



Australian Government
Geoscience Australia

NSW MinEx CRC Cobar Project
Airborne Magnetic and Radiometric Survey

Report

GA Contract No 00005950

GA Survey ID 5009

June 2021



Project No 2585

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1 GENERAL SURVEY INFORMATION

1.1 INTRODUCTION

In June 2021, GPX Surveys commenced a fixed wing airborne magnetic and radiometric survey for Geoscience Australia in the Cobar region of New South Wales. The project was part of the MinEx CRC Airborne Geophysical Survey Program and was flown using a Cessna 210 fixed wing aircraft. This report summarises the procedures, details and equipment used by GPX Surveys in the acquisition, verification and processing of the airborne geophysical data.

Client:	Geoscience Australia
GPX Project Number:	2585
GA Survey ID:	5009
Contract Number:	5950
Survey Area:	Cobar
Field Base:	Cobar Airport
Production:	8 June 2021 - 10 August 2021
Line km surveyed:	53,617.1

AREA	Flight Plan Kms	Delivered Kms
Cobar Main	39,967.9	40,287.8
EXT-1 Canbelego Nth	1,821.1	1,805.6
EXT-2 Coolabah	4,559.8	4,482.1
EXT-3 Miandetta	1,500.7	1,469.7
EXT-4 Babinda	1,426.0	1,401.7
EXT-5 Gilgunnia Sth	3,382.4	3,330.4
EXT-6 Bobadah	854.6	839.8
TOTAL KMS	53,512.5	53,617.1

1.2 SURVEY SUMMARY

The Project Manager mobilised on 2nd & 3rd June 2021 with the aircraft mobilisation delayed until 5th June due to weather conditions. The pilot was able to conduct a reconnaissance flight over the Cobar Extension 1 survey area enroute and prior to the field prestart safety meeting and the Job Safety Analysis (JSA) update and approval. Various calibration and data quality flights were flown over the 6th and 7th June survey acquisition then commenced on 8th June.

A comprehensive reporting requirement was followed which included daily and weekly reporting on survey progress, daily calibrations, landowner issues, etc and including a survey calibration report in the GA template provided to GA on 23rd June. These data are contained in this report and more detailed records can be found in the weekly reports.

Production flying was hampered by winds, rain and fog for most of the survey and a total of 12.5 possible production days were lost due to unfavourable winter weather conditions experienced due to contract, audit and landowner notification delays resulting in a significant project commencement schedule delay.

Landowner concerns over stock issues required careful management by GPX project manager and required a number of flight schedule changes resulting in some delays in completing and the data approval of the main survey block

Aircraft scheduled maintenance was conducted during the survey at both Dubbo and Armidale NSW. In order to minimise weather delays planned aircraft maintenance was brought forward where possible to occur during poor weather conditions.

A number of additional infill areas were flown for exploration companies during the survey and the final production flight was recorded on the 10th of August 2021. The crew departed the following day due to the rapidly escalating NSW COVID 19 pandemic situation resulting in regional lockdowns and all NSW including regional local government areas (LGAs) being declared high risk with respect to crews return to their home states of Queensland and WA. The raw data was approved by the GA quality control process a few days later.

All survey crew were required to QUARANTINE and isolate for 14 days in state government approved accommodation at GPX Surveys cost on their return to their respective states.

1.3 SURVEY PERSONNEL

The following personnel were involved on this project:

Geoscience Australia / GSNSW

GA Project Manager	Mike Barlow
GA Geophysicist	Phil Wynne
GSNSW Senior Geophysicist	Astrid Carlton
GSNSW Geophysicist	Sam Mathews
GA QC	Mark Baigent
GA Aviation Auditor	Lesley McChesney

GPX Surveys

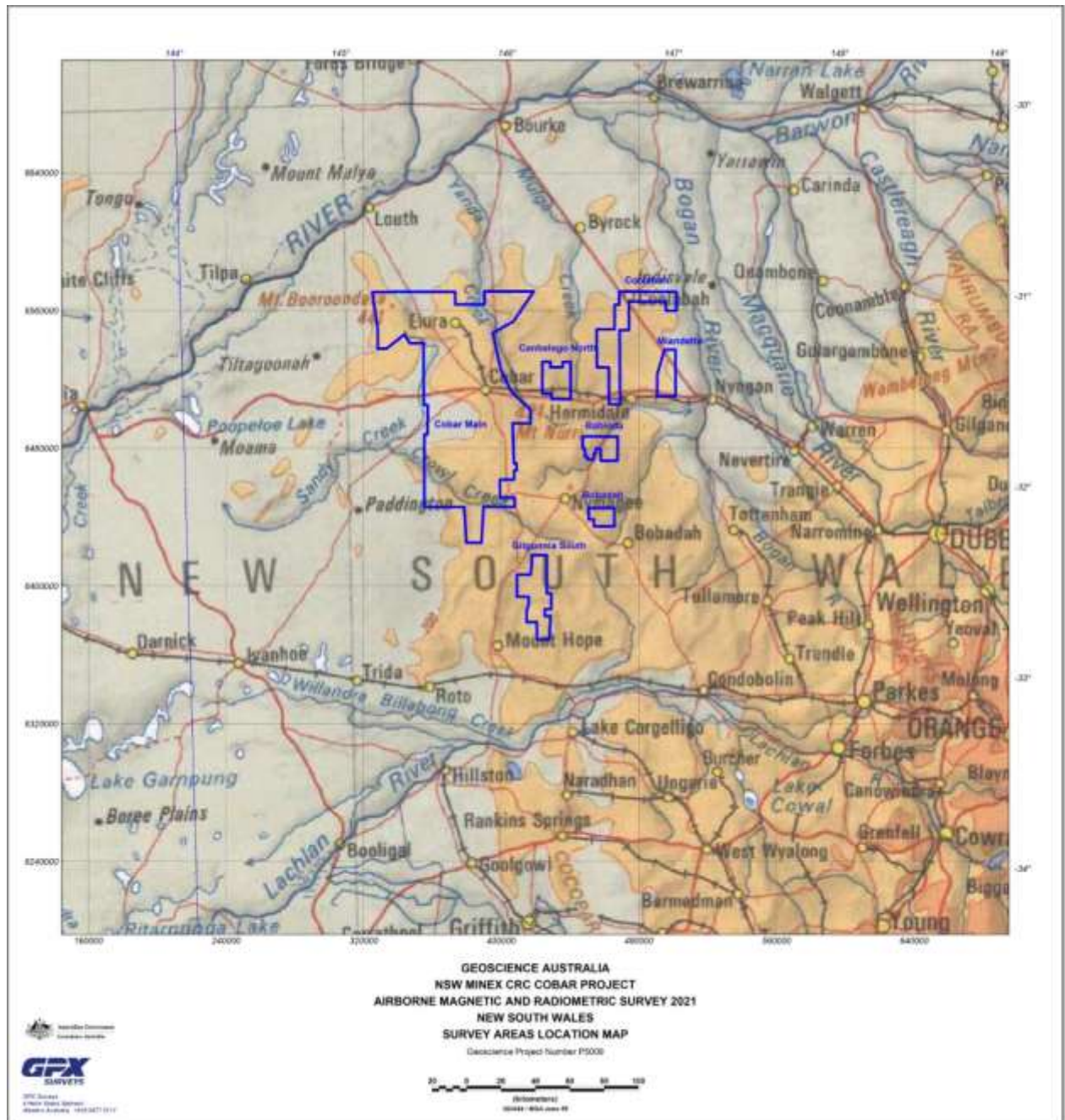
Project Manager:	Greg Reudavey
HSE Manager:	Greg Reudavey / Bob Blizzard
Field Project Manager:	Andrew Angelo
Data QC:	Ron Creagh
	Joe Kita
Final Data Processing:	Ron Creagh
Technical Support:	Mike Barrett
	Bob Taylor
SuperAir Survey Pilots:	Des Mcatamney
	Graham Simpson

2 SURVEY SPECIFICATIONS

2.1 SURVEY MAPS

Overview Map

The following map provides an overview of the planned survey area.



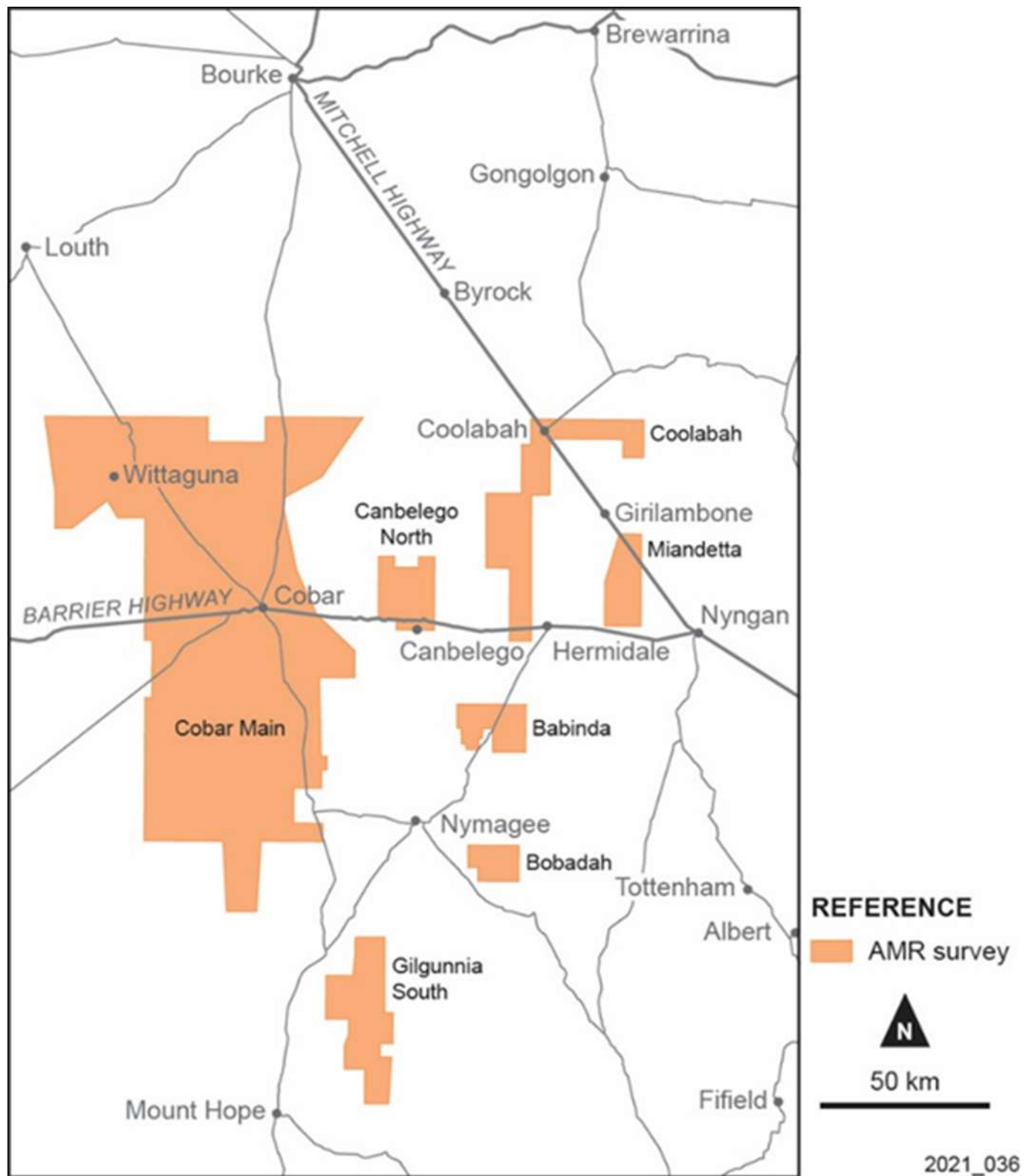


Figure 1 Overview of the planned survey areas

2.2 SURVEY SPECIFICATIONS

Job Specifications

The flying specifications, line specifications and data specifications are summarised in the table below.

Area Boundary GDA94 MGA55 Cobar Main	
Easting	Northing
419012.01	6571010.00
407052.82	6553547.46
395199.46	6546879.95
399856.14	6525660.32
405809.13	6512933.43
417164.61	6502244.16
417166.37	6494398.19
406713.55	6494386.02
407419.10	6471096.03
409085.98	6471096.03
409112.44	6467074.35
407551.39	6467074.35
407551.39	6461703.30
399375.75	6461703.30
399412.54	6451286.52
407971.33	6451319.39
407974.73	6445907.64
389792.00	6445914.12
388645.33	6425161.25
379834.69	6425161.25
378573.99	6445851.72
355322.54	6445854.73
355301.66	6488046.65
357293.69	6488042.62
357310.45	6505025.38
355029.37	6505031.11
354919.17	6541054.68
346862.81	6541054.68
343830.67	6546118.85
333432.11	6537864.32
328378.29	6537871.58
328367.29	6548688.25
325170.24	6570763.37
336609.96	6570763.37
336609.96	6570793.90
354904.14	6570793.90
354904.06	6570838.59

373334.97	6570817.42
373334.97	6563567.82
390321.25	6563567.82
390294.79	6571029.09
419012.01	6571010.00

Area Boundary GDA94 MGA55 Cobar Extension 1 Canbelego North	
Easting	Northing
423957.81	6530226.54
428625.55	6530206.27
428625.55	6526978.35
435769.32	6526978.35
435768.75	6530142.49
440478.91	6530100.44
440466.80	6508500.79
429301.36	6508500.79
429302.41	6511758.59
423968.88	6511738.32
423957.81	6530226.54

Area Boundary GDA94 MGA55 Cobar Extension 2 Coolabah	
Easting	Northing
455520.00	6549039.50
465951.94	6549047.33
465958.56	6563301.79
468670.54	6563301.79
468648.87	6570946.96
501959.98	6570867.58
501961.81	6559815.89
495848.10	6559807.98
495856.53	6565153.87
474292.95	6565153.87
474346.19	6548589.45
468909.32	6548494.93
469120.99	6505526.51
462704.83	6505500.05
462691.60	6526957.80
455706.59	6526997.49
455520.00	6549039.50

Area Boundary GDA94 MGA55 Cobar Extension 3 Miandetta	
Easting	Northing
501413.45	6537223.66
501438.14	6510114.39
490756.89	6510108.22
490754.48	6522903.36
494921.67	6537230.57
501413.45	6537223.66

Area Boundary GDA94 MGA55 Cobar Extension 4 Babinda	
Easting	Northing
447418.95	6486806.84
467725.76	6486727.47
467699.30	6472717.75
458002.30	6472638.38
457856.78	6479663.08
455071.05	6479673.75
454892.46	6476673.35
453867.20	6476673.35
453801.06	6473405.74
450196.10	6473432.19
450196.10	6475019.70
448807.03	6475019.70
448668.21	6479698.28
447498.32	6479702.77
447418.95	6486806.84
447418.95	6486806.84

Area Boundary GDA94 MGA55 Cobar Extension 5 Gilgunnia South	
Easting	Northing
426558.78	6417869.17
426545.58	6412611.96
426561.80	6412611.97
426578.50	6395636.44
429125.12	6395636.44
429125.12	6386547.99
425361.25	6386554.87
425394.49	6382526.31
428784.30	6382528.79
427911.18	6368796.88
420843.65	6368820.87

420846.79	6378956.90
414811.14	6378954.43
414811.14	6385807.15
416084.28	6389116.92
416084.20	6393720.68
409254.87	6393718.21
409254.87	6406497.61
417195.53	6406500.08
417827.51	6412603.95
417827.51	6417869.17
426558.78	6417869.17

Area Boundary GDA94 MGA55 Cobar Extension 6 Bobadah	
Easting	Northing
450910.19	6445169.49
465893.31	6445175.29
465893.31	6434591.93
453934.12	6434591.93
453934.12	6438613.61
450917.86	6438613.61
450910.19	6445169.49

Area Name	Traverse Line Spacing (m)	Traverse Line Direction	Tie Line Spacing (m)	Tie Line Direction	Sensor Height (m)	Planned Line Kilometres
Cobar (all areas)	200	East-West	2,000	North-South	60	53,512.9

Data Specifications	
Magnetometer	10 Hz
Radar Altimeter	10 Hz
Spectrometer	1 Hz
Differential GPS	5 Hz
Base magnetometer	1 Hz

3 EQUIPMENT SPECIFICATIONS

3.1 SURVEY EQUIPMENT SUMMARY

The following equipment was used in the survey.

Survey Platform:	Cessna 210N VH-STB
Navigation:	MNav Navigation System
Data Acquisition System:	Pico Envirotec IMPAC
Magnetometer Processor:	Pico Envirotec IMPAC (integrated)
Magnetometer Sensor:	Geometrics G-822A Cesium Vapour
Fluxgate Magnetometer:	Billingsley Ultra Miniature TFM 100G2
Magnetic Base Stations:	GEM GSM-19 Overhauser
Spectrometer:	Pico Envirotec AGRS (33.6 litre crystal)
Temperature and Humidity Sensor:	Vaisala HMP233
Barometric Pressure Sensor:	Vaisala PTB220
GPS and DGPS Receiver:	CSI DGPS Max
Radar Altimeter:	Collins ALT-50A
In-field Computer:	Laptop
In-field Software:	Pico Envirotec PEIView, ChrisDBF, GPX proprietary software



Figure 2 Cessna 210 VH-STB

3.2 NAVIGATION

Survey navigation was with an MNav navigation system which displays the flight line and survey polygon for the pilot. A pre-programmed line list is loaded before each flight but there is an option for manual override if the pre-programmed lines are in an area of active weather.

3.3 DATA ACQUISITION SYSTEM

The data acquisition system is a Pico Envirotec IMPAC. This is a versatile multi-function system that is capable of operation in many different configurations, depending on platform type, navigation and system requirements.

For this survey the IMPAC was used for all the recording of all survey data, including differentially corrected GPS position, magnetic, spectrometer and analogue data.

The recorded data from the internal solid-state disk is transferred to a USB thumb drive immediately following the completion of the survey flight, which is then transferred to the field laptop. Recorded data is not deleted from the main disk until this retrieved data has been verified error free.

