91	27.75	27.59	27.59	27.66	27.63	27.73	27.74	27.80	27.38	26.65	26.53	27.68
22	26.94	27.36	28.10	28.75	28.75	29.56	29.92	28.81	28.19	27.97	27.99	27.97	27.96	27.74	27.49	27.60	27.67	27.79	27.92	27.93	27.86	27.94	27.27	27.14	28.03
23	27.14	27.74	27.93	27.92	27.92	28.00	27.76	27.29	28.49	28.48	28.34	28.15	28.07	28.06	27.96	27.88	27.78	27.70	27.78	27.92	27.94	28.08	27.57	27.03	27.87
24	27.03	26.74	25.83	26.99	26.99	28.37	29.44	29.36	28.83	28.38	28.23	28.31	28.21	28.15	27.99	27.82	27.60	27.65	27.66	27.69	27.66	27.58	27.29	28.24	27.83
25	29.25	29.00	28.38	28.74	28.74	28.75	29.03	29.30	29.06	28.62	28.41	28.19	28.20	27.86	27.58	27.41	27.36	27.39	27.51	27.74	27.81	27.92	27.47	27.28	28.21
26	27.49	28.03	27.55	26.94	26.94	27.65	27.55	27.37	28.15	28.27	28.13	28.12	28.12	28.09	27.91	27.70	27.59	27.55	27.52	27.52	27.58	27.78	27.61	27.94	27.71
27	28.70	29.20	28.86	28.91	28.91	29.09	28.82	28.77	28.79	28.63	28.69	28.47	28.02	27.85	27.92	27.77	27.35	27.25	27.15	27.33	27.57	27.65	26.94	26.50	28.13
28	26.72	26.61	26.19	26.87	26.87	27.80	27.71	27.79	28.56	28.45	28.23	28.14	28.09	27.80	27.72	27.65	27.62	27.48	27.41	27.35	27.32	27.18	26.94	27.05	27.48
29	27.73	28.73	29.68	30.07	30.07	30.17	29.36	29.31	29.06	28.47	28.41	28.20	27.97	27.93	27.88	27.52	27.48	27.38	27.24	27.13	27.03	26.69	25.90	25.31	28.11
30	25.60	25.85	25.98	27.31	27.31	28.45	28.70	27.82	28.36	28.36	28.70	28.55	28.16	27.80	27.74	27.66	27.60	27.47	27.40	27.31	27.17	26.69	26.27	26.81	27.46
31	27.72	28.50	28.88	29.17	29.14	28.74	28.69	28.57	28.28	28.16	28.33	28.28	28.17	27.94	27.74	27.65	27.49	27.41	27.29	27.13	26.91	26.27	25.60	26.15	27.84
HOURLY MEANS	26.88	27.16	27.46	27.98	28.41	28.89	29.06	28.92	28.85	28.65	28.56	28.45	28.31	28.15	27.97	27.88	27.81	27.74	27.70	27.66	27.63	27.38	26.80	26.60	27.95

Tabel 109 Nilai variasi harian komponen I – *inclination* (derajat) Desember 2021