3.4 MAGNETOMETER PROCESSOR

The magnetometer processor is integrated as part of the Pico Envirotec IMPAC hardware. This is an advanced frequency-measuring device that can support eight continuous signal magnetometers (Cs, He, K). It is a hardware-software designed system, exhibiting simplicity, easy interfacing and substantial versatility. Magnetometer readings are synchronized with the PPS (Pulse Per Second) signal derived from the GPS for accurate timing.

Specifications

Input:	Coaxial - Larmour signal over DC Supply
Resolution:	0.0002 nT (Gamma) = 0.2 picoTesla
Sampling rates:	5, 10, 20, 25, 50, 120 Hz
Dynamic range:	15,000 to 100,000nT
Synchronization:	GPS – PPS (Pulse Per Second)

3.5 MAGNETOMETER SENSOR

The magnetometer sensor is a Geometrics G-822A, which employs an optically pumped cesium-vapour atomic magnetic resonance system that functions as the frequency control element in an oscillator circuit.

Specifications

Operating Range:	20,000 – 100,000 nT
------------------	---------------------

Sensitivity:	Typically, 0.002 nT P-P at a 20Hz
Heading Error:	< 0.15 nT over entire 360°
Output:	Larmour frequency, 3.498572 Hz/nT

3.6 FLUXGATE MAGNETOMETER

The fluxgate magnetometer is a Billingsley Ultra Miniature TFM 100G2. This unit is a low noise, high sensitivity unit, packaged into a compact housing. An analog DC output voltage is produced for each of the measured X, Y and Z orthogonal components of the current magnetic field.

Specifications

Axial Alignment:	Orthogonality better than $\pm 1^\circ$
Sensitivity:	100 μ V / nT
Noise:	20pT RMS / Hz @ 1Hz
Output:	$\pm 100\mu$ T = ± 10 V

3.7 SPECTROMETER

The spectrometer is a Pico Envirotec AGRS system. The unit comprises of 2 detector crystal packs of 33.6 litres total volume of downward looking crystals. The sensor housings are all thermally insulated and shock-mounted. Signal processing automatically perform digital gain control to the individual crystal spectra, ensuring the summed spectrum is stable. The system recorded the raw spectra of each of the 8 crystals and summed 512 channel spectra.

Specifications

Sensitivity:	20 KeV – 3.0 MeV
Maximum count rate:	250,000 counts/sec
Detector volume:	16.8 Litres (each)

3.8 BAROMETRIC PRESSURE SENSOR

The barometric pressure sensor is a Vaisala PTB220. The unit provides both a digital RS232 output and analogue voltage or current output directly proportional to the measured barometric pressure. The unit is a Class “A” commercial grade device housed in a rugged aluminium enclosure.

Specifications

Range:	500 – 1100 hPa
Resolution:	0.01 hPa

Accuracy at +20°C: ± 0.1 hPa

3.9 TEMPERATURE/HUMIDITY SENSOR

The temperature and humidity sensor used is a Vaisala HMP233. The unit provides both a digital RS232 output and analogue voltage or current output directly proportional to the measured temperature and humidity. The unit is a Class “A” commercial grade device housed in a rugged aluminium enclosure.

Specifications (Temperature)

Range	-40 - +80 °C
Resolution	0.1 °C
Accuracy at +20°C	± 0.1 °C

Specifications (Humidity)

Range	0 – 100 %RH
Resolution	0.1 %
Accuracy at +20°C	± 2 %RH (0-90 %RH) ± 3 %RH (90-100 %RH)

3.10 RADAR ALTIMETER

The radar altimeter is a Rockwell Collins ALT-50A two-antenna unit operating at a centre frequency of 4300MHz. The voltage output to the data system is directly proportional to the aircraft flying height with an output characteristic of 20mV/ft up to 500ft, then 10.4V + 3mV/ft above 500ft.

Specifications

Accuracy:	± 3 ft - 0 to 150ft range $\pm 2\%$ of indicated altitude – 150-500 ft $\pm 3.5\%$ of indicated altitude – 500-2000 ft
Measurement Rate:	10Hz minimum

3.11 DGPS RECEIVER

The DGPS receiver is a CSI DGPS MAX, which is a 12-channel combined GPS/DGPS unit. The DGPS MAX is able to use differential corrections received through an internal WAAS demodulator, VLF beacon receiver, or the OmniSTAR DGPS Service. The DGPS position data was used for aircraft navigation and for processing the aeromagnetic data.

Specifications

GPS Position update rate:	5Hz
---------------------------	-----

GPS Input frequency:	L1
DGPS Update rate:	approx 6 seconds
DGPS Solution Used:	OmniSTAR VBS
Antenna:	Fugro L1/Differential Wideband

3.12 BASE MAGNETOMETER

Diurnal activity was monitored using portable GEM GSM-19W Overhauser magnetometers and sampled at 1 Hz. The unit has a built-in GPS receiver. Two magnetometers were used daily to ensure there was a backup.

Specifications

Type:	Overhauser Magnetometer
Resolution:	0.01 nT
Sensitivity:	0.02 nT
Absolute Accuracy:	± 0.1nT
Dynamic Range:	10,000 to 120,000 nT
Sampling Rate:	1 hour to 5 Hz
Data Storage:	Internal memory
Data Retrieval:	Up to 115,200bps serial transfer

Base Station Location

Magnetic base stations at Cobar was located near the air strip and was used for the duration of the survey.

Primary Base Station Location

Coordinates:	145.79964 E 31.53527 S
Datum:	WGS84

Secondary Base Station Location

Coordinates:	145.79927 E 31.53557 S
Datum:	WGS84



Figure 3 Primary base magnetometer location (image courtesy of Google Earth).

4 EQUIPMENT CALIBRATIONS AND DATA ACQUISITION CHECKS

4.1 DYNAMIC MAGNETOMETER COMPENSATION

Aircraft compensation tests were flown at high altitude on the 4 survey line headings and also at $\pm 15^\circ$ to the line headings (to accommodate for cross wind flying conditions). The data for each heading consists of a series of aircraft manoeuvres with large angular excursions: specifically pitches, rolls and yaws. This is done to artificially create the worst possible attitudes and rates of attitudinal change likely to be encountered while on line and compensate for any magnetic noise created by the aircraft's motion within the earth's magnetic field. This data is processed to obtain the REAL TIME COMPENSATION terms of which the aircraft used the standard 17 term model. These terms include permanent, induced and eddy values. These coefficients may be applied in real time or during post processing. Note that this form of compensation will only remove those noise effects modelled in the manoeuvres test flight. External noise sources and random motions of the stinger with respect to the aircraft airframe generally establish the noise floor for this type of installation.

The compensation correction is applied to all magnetic data to remove the manoeuvre effects and heading error.

The following is the date in which a compensation test had been flown and the flights they were applied to.

Aircraft	Compensation Flight Date		Compensation applied to flight #
VH-STB	7 th June 2021		All Flights

The compensation flight location, compensation flight results and the diurnal activity during the compensation flight is summarised below.

Magnetic compensation flight paths

The image below is of the compensation flight path for VH-STB on the 7th June 2021.

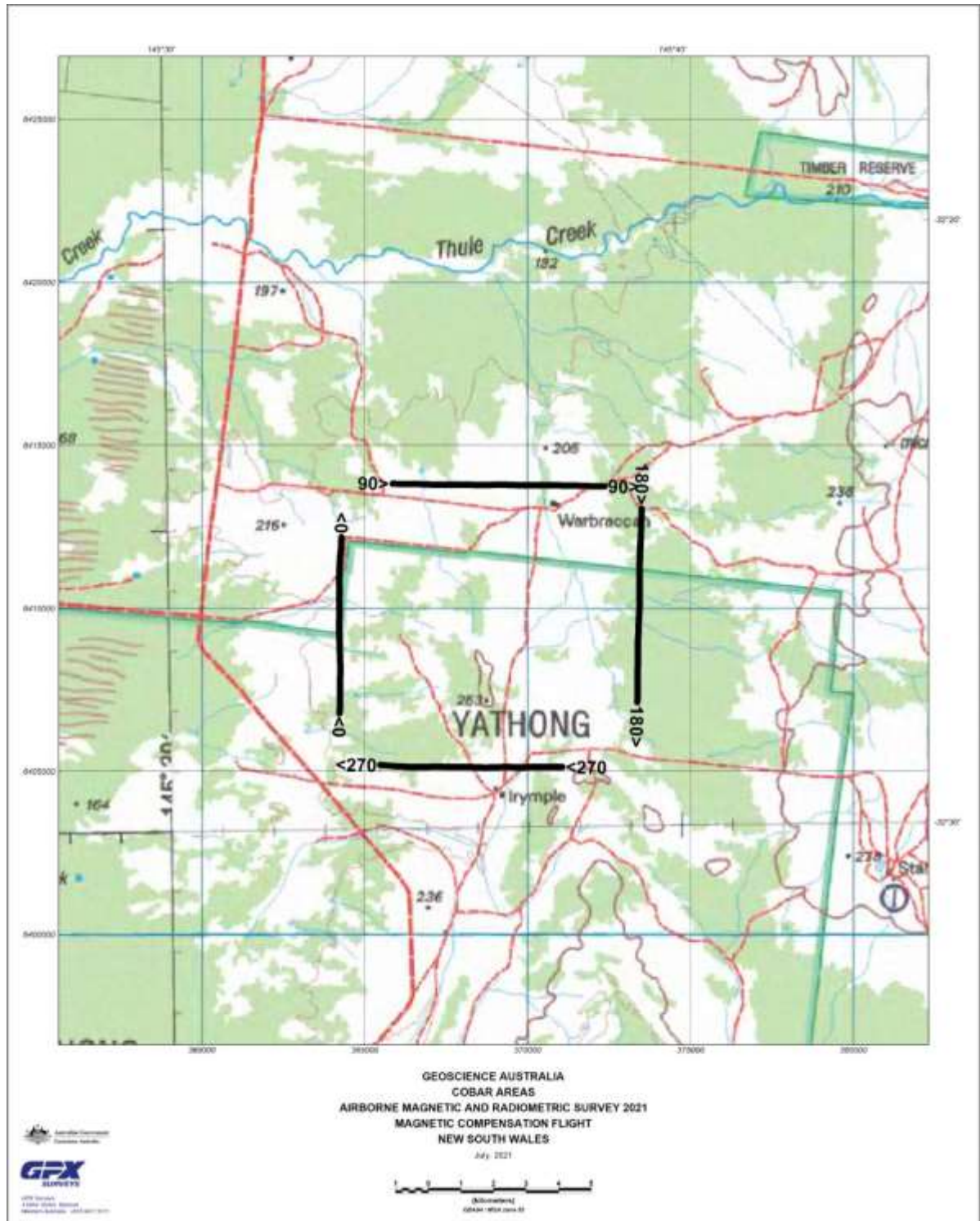


Figure 4 Flight path of the VH-STB compensation flight.

Compensation results for VH-STB

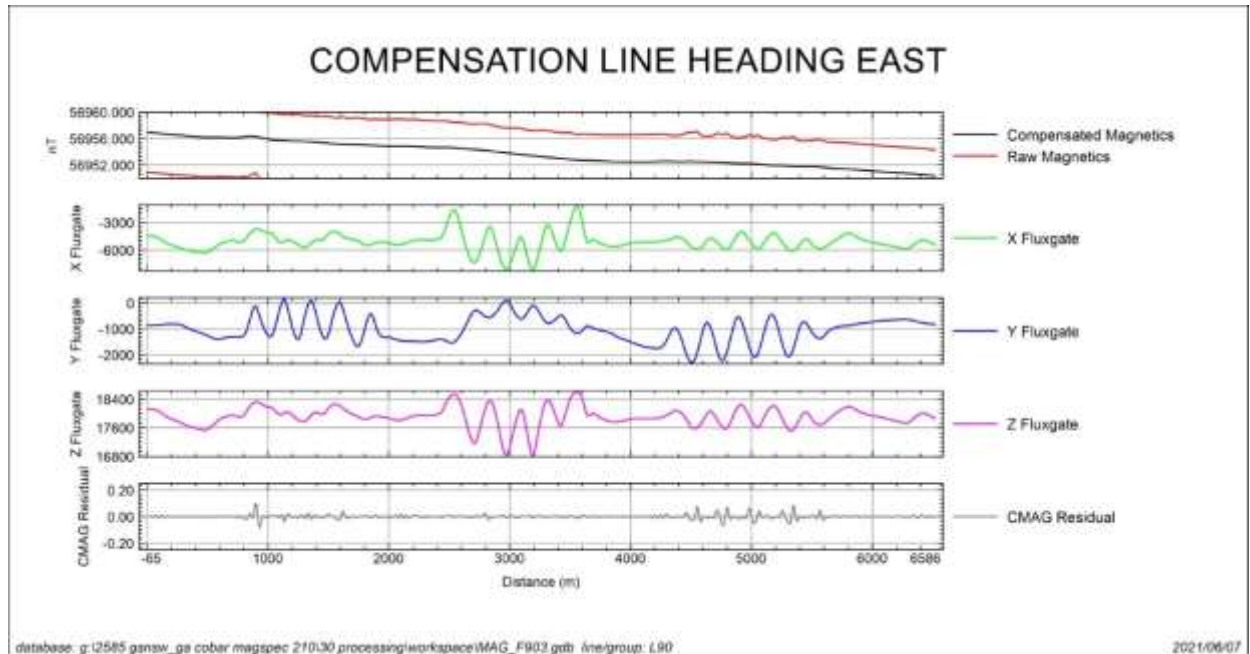


Figure 5 East bound compensation line (VH-STB).

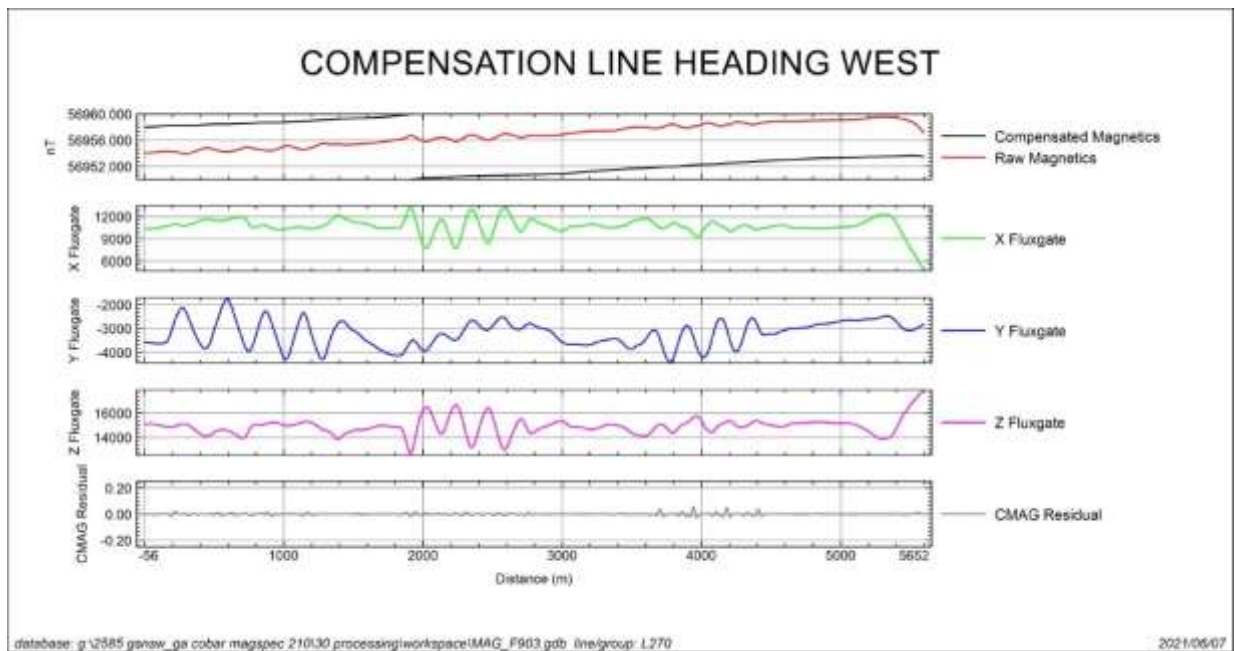


Figure 6 West bound compensation line (VH-STB).

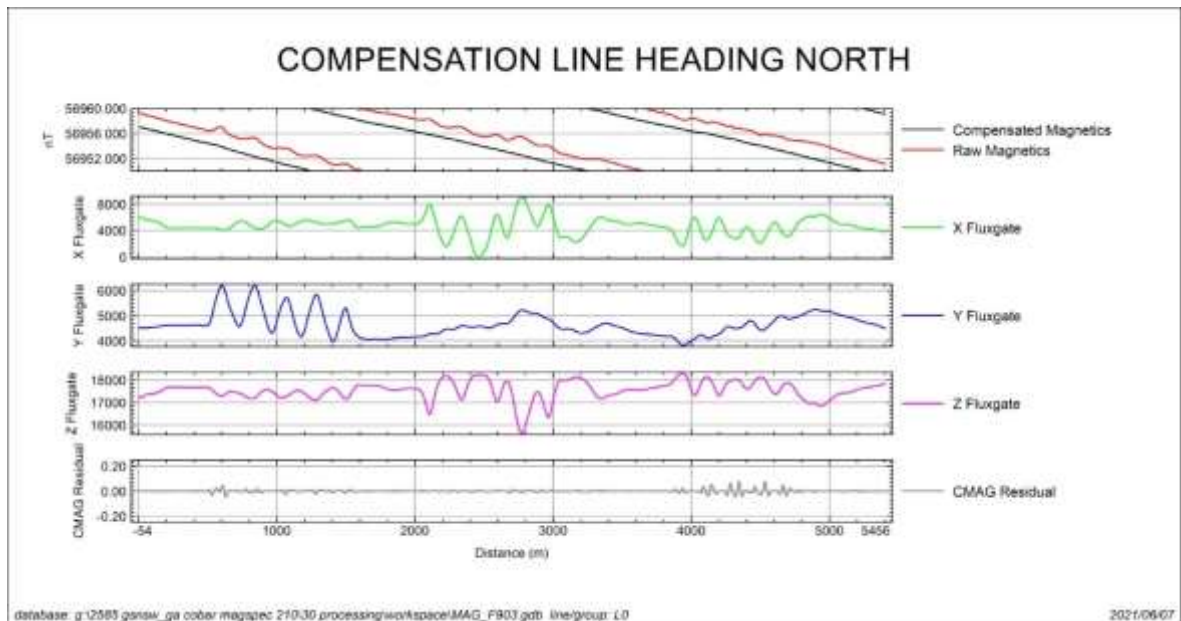


Figure 7 North bound compensation line (VH-STB)

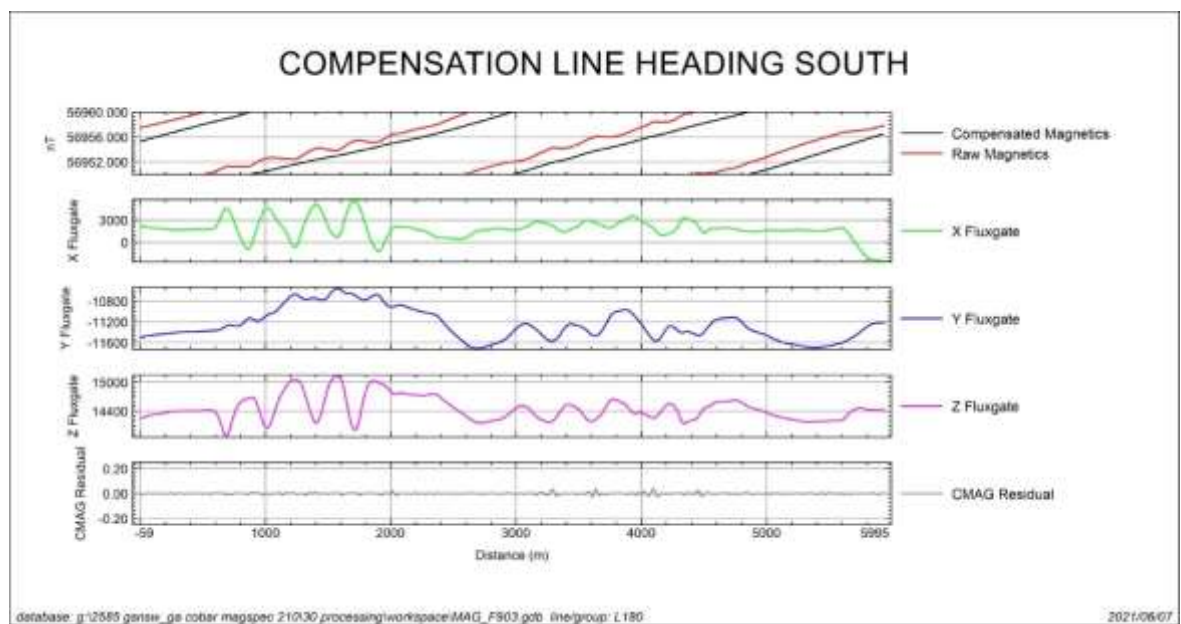


Figure 8 South bound compensation line (VH-STB).

Diurnal activity during compensation flights

The diurnal collected during the compensation flights was relatively quiet as shown in the following figure.

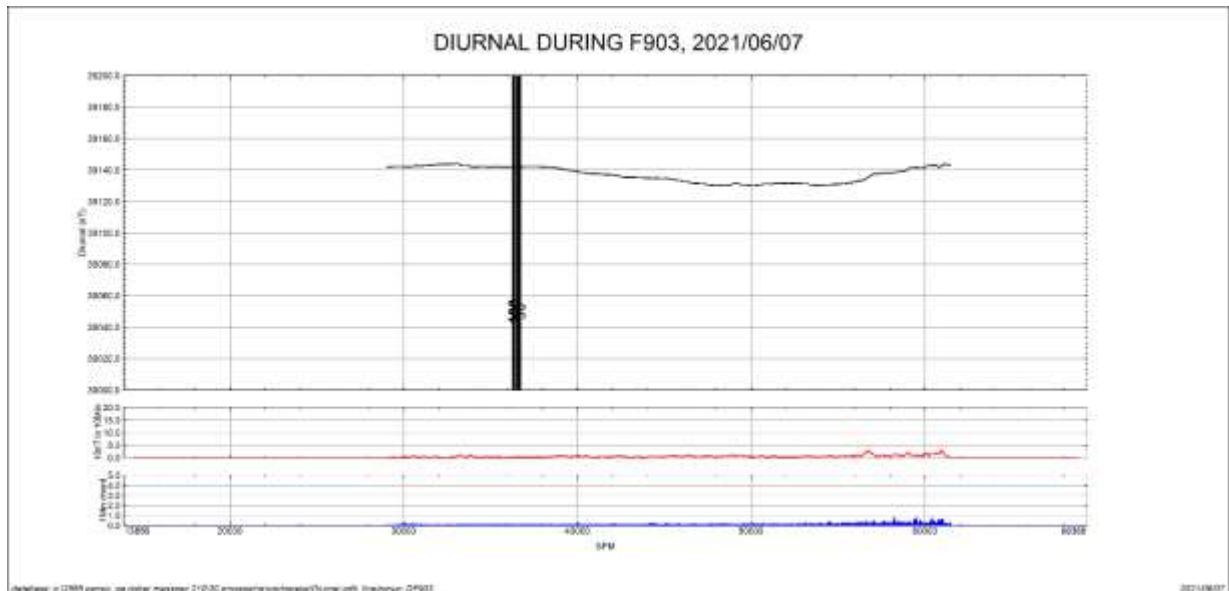


Figure 9 Diurnal activity during VH-STB magnetic compensation flight.

Figure of Merit

The following table summarises the compensation figure of merit. It is calculated by summing the maximum peak-to-peak of each manoeuvre, in each direction. A high pass filter of 2 seconds was applied to remove the DC offset of the magnetic field.

Figure of Merit	
Pre-Compensation	4.0364 nT
Post Compensation	0.1826 nT

4.2 SYSTEM PARALLAX SUMMARY

One of the processing parameters required to process digital data was the parallax or offset time, between the time the digital reading was taken by the instrument and the time the position fix for the fiducial of the reading was obtained. Each instrument - magnetometer, altimeter, spectrometer, barometer and thermometer - may have a different parallax, so the parallax must be computed for each instrument.

The parallax correction derived is the correction to be applied to each survey line. A positive parallax indicates the instrument reading is ahead of the position of the fiducial. Each integer fiducial represents one second so the parallax can be expressed in either fiducial or seconds.

The correct fiducial is computed by:

$$P_c = F_r - P_i$$

where

P_c = Parallax corrected fiducial
 F_r = Fiducial for recorded reading
 P_i = Instrument parallax

A summary of the parallax corrections to the different data types is shown below:

Data	Parallax applied (seconds) VH-STB
GPS Position (Mag, DEM Data)	0
GPS Position (Radiometric Data)	0
Magnetic Data	0
Temperature (Radiometric Data)	0
Pressure (Radiometric Data)	0
Radiometric Data	1

4.3 RADIOMETRIC CALIBRATIONS

A full set of radiometric calibrations was done prior to mobilising to Cobar. The calibration methods are as generally described by Grasty and Minty (1995). The test results and calibration dates are summarised in the table below.

Calibration Test	Date	Window	Value
Compton Stripping Ratios (Pad Test - Northam)	3 rd February 2021	Alpha	0.3221
		Beta	0.4615
		Gamma	0.8433
		a	0.0380
Height Attenuation Coefficients (Test Range - Carnamah)	4 th February 2021	TC	0.00799
		K	0.01089
		U	0.01528
		Th	0.00784
Air/Ground Sensitivity Constants @ 60m Nominal Flying Height (Test Range - Carnamah)	4 th February 2021	Dose	29.225
		K	102.166
		U	6.201
		Th	6.336
Aircraft Background (Cosmic Flight - offshore south of Dongara)	4 th February 2021	TC	185.80
		K	14.14
		U	9.973
		Th	0.931
Cosmic Stripping Ratios (Cosmic Flight – offshore south of Dongara)	4 th February 2021	TC	1.007
		K	0.058
		U	0.044
		Th	0.056

Cosmic and Aircraft Background Coefficients

Cosmic and aircraft background coefficients were obtained on 4th February 2021 from a flight offshore Dongara WA.

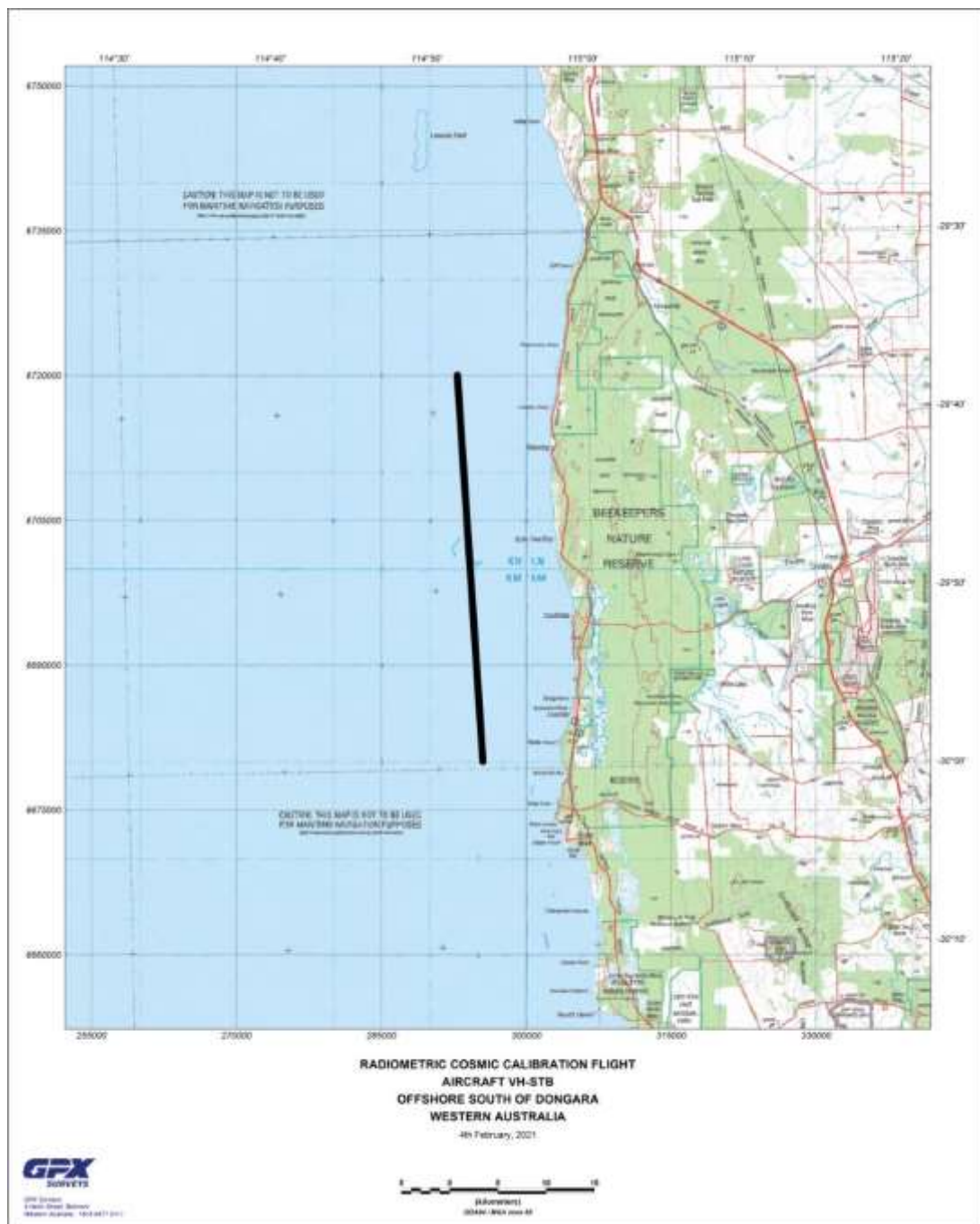
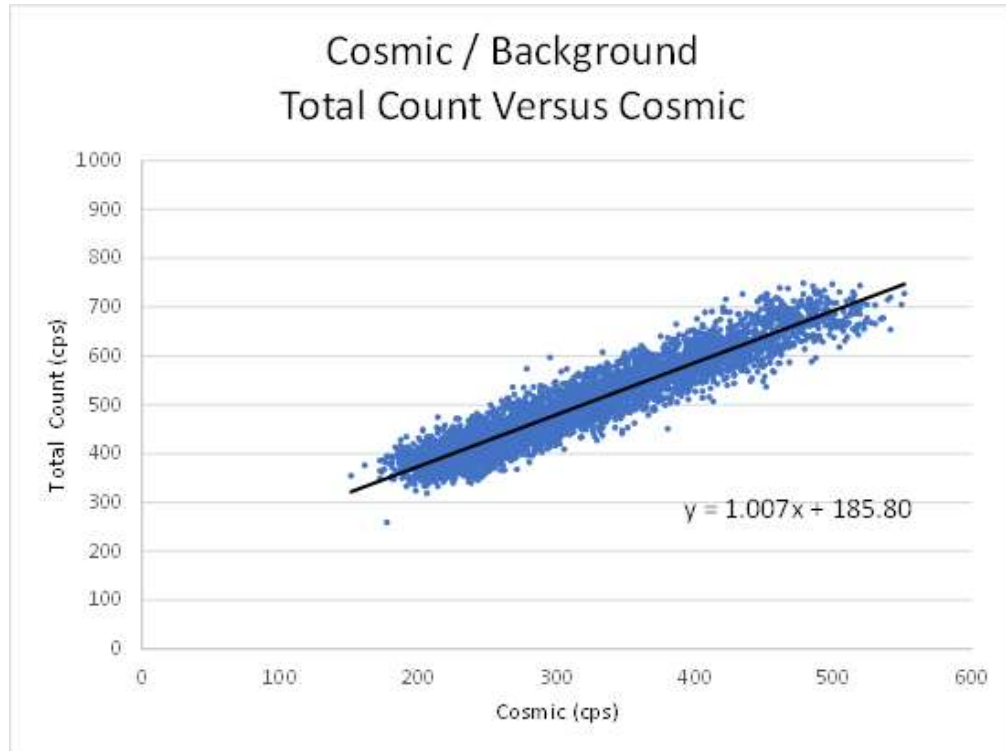
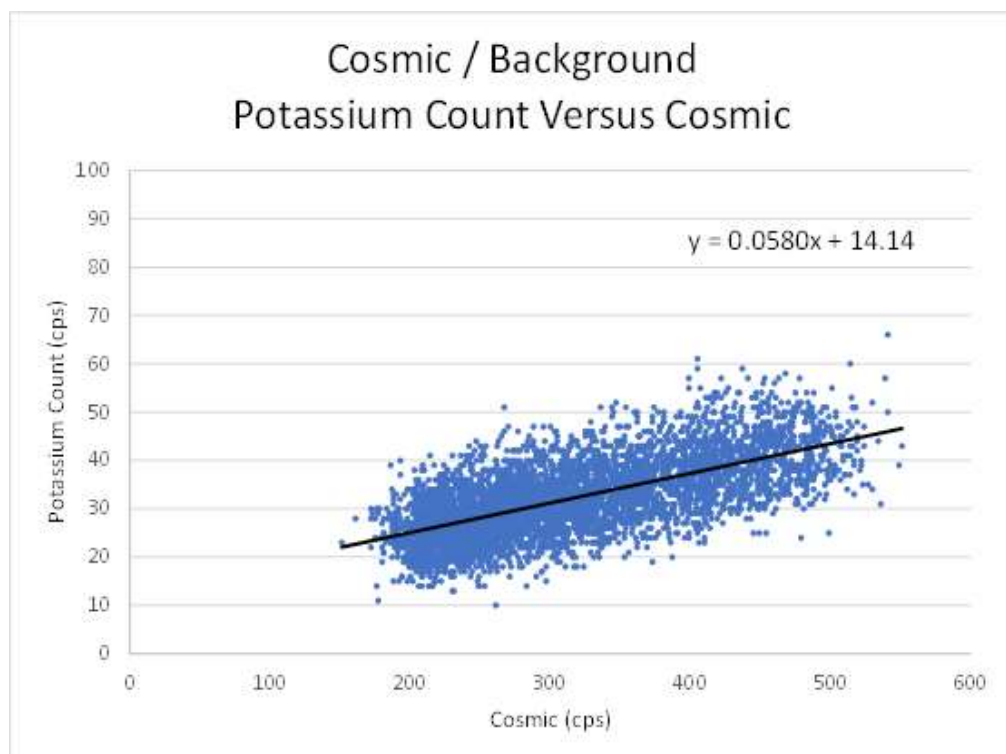
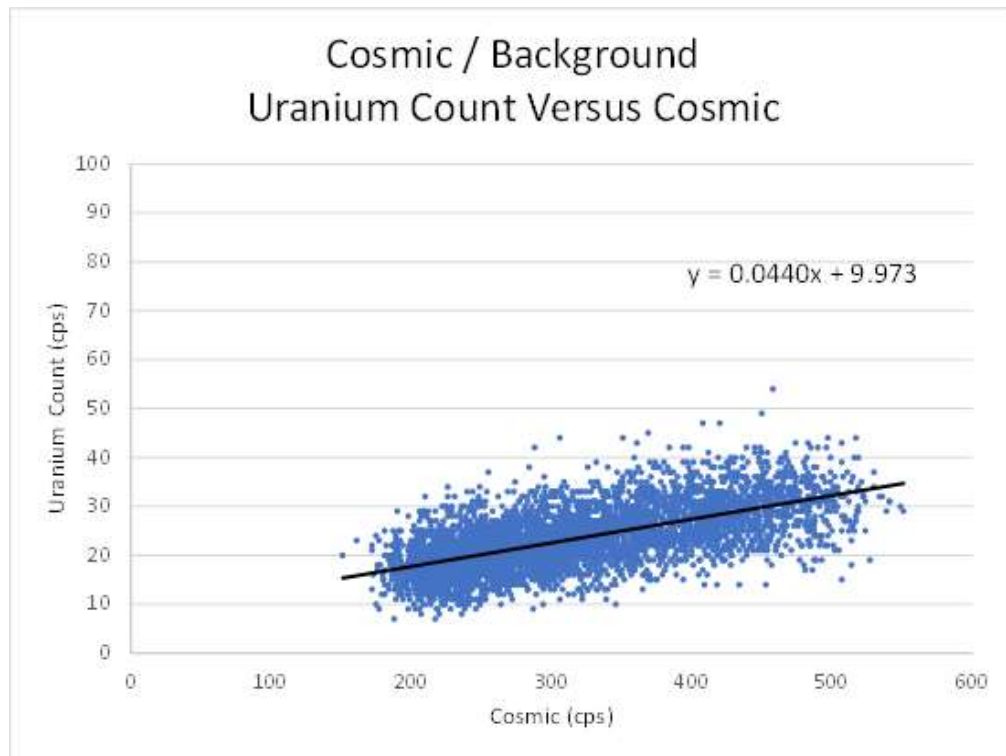
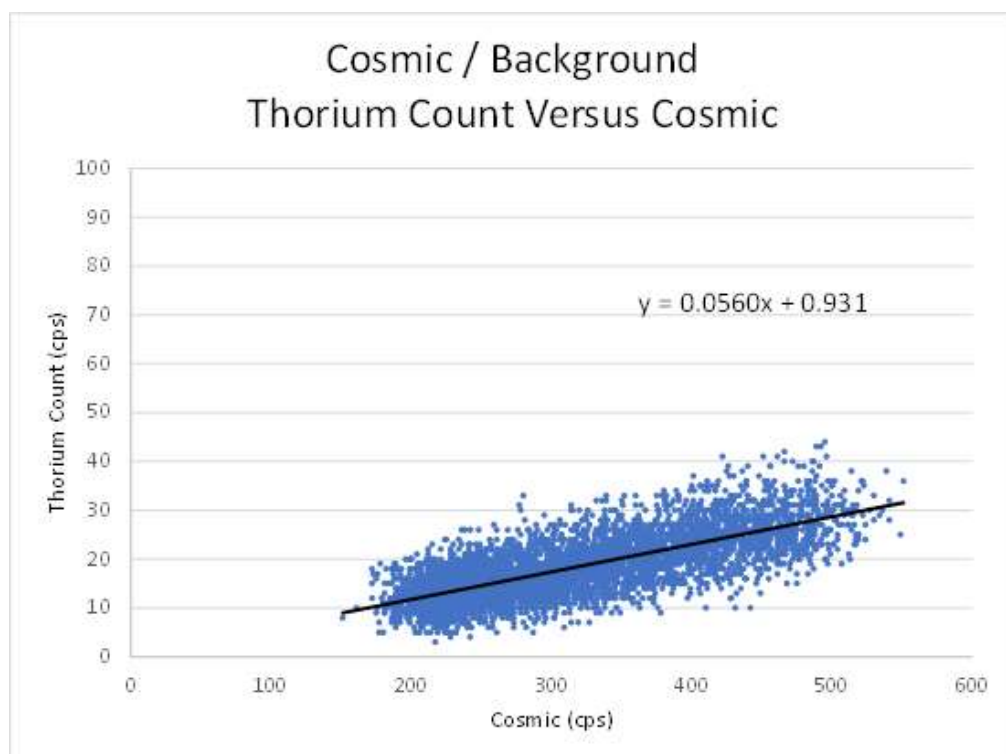