Tondano Magnetic Observatory																								Desemer 2021	
Hour Date	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	DAILY MEANS
1	-12.91	-12.90	-12.89	-12.87	-12.88	-12.88	-12.88	-12.89	-12.89	-12.90	-12.90	-12.91	-12.91	-12.91	-12.89	-12.91	-12.91	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90
2	-12.89	-12.89	-12.89	-12.89	-12.88	-12.88	-12.88	-12.88	-12.88	-12.89	-12.90	-12.90	-12.90	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89
3	-12.90	-12.90	-12.89	-12.89	-12.88	-12.88	-12.88	-12.88	-12.88	-12.89	-12.89	-12.90	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89	-12.90	-12.89	-12.88	-12.88	-12.89
4	-12.88	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.89	-12.89	-12.89	-12.88	-12.88	-12.89
5	-12.88	-12.88	-12.88	-12.89	-12.90	-12.91	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.89	-12.89	-12.89	-12.89	-12.88	-12.88	-12.89
6	-12.89	-12.88	-12.87	-12.87	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.89	-12.90	-12.89	-12.88	-12.87	-12.89
7	-12.87	-12.87	-12.86	-12.85	-12.86	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	-12.88	-12.88
8	-12.87	-12.86	-12.86	-12.86	-12.86	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88
9	-12.89	-12.89	-12.89	-12.88	-12.88	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	-12.89
10	-12.88	-12.87	-12.86	-12.85	-12.85	-12.86	-12.86	-12.87	-12.87	-12.88	-12.88	-12.88	-12.88	-12.88	-12.89	-12.89	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.87	-12.87
11	-12.87	-12.87	-12.87	-12.86	-12.85	-12.86	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	-12.88	-12.88	-12.88
12	-12.87	-12.87	-12.86	-12.85	-12.85	-12.86	-12.86	-12.87	-12.88	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	-12.87	-12.87	-12.88
13	-12.87	-12.87	-12.87	-12.86	-12.86	-12.87	-12.88	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88
14	-12.88	-12.88	-12.88	-12.88	-12.87	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88
15	-12.88	-12.88	-12.88	-12.87	-12.86	-12.86	-12.87	-12.87	-12.87	-12.88	-12.89	-12.90	-12.89	-12.89	-12.89	-12.89	-12.90	-12.89	-12.89	-12.89	-12.89	-12.88	-12.88	-12.87	-12.88
16	-12.87	-12.87	-12.87	-12.86	-12.87	-12.87	-12.87	-12.87	-12.87	-12.88	-12.89	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	-12.89	-12.89	-12.88	-12.87	-12.88
17	-12.88	-12.87	-12.86	-12.86	-12.85	-12.85	-12.86	-12.86	-12.87	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	-12.88	-12.87	-12.88
18	-12.87	-12.87	-12.86	-12.85	-12.86	-12.85	-12.85	-12.86	-12.86	-12.88	-12.88	-12.88	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	-12.87	-12.87
19	-12.87	-12.86	-12.85	-12.85	-12.85	-12.85	-12.86	-12.86	-12.87	-12.88	-12.88	-12.88	-12.88	-12.88	-12.89	-12.88	-12.88	-12.88	-12.88	-12.89	-12.90	-12.89	-12.92	-12.90	-12.88
20	-12.89	-12.88	-12.86	-12.86	-12.86	-12.86	-12.86	-12.86	-12.87	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.89	-12.90	-12.89	-12.89	-12.89	-12.88	-12.88
21	-12.89	-12.87	-12.86	-12.86	-12.86	-12.87	-12.87	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89	-12.89	-12.88	-12.88
22	-12.88	-12.87	-12.86	-12.87	-12.87	-12.87	-12.87	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.90	-12.90	-12.89	-12.90	-12.89
23	-12.90	-12.89	-12.88	-12.87	-12.87	-12.86	-12.86	-12.86	-12.87	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88
24	-12.88	-12.87	-12.85	-12.84	-12.84	-12.84	-12.84	-12.85	-12.86	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.87
25	-12.88	-12.87	-12.85	-12.85	-12.85	-12.85	-12.86	-12.87	-12.88	-12.89	-12.89	-12.89	-12.90	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.89	-12.89	-12.88
26	-12.89	-12.88	-12.88	-12.86	-12.86	-12.85	-12.86	-12.87	-12.87	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88
27	-12.89	-12.88	-12.87	-12.85	-12.85	-12.86	-12.86	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.90	-12.89	-12.88	-12.88
28	-12.88	-12.88	-12.87	-12.85	-12.86	-12.85	-12.86	-12.87	-12.87	-12.89	-12.89	-12.89	-12.89	-12.89	-12.90	-12.90	-12.90	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88
29	-12.88	-12.87	-12.87	-12.85	-12.85	-12.85	-12.85	-12.87	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	-12.87	-12.87	-12.88
30	-12.87	-12.87	-12.87	-12.85	-12.85	-12.84	-12.84	-12.85	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	-12.88	-12.89	-12.88
31	-12.89	-12.88	-12.87	-12.86	-12.85	-12.86	-12.87	-12.88	-12.88	-12.89	-12.89	-12.88	-12.88	-12.88	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	-12.88	-12.87	-12.87	-12.88
HOURLY MEANS	-12.88	-12.88	-12.87	-12.86	-12.86	-12.86	-12.87	-12.87	-12.88	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.89	-12.88	-12.88