Figure 10 Cosmic and Background Flight path

The following plots were derived from the aircraft data.





Carnamah Test Range

The height attenuation was obtained on the 4th February 2021 at Carnamah.



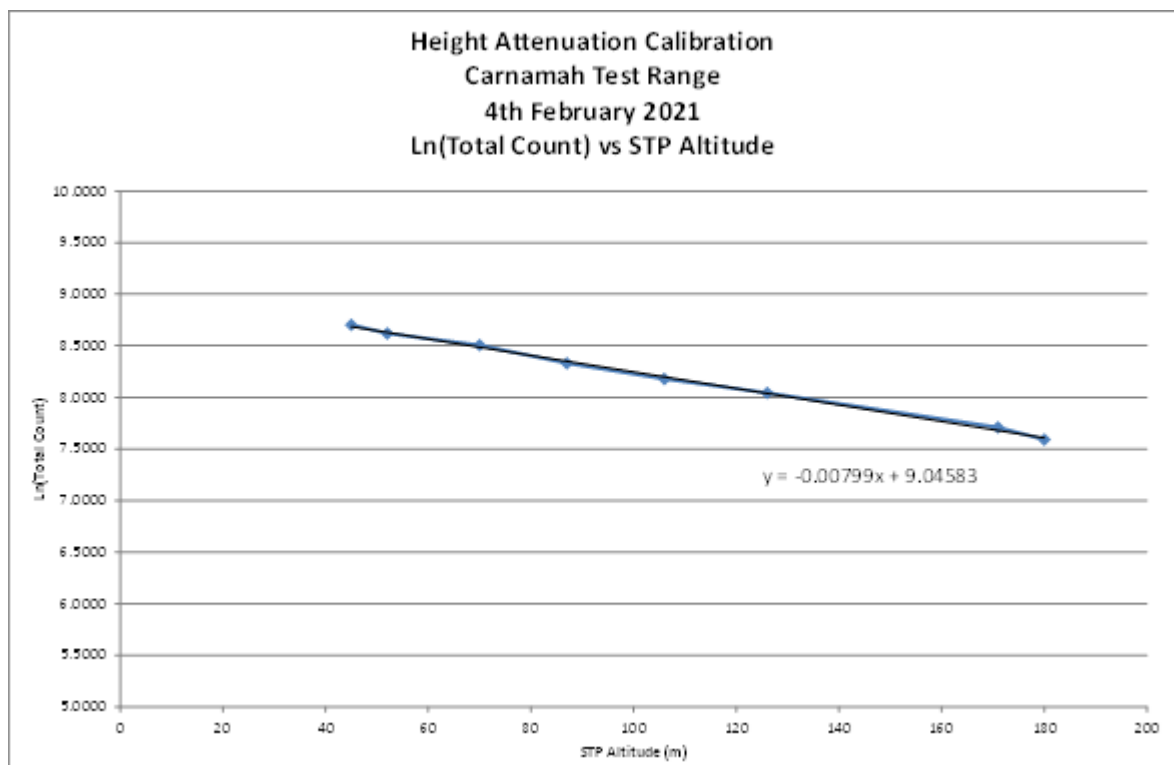
Figure 11 Carnamah Test Range Flight Path

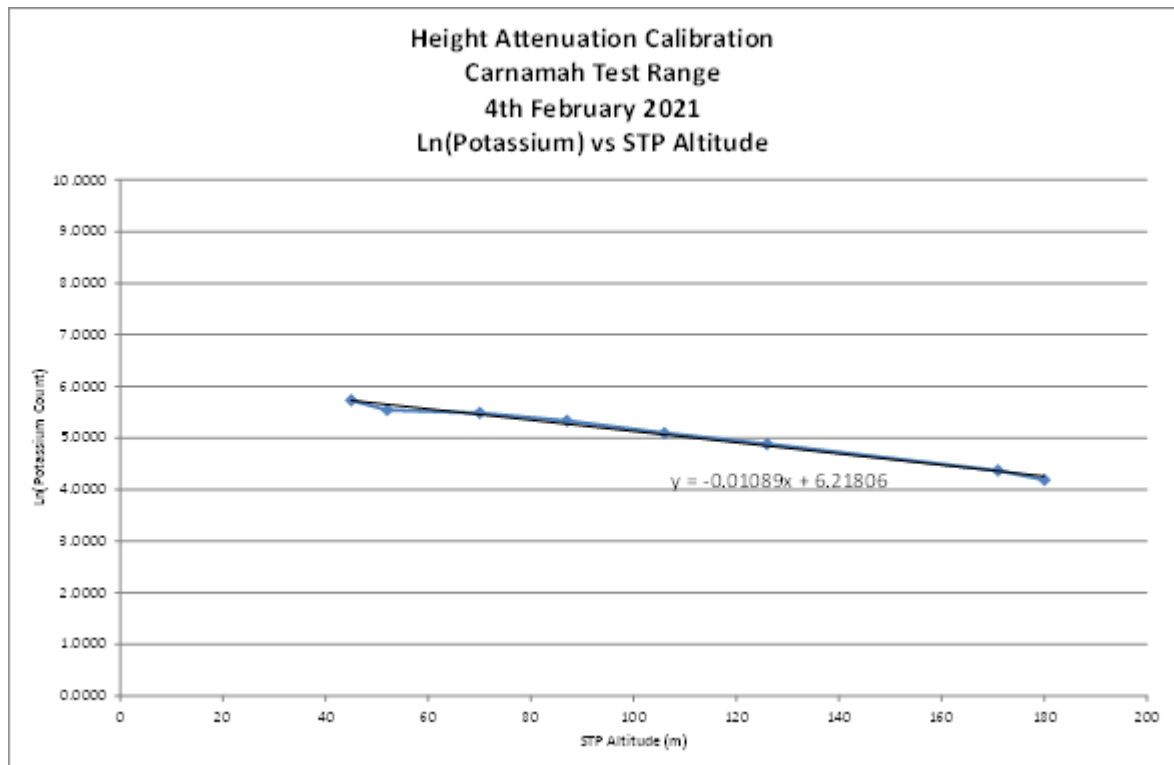
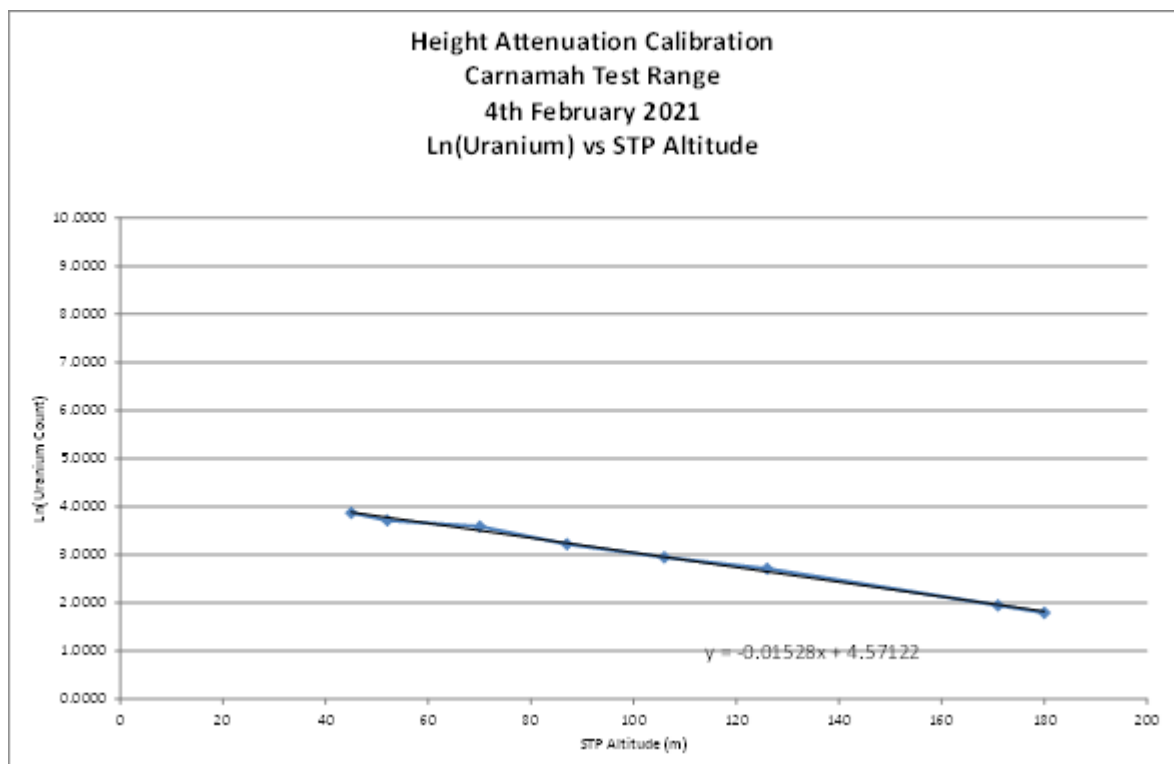
The thorium source test was acquired before and after the flight to ensure stability. The results are in the table below.

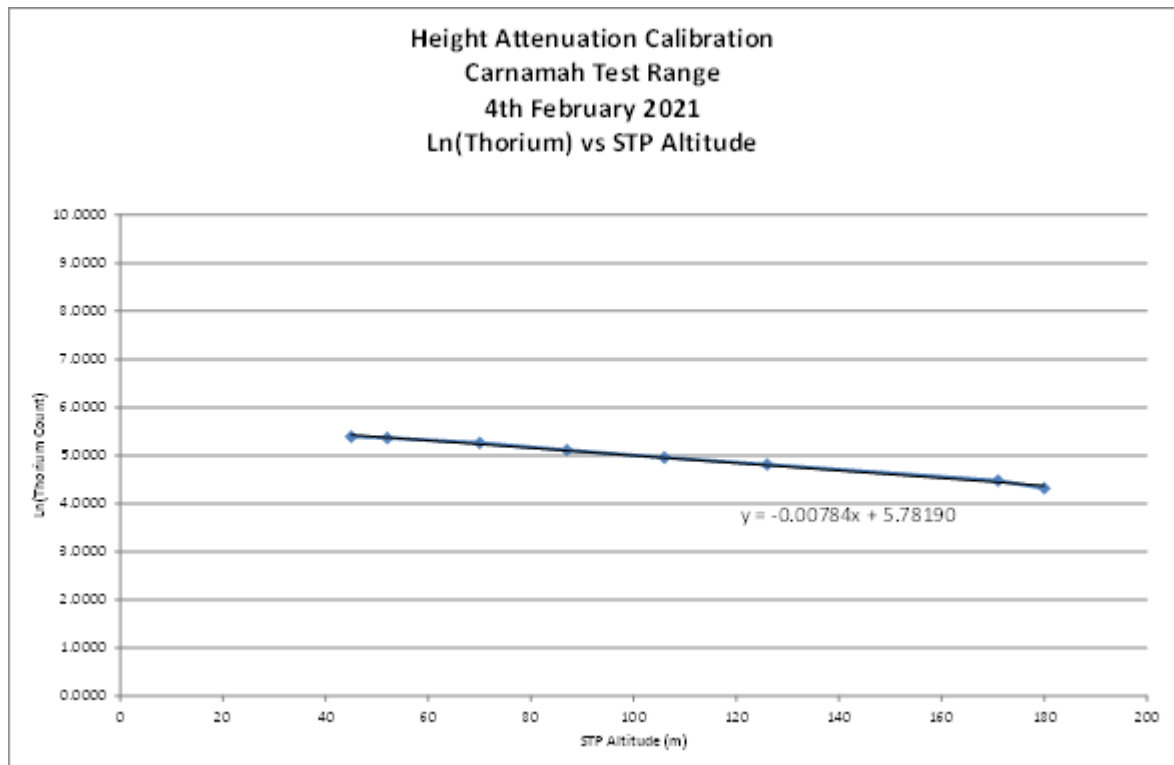
GPX Surveys Thorium Source Test	
Job Number	2585
Client	Geoscience Australia
Survey Area	Cobar
Aircraft	VH-STB
Base	Northam, WA
Specification	
Maximum Thorium Variation	5%

Date	Flight #	Channel	Peak Position	PHR	Raw (cps)	B/G (cps)	Normalised (cps)	FHTM/FHMM	Readings	Running Average	% Change
4/02/2021	999	Thorium	446.5	4.8	967.2	745.9	221.3	2.0	380	221.3	0.0
4/02/2021	999	Thorium	445.9	5.1	969.4	743.8	225.6	2.1	400	223.5	1.9

The following charts are the results from the Carnamah test range.







Conversion of Counts to Ground Concentrations

Air to ground conversions factors were determined by comparison of the airborne and ground radiometric data acquired along the central line of the Carnamah test range, Western Australia, on 4th February 2021.

The ground concentrations (K, U, Th) and calculated dose rate (A) are summarised below.

Dose Rate and Measured Ground Concentrations (Carnamah)			
Dose Rate (nGy/h)	K (%)	U (ppm)	Th (ppm)
181.979	2.559	6.232	31.987

Table 1: Carnamah ground concentrations summary

The airborne data was energy calibrated, corrected for cosmic and aircraft background, radon background removed, heights converted to effective height at STP, and stripping corrections were applied. The data was clipped to the same length as the ground traverse and the counts for each line were summed and windowed to K, U and Th.

Each window was then corrected to a nominal height h using the formula

$$N_h = N_{STP} e^{-\mu(h-h_{STP})} \quad (1)$$

where	N_h	=	The count rate at nominal height h
	h	=	The nominal height to correct the data to
	N_{STP}	=	Measured count rate corrected at STP height
	μ	=	The height attenuation coefficient for the window
	h_{STP}	=	STP height of the flown line.

The sensitivity coefficients for each window were then calculated using the formula

$$S = \frac{N}{C} \quad (2)$$

where	S	=	The sensitivity coefficient of the window
	N	=	Corrected average counts at nominal survey height
	C	=	Average ground concentration of radioelement (or dose rate)

The sensitivity coefficients are summarised below.

Sensitivity Constants S Calculated from Carnamah Test Range				
Nominal survey height	Dose (nGy/h)	K (1%)	U (1ppm)	Th (1ppm)
60m	29.225	102.166	6.201	6.336

4.4 ALTIMETER LINEARITY

On 6th July 2021 an altimeter linearity flight was flown over the Cobar airstrip on barometric instruments at terrain clearances of approximately 30, 60, 80, 100, 150 and 300 metres.

The GPS data was corrected to the Australian Height Datum, and correction applied to allow for the physical offsets between the GPS and radar altimeters. The physical sensor offsets are summarised in the following table.

	Altimeter Offsets (m)
GPS to airstrip (m)	2.53
Radar to Airstrip (m)	0.58
GPS to Radar (m)	1.95

The altimeter results are as follows.

Approx. Terrain Clearance (m)	GNSS Height (m)		Laser Altimeter Height (m)			Radar Altimeter Height (m)		
	Raw	Mean Ground Level	Raw	Vertically Corrected	Calibrated	Raw	Vertically Corrected	Calibrated
30	243.5	23.5				25.7	27.6	29.5
60	277.4	57.4				58.8	60.7	58.1
80	292.9	72.9				75.9	77.9	72.9
100	313.1	93.05				96.3	98.3	92.4
150	354.9	134.9				140.8	142.7	134.8
300	456.4	236.4				166.0	168.0	236.5

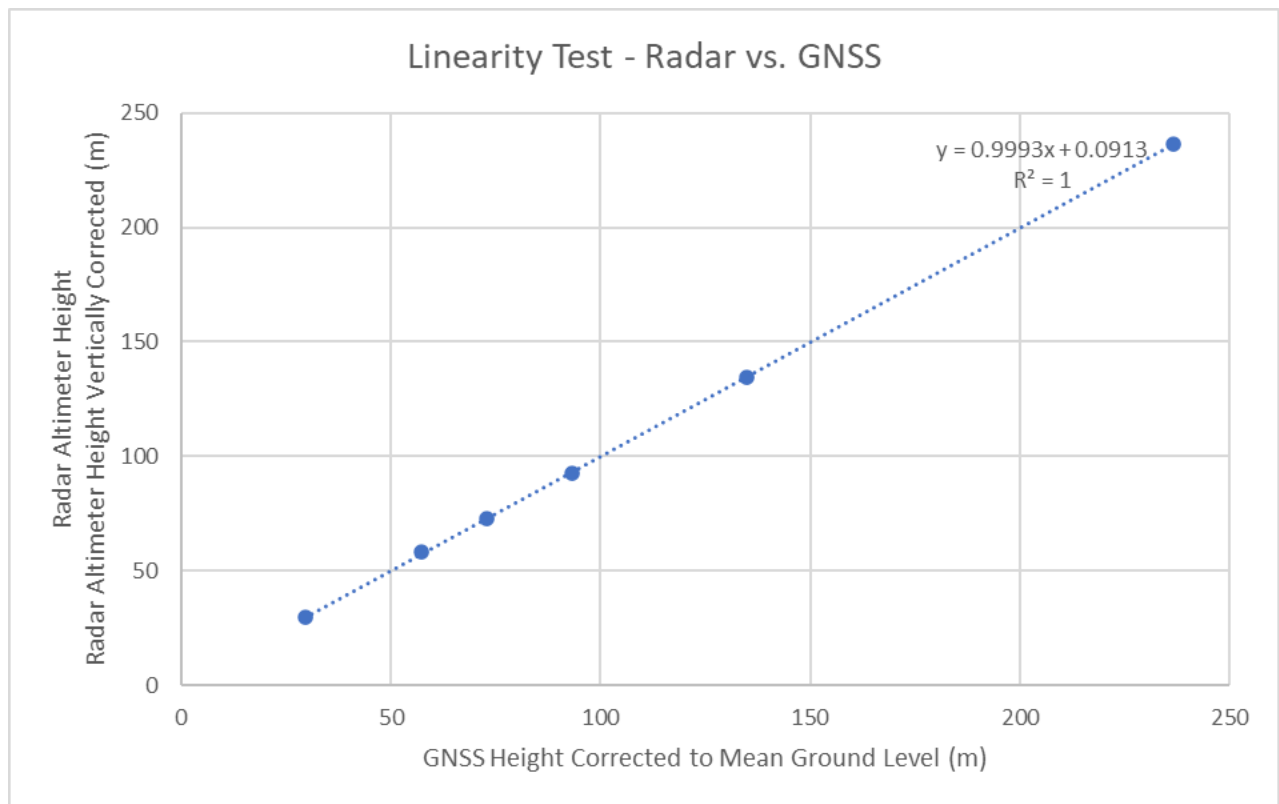


Figure 12 Radar Linearity

4.5 DAILY RADIOMETRIC SYSTEM TESTS

Daily tests were performed on the radiometric system to monitor system sensitivity and stability. These tests are as generally described by Grasty and Minty (1995) and the International Atomic Energy Agency (2003).

A system stability test was performed at the start and end of each day. This was done using a thorium source placed a least 40cm from the centre of each detector. The average deadtime and background corrected thorium window was calculated and checked to be within 5 percent from the average of all other calibrations.

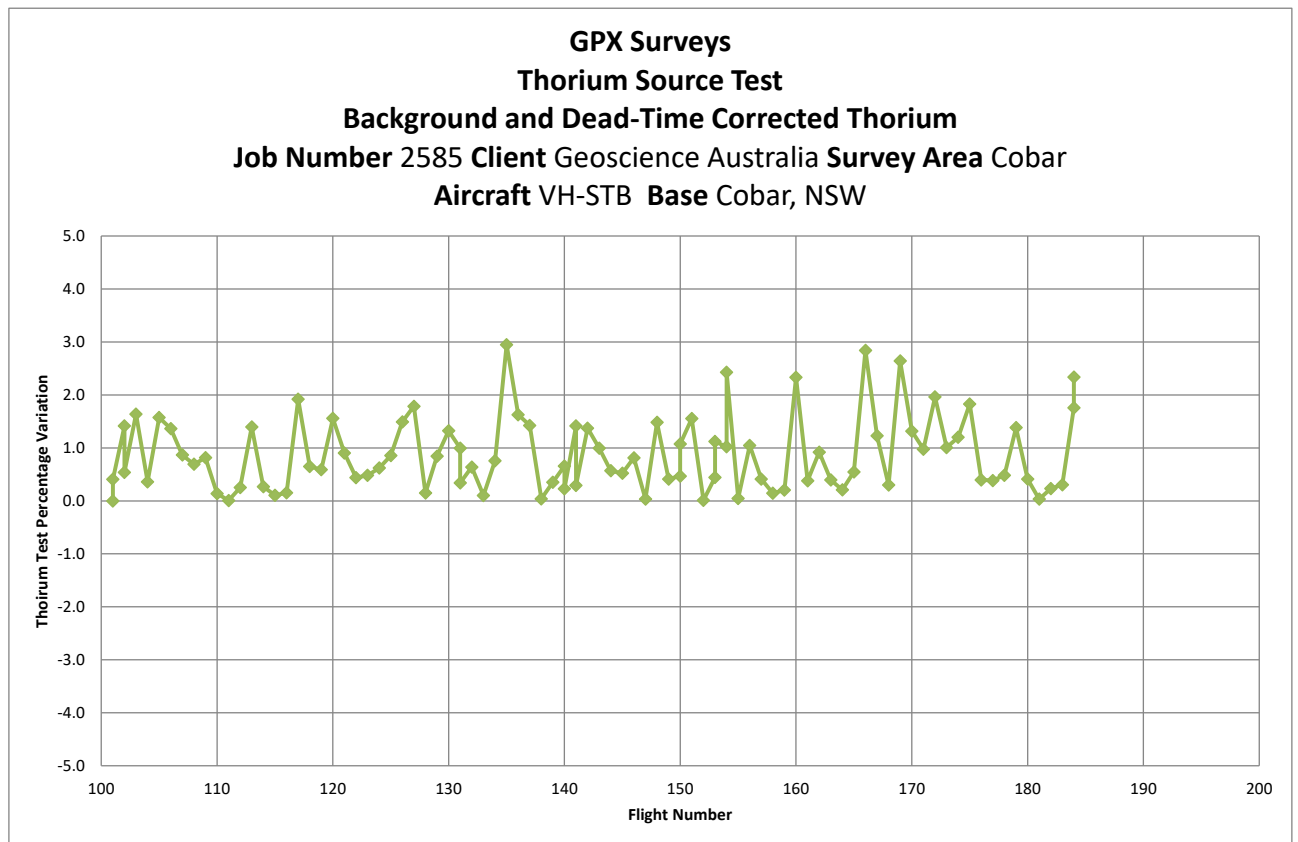


Figure 13 Chart of Thorium Test - Percentage Variation

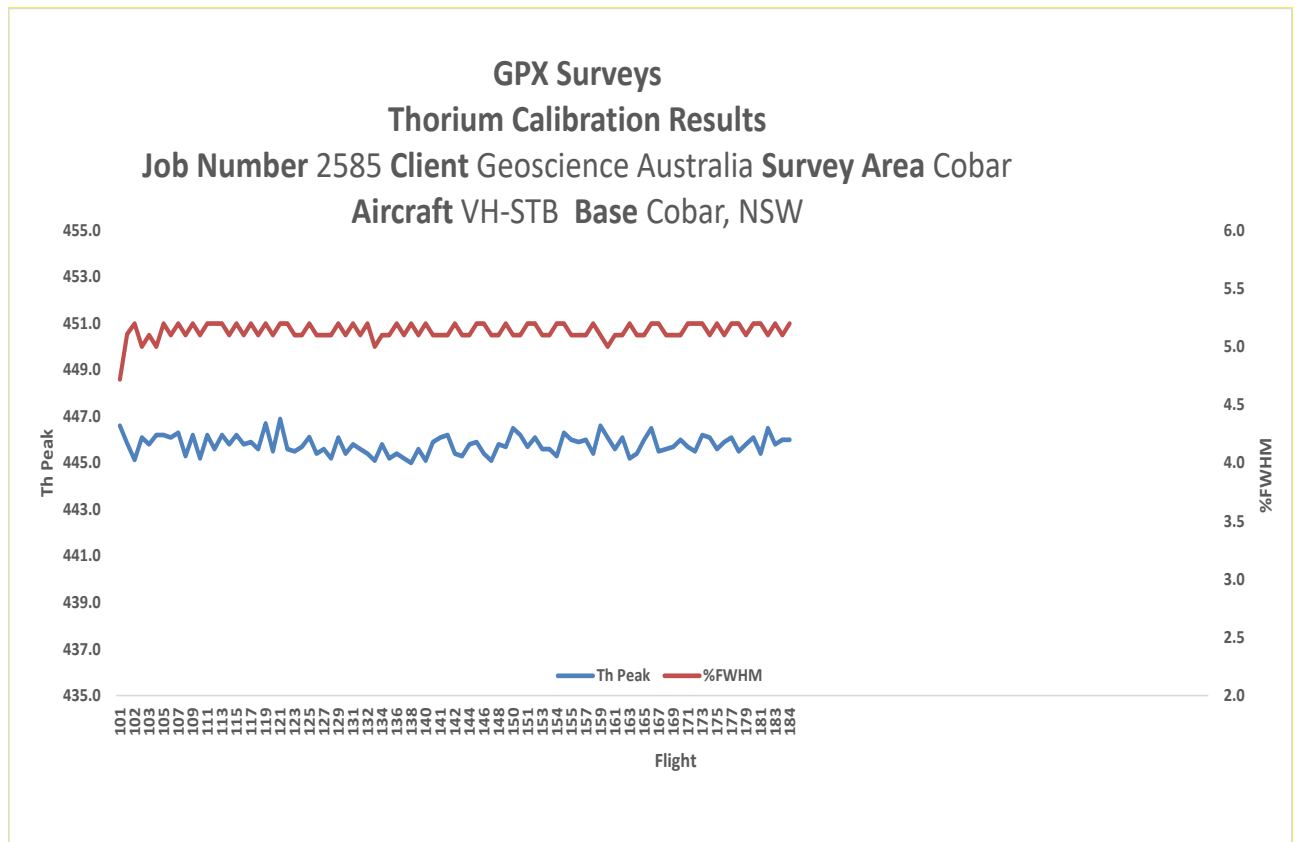


Figure 14 Chart of Thorium test - Thorium Peak / FWHM

Tabulated data for the Thorium test can be found in Appendix D.
The system stability test at the start and end of each day also records the stationary aircraft GPS position. The results are displayed in the chart below.

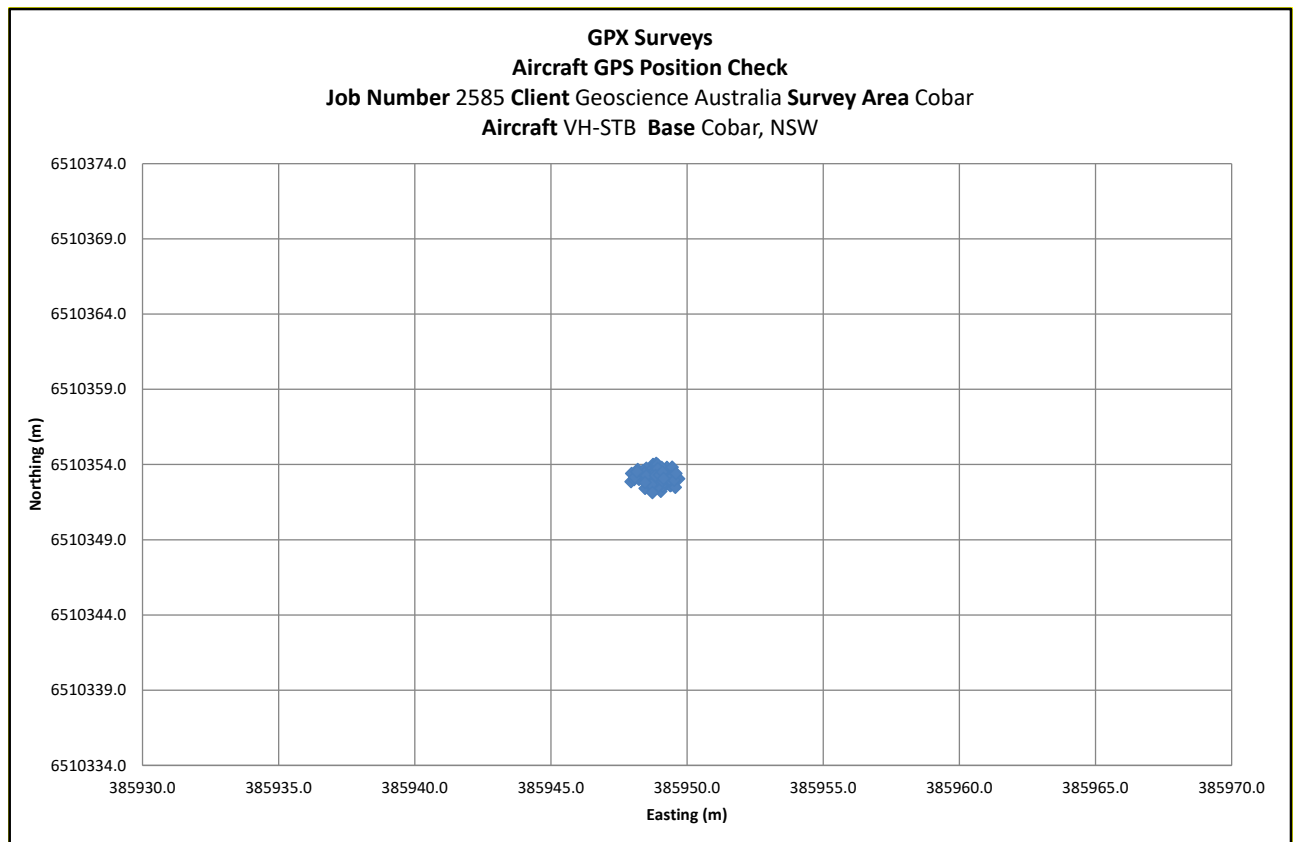


Figure 15 Chart of aircraft static position results VH-STB

Tabulated data for the aircraft static position check can be found in Appendix E.

Additionally, a low-level test line was flown of at least 100 seconds in duration. This was used to establish that the soil moisture had not changed significantly and that the spectrometer system was functioning correctly. All measurements were within 10 percent from the average of all other calculations

There was one low level test line used during the survey. Details of the test line is summarised in the table below.

Location	Test Line #	Start Easting	End Easting	Start Northing	End Northing	Length of Line (km)	Projection
Cobar	1111	414967	414967	6494300	6504300	10.0	GDA94 MGA55

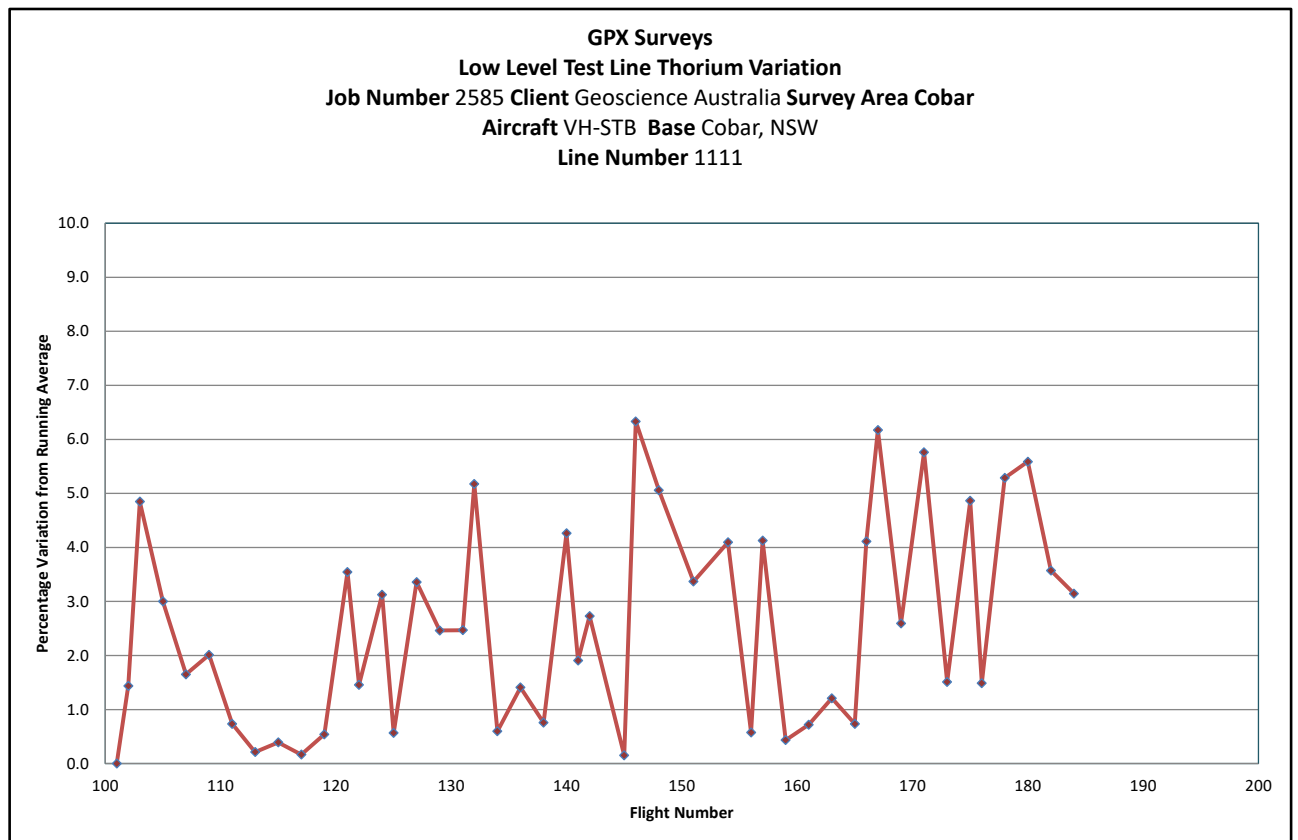


Figure 16 Chart of low level test line 1111 results VH-STB

Tabulated results for the low level test line can be found in Appendix F.