2. Gangguan badai magnet

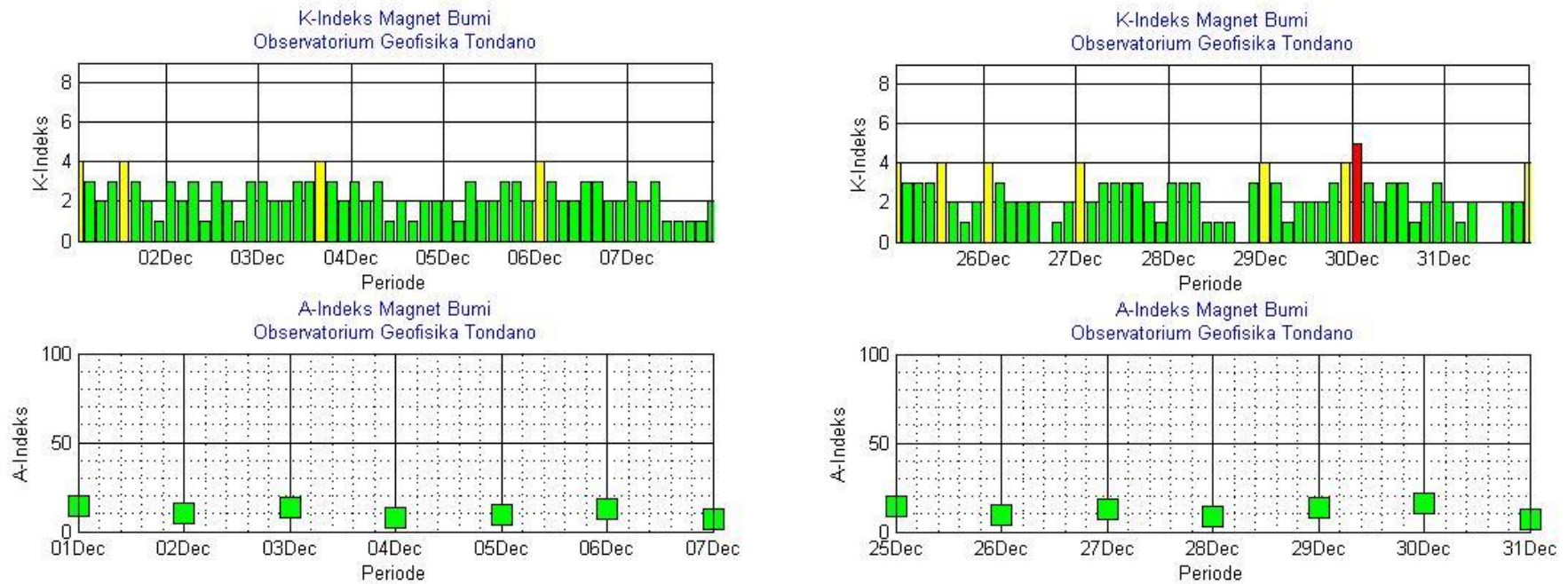
Tabel 110 Monitoring waktu gangguan pada pengamatan magnet bumi Desember 2021

Kejadian rekaman magnet bumi							Durasi gangguan	Keterangan
No	Hari			Waktu				
	Tanggal	Bulan	Tahun	Jam	Menit	Detik		
1	1	12	2021					
2	2	12	2021					
3	3	12	2021					
4	4	12	2021					
5	5	12	2021					
6	6	12	2021					
7	7	12	2021					
8	8	12	2021					
9	9	12	2021					
10	10	12	2021					
11	11	12	2021					
12	12	12	2021					
13	13	12	2021					
14	14	12	2021					
15	15	12	2021					
16	16	12	2021					
17	17	12	2021					
18	18	12	2021					
19	19	12	2021					
20	20	12	2021					
21	21	12	2021					
22	22	12	2021					
23	23	12	2021					
24	24	12	2021					
25	25	12	2021					
26	26	12	2021					
27	27	12	2021					
28	28	12	2021					
29	29	12	2021					
30	30	12	2021					
31	31	12	2021					