4.6 TIME SYNCHRONISATION

The aircraft data and ground magnetometer data are both recorded in GPS time to enable synchronisation.

5 DATA VERIFICATION AND PRELIMINARY PROCESSING

All data verification and preliminary processing and map production was conducted at the head office using a notebook computer. Geosoft Oasis Montaj was the primary quality control software.

At the conclusion of each survey flight all magnetic, altimeter, GPS, radiometric and diurnal data were transferred onto the field computer for preliminary data verification. The raw data was transferred from the field onto the GPX Surveys ftp site for further verification and processing.

5.1 DATA VERIFICATION AND CHECKS

General Checks and Verification

The magnetic data, diurnal data, radar altimeter, GPS data and flight path were checked for noise, spikes, inconsistencies and deviations.

Magnetic Data Checks

The raw un-edited magnetic data was checked to identify noise and spikes. Single reading spikes were manually edited and interpolated. During this survey there was no magnetic data that exceeded the noise specifications.

Diurnal Data Checks

At the completion of each day's flying the diurnal data was downloaded from the base magnetometer onto the field. The diurnal data was plotted and analysed for noise, spikes and erroneous activity. Multiple readings were flagged as invalid and if invalid diurnal data occurred during survey the affected section was analysed for the effect on the data.

Radar Altimeter Checks

The altimeter data was checked to ensure a reasonably constant height above the terrain was maintained. During this project the radar altimeter exceeded the specifications due to townships, livestock, towers, homesteads and airstrips.

GPS Height Data Checks

The aircraft's height above mean sea level was determined by data from the post-processed GPS data. The GPS height of the aircraft is checked for data masking and equipment reliability. The aircraft GPS height has had the hardware geoid model removed to give the GPS elevation relative to the WGS84 ellipsoid.

Flight Path Checks

The flight path was plotted against the flight plan and checked for deviations. Calculations of flight path deviations were performed to check for flight path deviations greater than the contract. The aircraft GPS recorded the data in the WGS84 datum.

Digital Terrain Data

After radar and GPS height data verification the radar altimeter height was subtracted from the GPS height to give the elevation of the terrain above mean sea level. The digital terrain data was gridded to check for inconsistencies and errors.

Radiometric Data

The 512-channel radiometric data was viewed to confirm that the spectra peaks are correctly calibrated. The following peak locations were checked daily:

- Potassium 1460 keV
- Uranium 1760 keV
- Thorium 2614 keV

Gridding and Inspection

The magnetic, digital terrain and radiometric data was gridded and displayed on screen. With the aid of sun-angles the gridded data was checked for inconsistencies and errors. Any inconsistencies were flagged and if necessary corrected.

5.2 DATA ARCHIVES

All raw and field processed aircraft data plus the raw diurnal base data were backed up onto an external hard drive at the end of each day's survey. A further copy of the raw and edited data remained on the field laptop for the duration of the project. The raw data was also uploaded onto the company ftp site and the data backed up at the offices of GPX.

6 FINAL PROCESSING

All final checks, verification and data processing were performed in the offices of GPX Surveys. The raw field data was transferred to the GPX Surveys ftp site at the end of each flight. The final processing of the data follows the same quality control checks that are made in the field however the final data has additional processes performed. No field-processed data was used in the making of the final data.

All data used in the final processing was within contract specifications.

The following software was used in the final verification and data processing:

- GPX proprietary software
- Geosoft Oasis Montaj

6.1 FINAL MAGNETIC DATA PROCESSING

Initial checks on the field data were performed as described in section 5.1.

The following processes were then performed on the magnetic data:

- Single reading spikes were manually edited.
- The magnetic data was diurnally corrected.
- System parallax was calculated and removed.
- System heading was removed.
- The magnetic data was IGRF corrected.
- The magnetic data was tie line levelled.
- The magnetic data was micro levelled.

Diurnal Correction to the Magnetic Data

The raw magnetic and diurnal data was checked for spikes and single reading spikes were manually edited. The synchronised digital diurnal data collected by the base station was then subtracted from the corresponding airborne magnetic readings.

Parallax Correction to the Magnetic Data

A system parallax as described in section 4.2 was applied to the magnetic data.

IGRF Correction to the Magnetic Data

The diurnally corrected magnetic data has been corrected for the regional gradient by subtracting the calculated IGRF (2015 model) computed continuously over the whole area. The calculation of these corrections used the GPS flying height.

Tie Line Levelling

A crossover program was used to compute the magnetic difference between each tie line and the traverse line intersection. These differences were then applied to level the traverse lines to the tie lines.

Micro Levelling

Finally, the data was micro-levelled using a proprietary program that more subtly levels the data. Micro levelling was used to remove residual differences with a long wavelength along line and short wavelength across line. Application of the micro-levelling process removed the streaks that were sometimes visible when using various grid enhancements.

Gridding and Inspection

The magnetic data was gridded and grid image enhancements were computed and displayed on screen. These were also viewed with the aid of crossline sun angles and inspected for inconsistencies and errors and appropriate corrections were made if required.

6.2 FINAL RADIOMETRIC DATA PROCESSING

The data is processed in accordance with the International Atomic Energy Agency Guidelines for radioelement mapping using gamma ray spectrometry data (July 2003).

Prior to final processing the data was validated using the methods described in Section 5.1. The following is a summary of processes that were performed on the radiometric data:

- Single reading spikes were edited.
- Noise removal from data using Noise Adjusted Singular Value Decomposition (NASVD).
- Apply the dead-time correction.
- The radiometric data was energy calibrated.
- Aircraft, cosmic and radon background radiation was removed.
- The stripping corrections were applied.
- System parallax was calculated and removed.
- The height data was corrected to standard temperature and pressure and then corrected to a nominal survey height using height attenuation coefficients.
- The data was tie line levelled.

- The data was micro levelled.
- The data was converted to elemental concentrations.

Noise Adjusted Singular Value Decomposition (NASVD)

'Noise Adjusted Singular Value Decomposition (NASVD) reconstruction as described by Hovgaard and Grasty, 1997 [1] has been applied to the radiometric data to reduce the random noise inherent to the gamma-ray spectrometric method. It should be noted that the results achieved using NASVD smoothing are dependent on the statistics of the population of gamma-ray spectra which will vary based on factors such as location, equipment used and time of flying. Performing NASVD with different parameters to that used in this processing may give different results. Care should be exercised when using the NASVD reconstructed radiometric products for further analysis as artefacts of various types may have been generated as a result of applying the technique.'

[1] Hovgaard, J. and Grasty, R.L., 1997, Reducing statistical noise in airborne gamma-ray data through spectral component analysis: In "Proceedings of Exploration 97: Fourth Decennial Conference on Mineral Exploration" edited by A.G. Gubins, 1997, 753-764.

Analysis of the eigenvalues and eigenvectors of the PCA are done then the 8 most significant principal components are used to reduce the data with the remainder considered to be noise. To verify this, residual line profiles and images of potassium, uranium and thorium are generated to confirm that no signal is present.

Deadtime correction

A deadtime correction was applied.

Energy Recalibration

Spectra analysis was performed on each line of data and the position of the thorium and potassium peak positions determined and compared to their theoretical positions. The original spectra data was then mapped to the correct peak positions and new windowed data created for each of the standard IAEA windows as follows.

Window	Peak Energy (KeV)	Energy Window (KeV)		
Total Count		410	-	2810
Potassium	1460	1370	-	1570
Uranium	1760	1660	-	1860
Thorium	2615	2410	-	2810
Cosmic		3000		

Aircraft Background Correction

The aircraft background radiation was removed by subtracting the aircraft background values from the Total Count, Potassium, Uranium and Thorium windows. The values that are used are in Appendix A.

Cosmic Correction

The effect of cosmic radiation was removed from each window by multiplying the cosmic channel by the cosmic stripping factor for each window and subtracting the result from the window data. The values that are used are in Appendix A.

Radon Background Correction

The spectral ratio method was used for radon removal. This method uses the 609 keV uranium peak as a substitute for upward crystals.

Stripping Corrections

The radiometric spectra of potassium (K), uranium (U) and thorium (Th) series overlap. To evaluate of any one spectral window, which is designed to detect one radioelement, requires removal of the spectral overlap. This process of removal of the spectral overlap is known as stripping. The stripping procedure uses spectral stripping ratios determined experimentally using concrete calibration pads of known K, U and Th concentration. The values that are used are in Appendix A.

Parallax Correction

A system parallax as described in section 4.2 was applied to the radiometric data.

Calculation of Effective Height

Spikes from the temperature and pressure data were removed. The radiometric data was converted to effective altitude at standard temperature and pressure (STP) using the expression:

$$Alt(STP) = BA \times \left(\frac{P}{1013} \right) \times \frac{273}{(T + 273)}$$

Alt(STP) = Effective altitude at STP in metres
BA = Barometric Altitude in metres
P = Pressure in millibars
T = Temperature in °C

Height Correction

The temperature and STP corrected data was converted to a nominal survey height using the height attenuation coefficients.

Tie Line Levelling

For the Uranium and Total Count windows, a crossover program was used to compute the radiometric difference between each tie line and the traverse line intersection. These differences were then applied to level the traverse lines to the tie lines.

Micro Levelling

Micro levelling was used to remove residual differences with a long wavelength along line and short wavelength across line. Application of the micro levelling process removed the streaks that were sometimes visible when using various grid enhancements.

Gridding and Inspection

The radiometric data was gridded and grid image enhancements were computed and displayed on screen. These were also viewed with the aid of crossline sun angles and inspected for inconsistencies and errors and appropriate corrections were made if required.

6.3 FINAL ELEVATION DATA PROCESSING

Initial checks on the field altimeter and GPS height data were performed as described in section 5.1.

The following processes were then applied to create the digital elevation model.

- Calculate DEM relative to WGS84 ellipsoid
- System parallax calculated and removed
- Tie line level the data
- Micro level the data
- Apply AHD(Geoid) model correction

Digital Terrain Calculation

After verification, the radar or laser altimeter height was subtracted from the WGS84 ellipsoid GPS height.

Parallax Correction

A parallax error correction as described in section 4.2 was applied to the coordinate data.

Tie Line Levelling

A crossover program was used to compute the height difference between each tie line and the traverse line intersection. These differences were then applied to level the traverse lines to the tie lines.

Micro Levelling

Micro levelling was used to remove residual differences with a long wavelength along line and short wavelength across line. Application of the micro levelling process removed the streaks that were sometimes visible when using various grid enhancements.

Geoid Model Correction

The interpolated Geoid model was subtracted from the WGS84 data to create a DEM that is in the Australian Height Datum (AHD).

DISCLAIMER

Every effort has been made to make this model a useful general reference. No guarantee can be made that this model is a true representation of height above sea level as it may include altimeter responses from buildings and vegetation. Users of the product should be aware of the topographic limitations mapped herewithin. Do not use this DTM for navigation purposes.

7 FINAL DELIVERABLES

7.1 FINAL GRIDS AND DATA PRODUCTS

Grids

All grids are in ERMapper format (*.ERS). The first set of grids are based on the GDA94 datum and are projected in MGA Zone 55. A second set of grids was supplied in a Geodetic coordinate system based on the GDA94 datum.

The following grids were delivered:

Data Type	Units
Total Magnetic Intensity	nT
Magnetics Reduced to Pole	nT
Magnetic Reduced to Pole First Vertical Derivative	nT/m
Digital Elevation Model (Using Radar Altimeter)	m
Dose Rate (NASVD)	nGy/h
Potassium Concentration (NASVD)	%
Uranium Concentration (NASVD)	ppm
Thorium Concentration (NASVD)	ppm
Dose Rate (NO NASVD)	nGy/h
Potassium Concentration (NO NASVD)	%
Uranium Concentration (NO NASVD)	ppm
Thorium Concentration (NO NASVD)	ppm

Located Data (ASCII format)

The located data is based on GDA94 datum and is projected in MGA Zone 55. The final located data is in a format as described in Appendix A.

A copy of the raw located data was also delivered and the data delivery and approval schedule is tabulated below.

Cobar Survey Areas	Flying Completed	Raw Data Delivered	Final Grid Approved	Final Data Delivery	Final data Approved
Main	7/08/2021	13/08/2021	16/09/2021	20/09/2021	21/09/2021
Ext 1 Canbelego	13/06/2021	2/07/2021	17/08/2021	2/09/2021	3/09/2021
Ext 2 Coolabah	3/08/2021	6/08/2021	24/08/2021	2/09/2021	3/09/2021
Ext 3 Mindetta	26/07/2021	28/08/2021	17/08/2021	7/09/2021	8/09/2021
Ext 4 Bobinda	1/08/2021	4/04/2021	24/08/2021	7/09/2021	8/09/2021
Ext 5 Gulgunnia Sth	10/08/2021	11/08/2021	26/08/2021	7/09/2021	8/09/2021
Ext 6 Bobadah	7/08/2021	9/08/2021	27/08/2021	9/09/2021	10/09/2021

8 MAP IMAGES

Flight Path Image

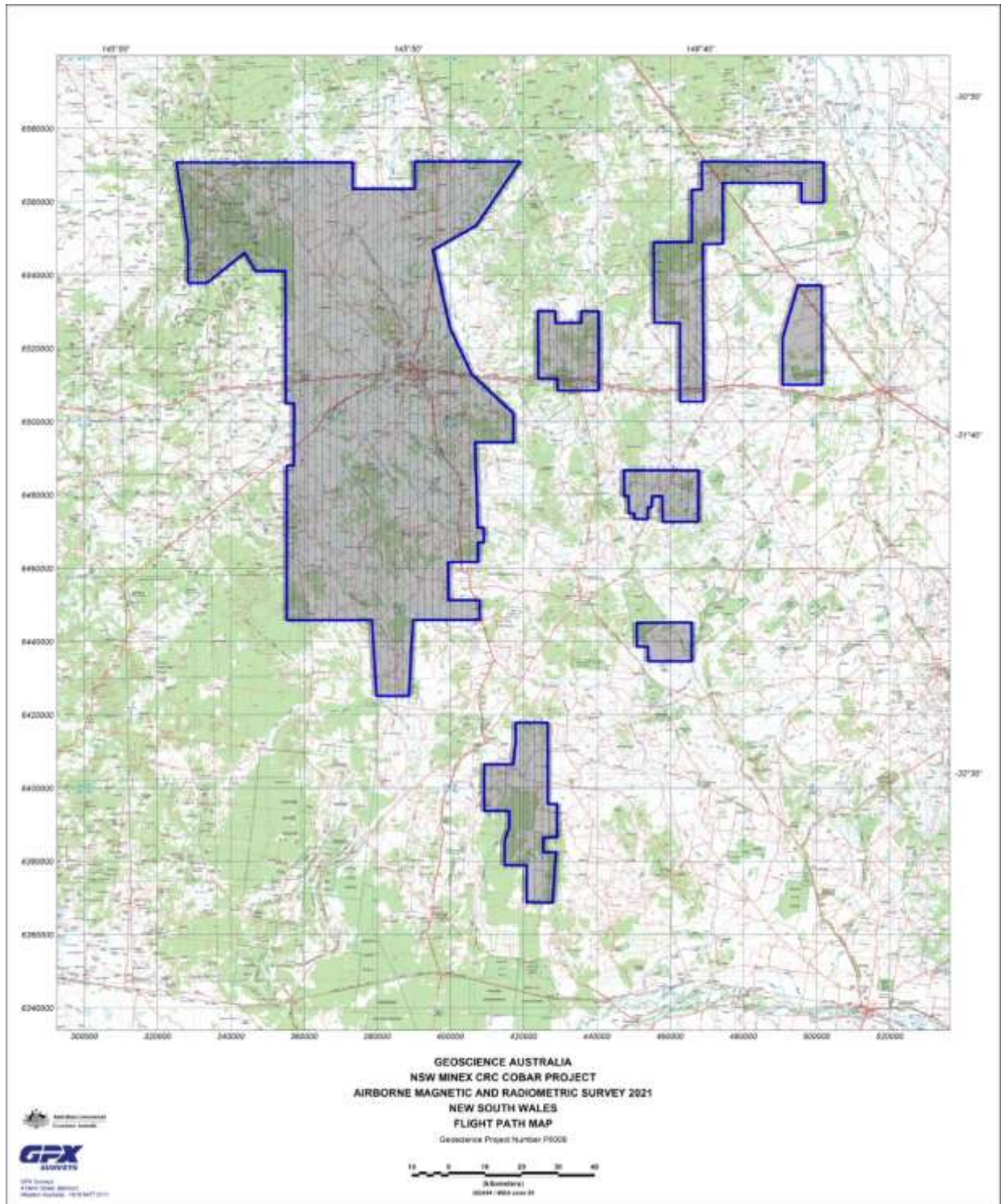


Figure 17 Flight path image.

Digital Terrain Model Image

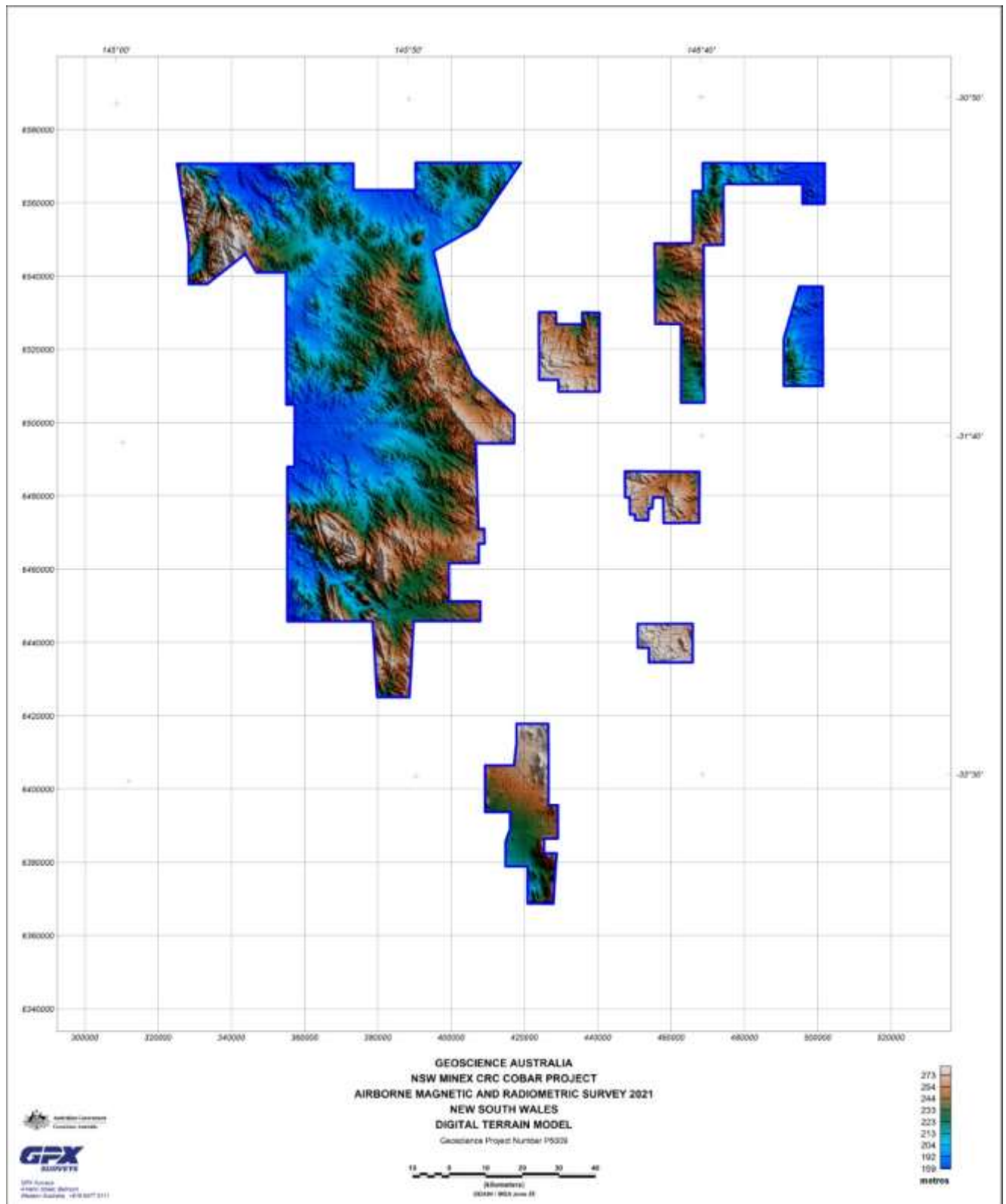


Figure 18 Digital terrain model image.

Magnetic Images

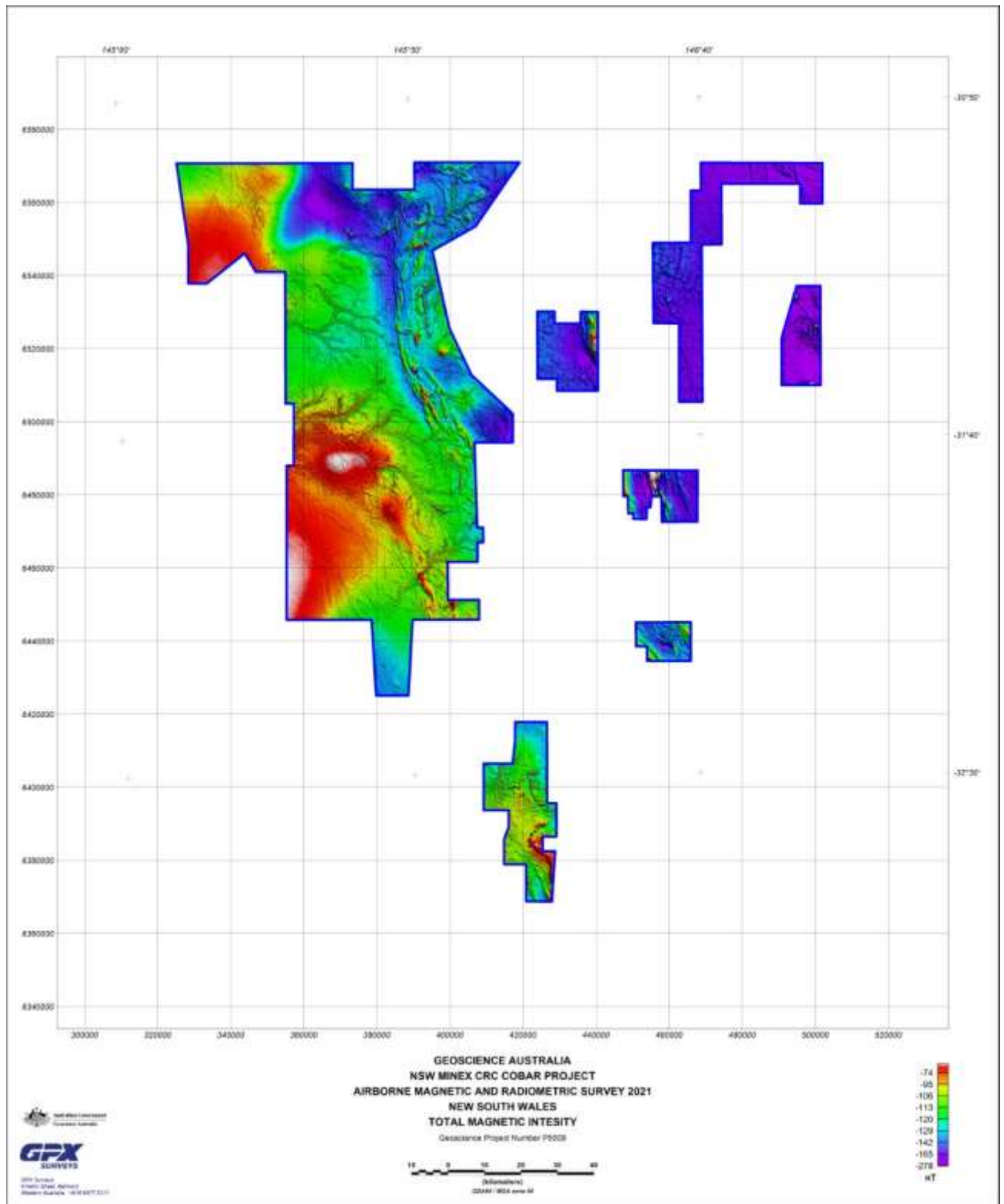


Figure 19 Total magnetic intensity image.

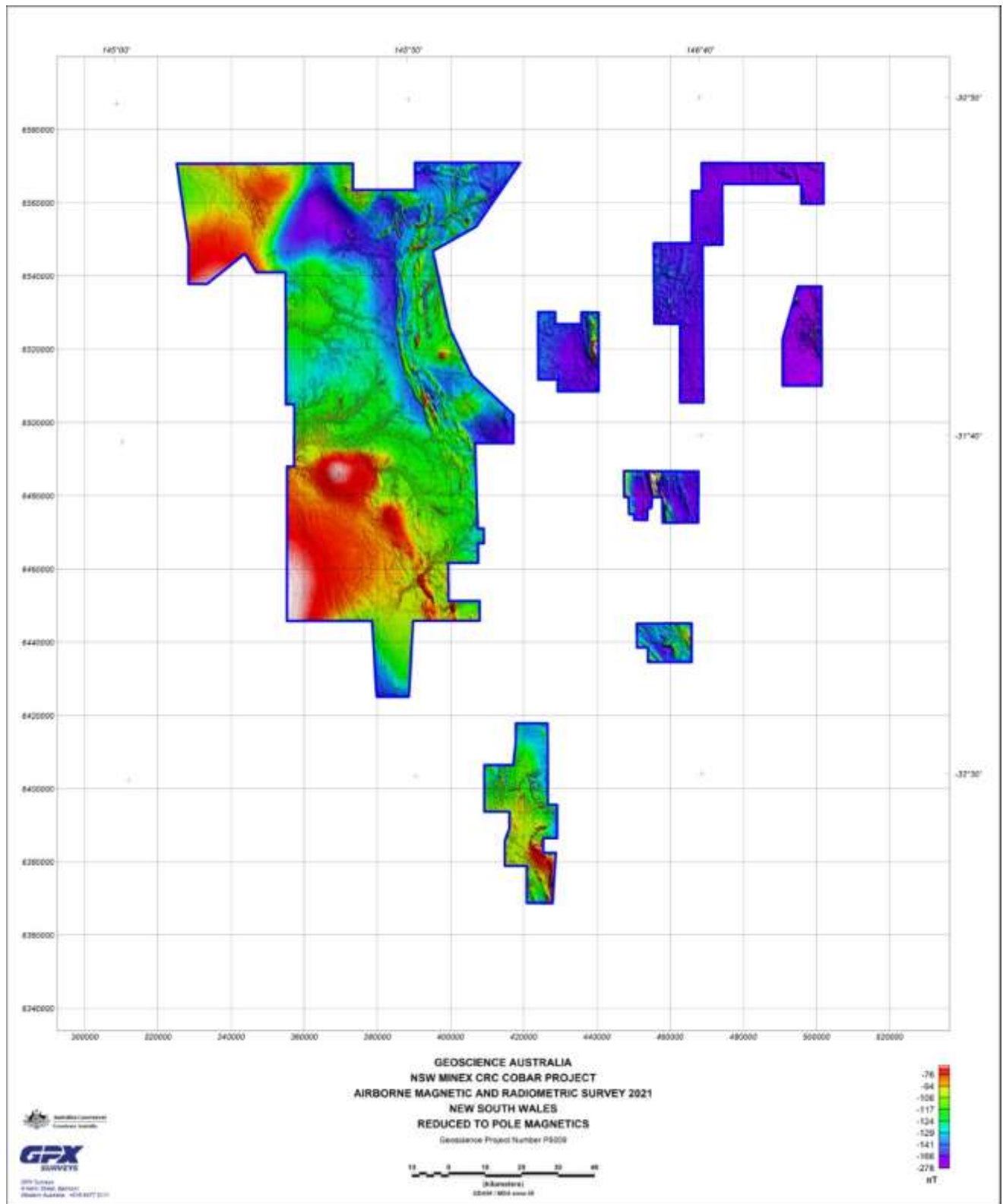


Figure 20 Reduced to pole Magnetics image.

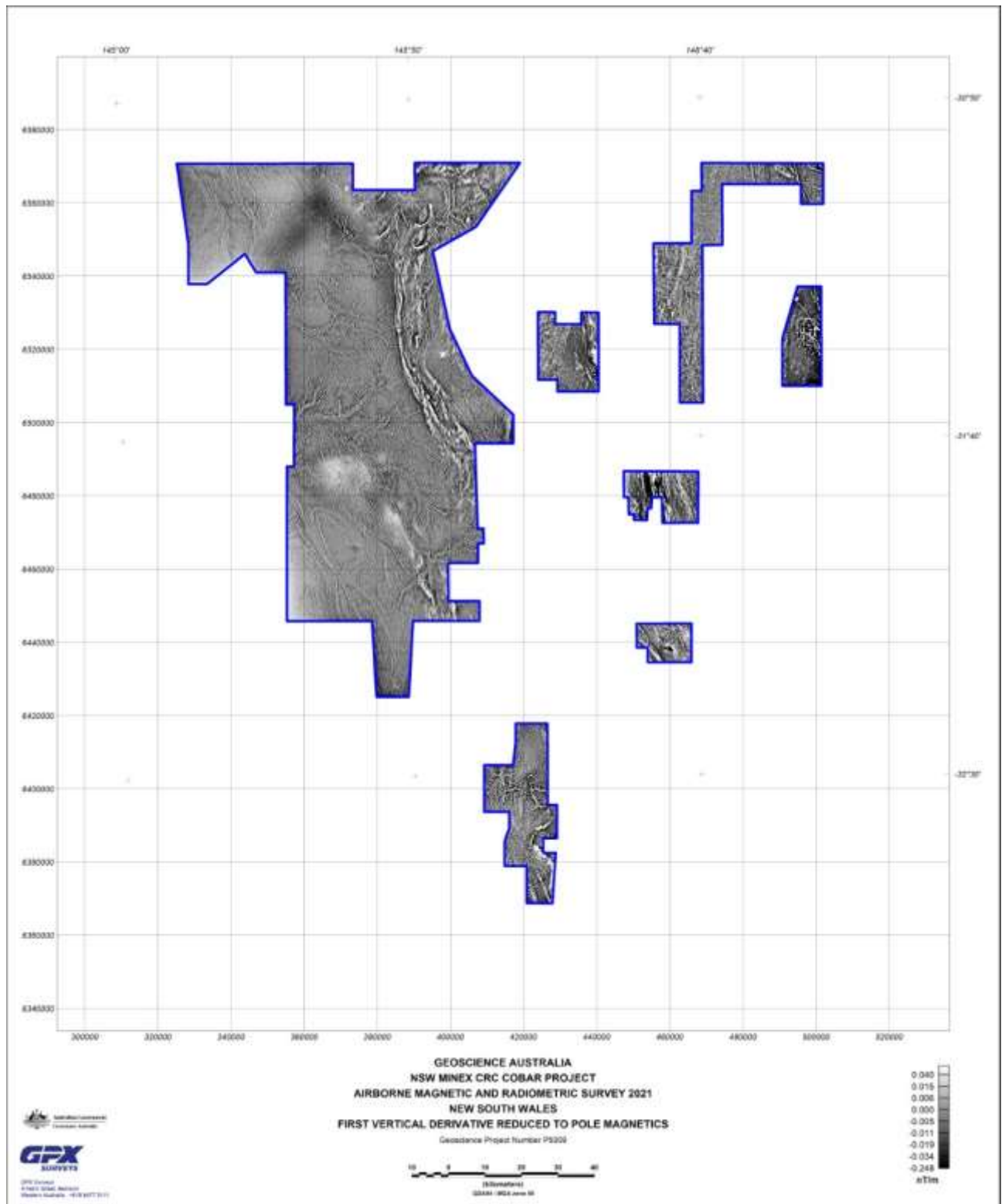


Figure 21 First Vertical Derivative Reduced to pole Magnetics image.

Radiometric Images

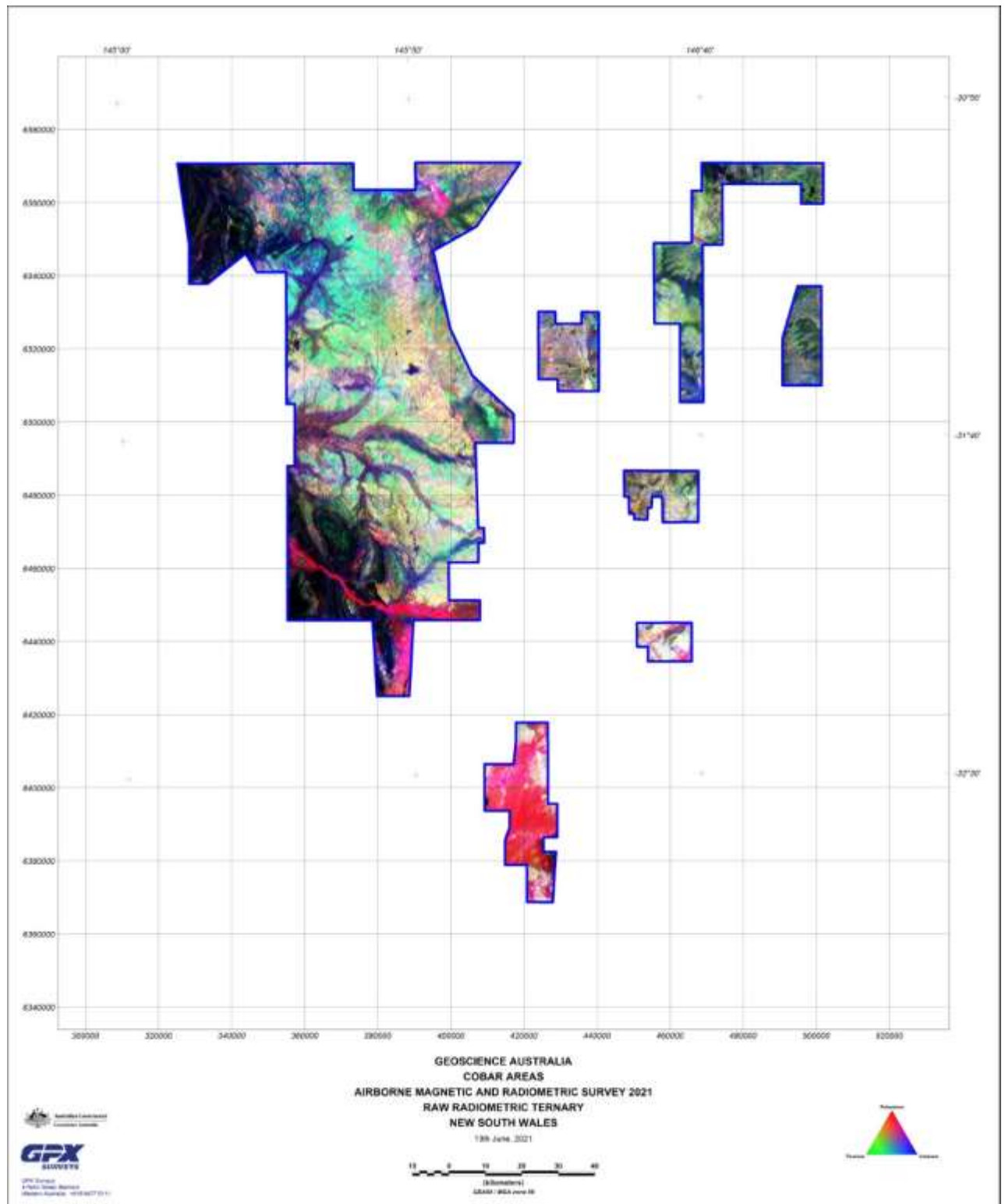


Figure 22 Radiometric Ternary RGB colours image.