Tabel 111 Hasil analisa K-indeks dan A-indeks Desember 2021

Tanggal	K-1	K-2	K-3	K-4	K-5	K-6	K-7	K-8	A Indeks	Keterangan
1	4	3	2	3	4	3	2	1	14.500	Tenang
2	3	2	3	1	3	2	1	3	10.000	Tenang
3	3	2	2	3	3	4	3	2	13.500	Tenang
4	3	2	3	1	2	1	2	2	8	Tenang
5	2	1	3	2	2	3	3	2	9.5	Tenang
6	4	3	2	2	3	3	2	2	12.500	Tenang
7	3	2	3	1	1	1	1	2	7.000	Tenang
8	4	2	3	1	0	2	1	0	7.750	Tenang
9	3	1	2	2	3	4	5	4	18.625	Tenang
10	4	2	2	2	1	3	3	2	11.000	Tenang
11	3	3	1	1	1	0	1	3	7.125	Tenang
12	3	2	0	1	0	2	2	3	6.750	Tenang
13	3	3	2	3	2	2	3	3	12.000	Tenang
14	2	2	2	2	1	2	2	2	6.500	Tenang
15	3	3	3	3	2	4	1	2	13.000	Tenang
16	3	2	3	2	1	1	2	3	9.000	Tenang
17	3	1	1	0	1	0	1	3	5.250	Tenang
18	3	2	1	0	1	1	0	1	4.250	Tenang
19	3	1	2	2	3	4	5	4	18.625	Tenang
20	4	3	3	3	2	3	2	2	13.500	Tenang
21	4	3	3	1	3	2	2	3	13.000	Tenang
22	4	4	3	2	2	1	2	2	12.500	Tenang
23	4	2	3	1	1	0	1	1	7.625	Tenang
24	4	3	3	1	0	2	2	2	10.125	Tenang
25	4	3	3	3	4	2	1	2	14.500	Tenang
26	4	3	2	2	2	0	1	2	9.125	Tenang
27	4	2	3	3	3	3	2	1	13.000	Tenang
28	3	3	3	1	1	1	0	3	8.625	Tenang
29	4	3	1	2	2	2	3	4	13.500	Tenang
30	5	3	2	3	3	1	2	3	15.625	Tenang
31	2	1	2	0	0	2	2	4	7.250	Tenang

Gambar 33 Plot hasil analisa K-indeks dan A-indeks saat terjadi gangguan magnet bumi di bulan Desember 2021



Tabel 112 Daftar masalah monitoring magnet bumi selama tahun 2021

No	Waktu (UTC)	Keterangan
1	03 Maret 2021 07:41 – 05 Maret 2021 00:00	Masalah Listrik (off)
2	01 Mei 2021	Proton dipindahkan ke luar Gedung magnet (off)
3	21 – 26 Juni 2021	Pengecatan Gedung magnet (gangguan)
4	02 – 30 Juni 2021	Sensor proton bergeser (gangguan data)
5	03 Juli 2021 01:42 – 02:49	Sensor proton bergeser (gangguan data)
6	07 Juli 2021 23:00	Sensor proton bergeser (gangguan data)
7	22 – 24 Juli 2021	Pembuatan gubuk proton (gangguan data)
8	24 Juli 2021	Proton dipindahkan dalam gubuk proton (off)
9	04 Agustus 2021	Penggantian kabel listrik Gedung magnet (off)
10	28 September 2021 03:50 – 30 September 2021 01:12	UPS mati (off)
11	03 Oktober 2021 11:06 – 05 Oktober 2021 03:31	UPS mati (off)