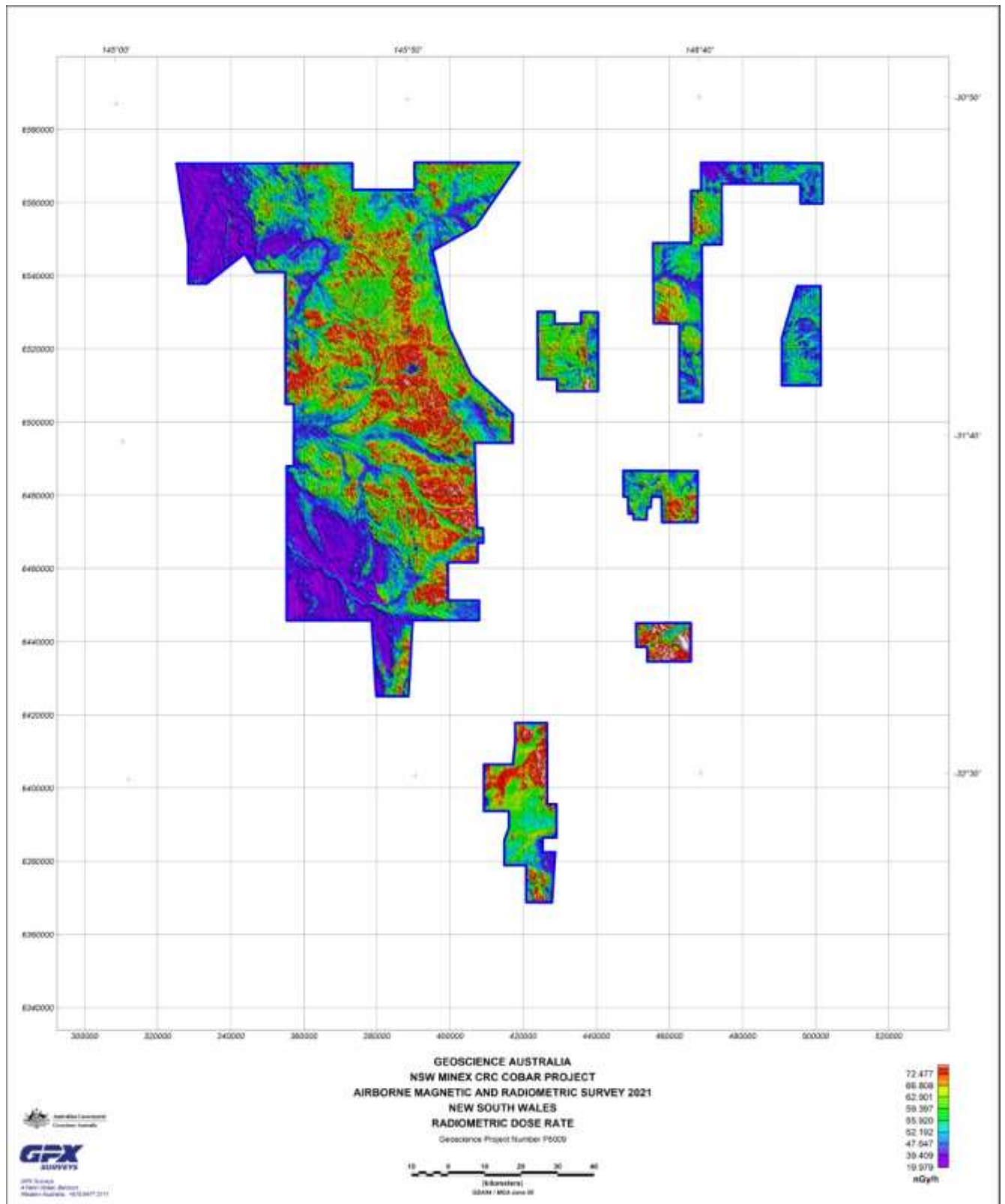


Figure 23 Dose Rate Image.

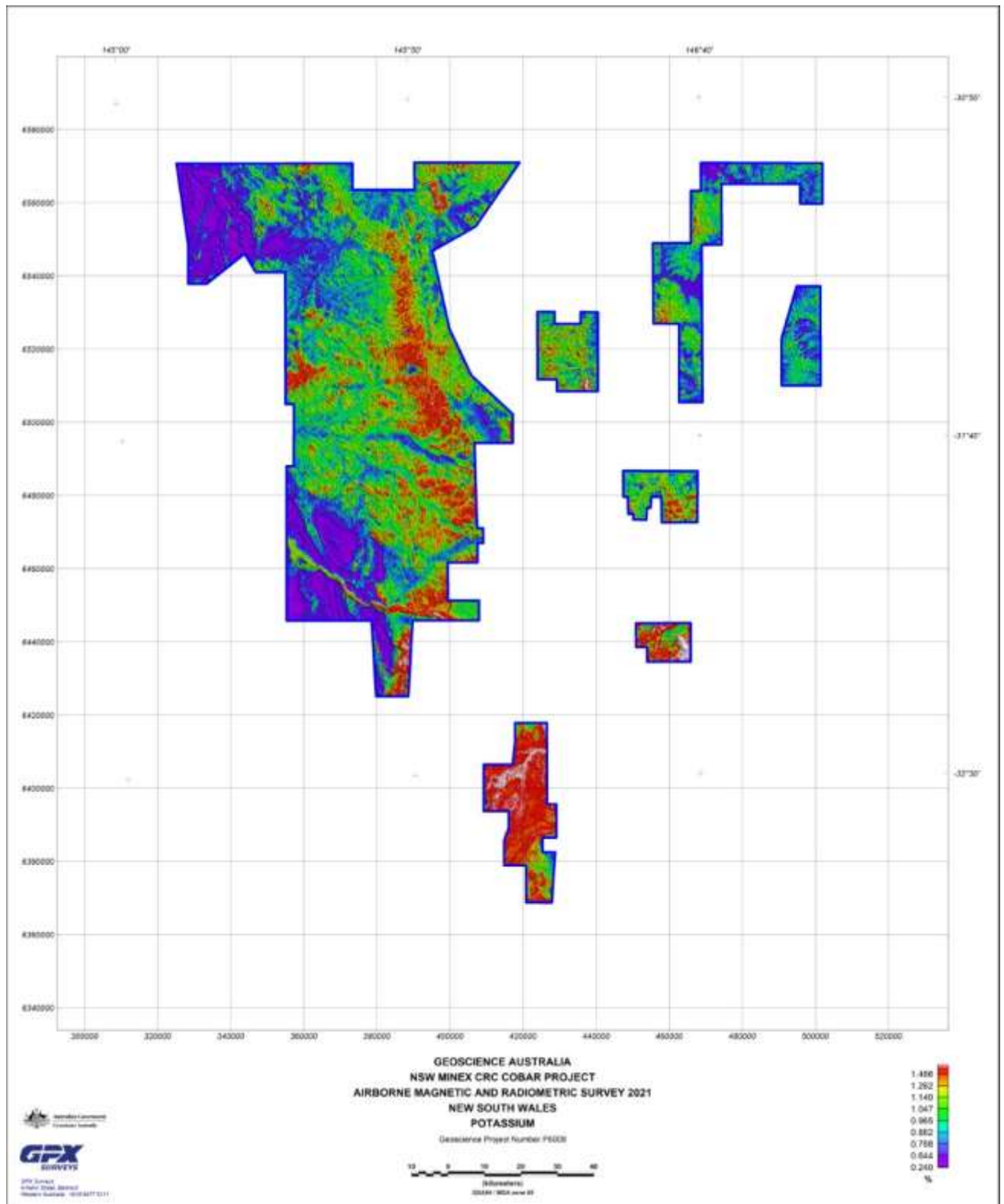


Figure 24 Potassium Image.

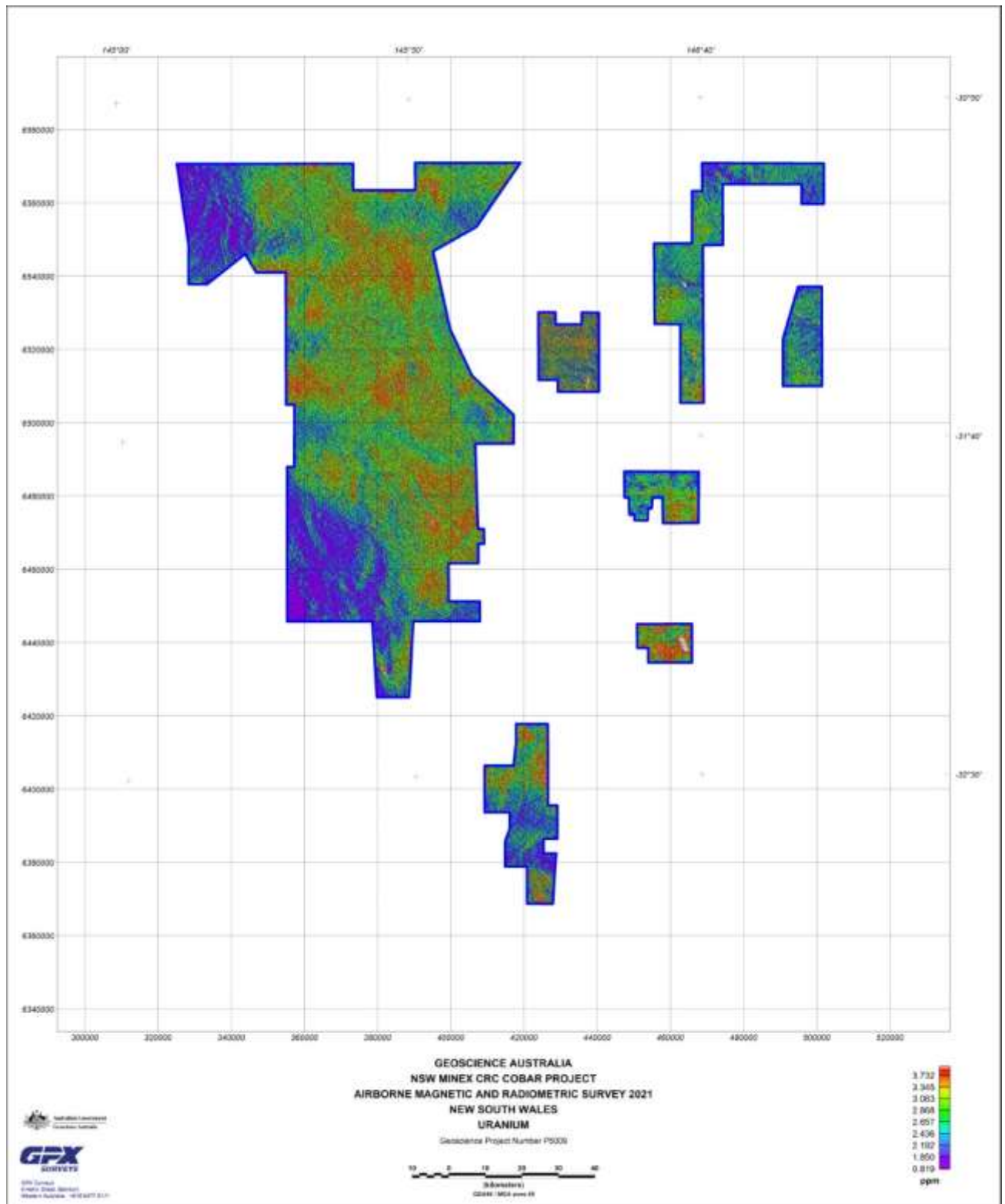


Figure 25 Uranium Image.

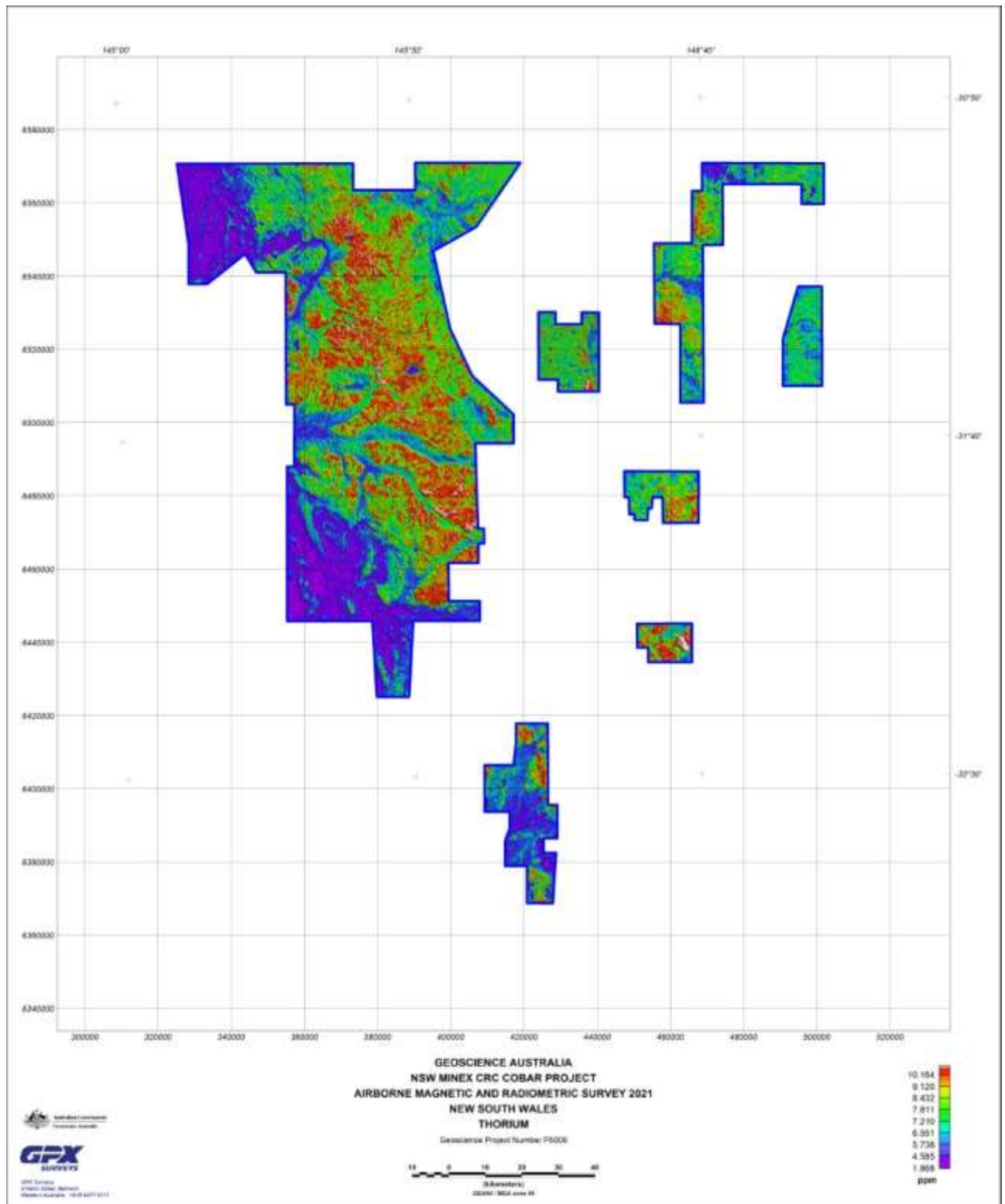


Figure 26 Thorium Image.

9 CONTRACTOR INFORMATION



GPX Surveys Pty Ltd ABN 48 110 619 602

Address: 4 Hehir Street,
Belmont WA 6104 Australia
Postal: PO Box 808,
Cloverdale WA 6985

T +61 8 9477 5111
F +61 8 9477 5211
info@gpxsurveys.com.au
www.gpxsurveys.com.au

APPENDIX A: LOCATED DATA FORMAT AND PROCESSING SPECIFICATIONS

Magnetic Data Description File

CLIENT DETAILS

```
-----
Company flown by      : GPX Surveys Pty Ltd
Company Processed     : GPX Surveys Pty Ltd
Client                : GEOSCIENCE AUSTRALIA
Client Project Number : P5009
Company Project Number: 2585
```

AIRBORNE SURVEY EQUIPMENT

```
-----
Aircraft              : Cessna 210 VH-STB
Magnetometer          : Geometrics G-822A
Magnetometer Resolution : 0.0002 nT
Magnetometer Sample Interval : 10Hz
Data Acquisition       : Pico Envirotec AGIS
Spectrometer          : Pico Envirotec GRS-10+
Crystal Size          : 33.6 litres : 8 individual crystals, 4 per pack in downward configuration
Spectrometer Sample Interval : 1Hz
GPS Navigation System  : GPX MNav using Hemisphere GPS-R330 DGPS Receiver
GPS Sample Interval   : 5Hz
```

SURVEY DESIGN

```
-----
Flight Line Direction : 090-270 degrees
Flight Line Separation : 200 metres
Tie Line Direction    : 180-360 degrees
Tie Line Separation    : 2000 metres
Terrain Clearance      : 60 metres
```

DATUM and PROJECTION

```
-----
Datum      : Geodetic Datum of Australia 94 GDA94
Projection : Mag Grid of Australia MGA
```

Zone : Zone 55

LOCAL TIME ZONE

Time Zone (LOCAL_TIME) : Australian Eastern Standard Time (UTC + 10.0)

DATA FORMAT

NAME	FORMAT	UNIT	DESCRIPTION
SURVEY	I5		Project Number
FLIGHT	I4		Flight Number
LINE	I9		Line Number
FID	F10.1		Fiducial
DATA CODE	I9	yyyy/mm/dd	date
GPS_TIME	F10.2	seconds	Seconds after midnight (UTC)
LOCAL_TIME	F10.2	seconds	Seconds after midnight (UTC + 10)
BEARING	I4	Degrees	Bearing
LONGITUDE_GDA94	F13.7	Degrees	GDA94 Final Longitude (parallax corrected)
LATITUDE_GDA94	F13.7	Degrees	GDA94 Final Latitude (parallax corrected)
EASTING_GDA94	F11.2	metres	GDA94 MGA55 Final Easting (parallax corrected)
NORTHING_GDA94	F12.2	metres	GDA94 MGA55 Final Northing (parallax corrected)
GPS_HEIGHT	F8.2	metres	GPS Height (Parallax Corrected)
ZONE	I3		Zone
RADAR_ALT	F8.2	metres	Raw Radar Altimeter (parallax corrected) no spike removal nor
interpolation			
DEM_RADAR	F8.2	metres	Final Ground Elevation (radar)
MAGNETIC_FINAL_TIELEVELLED	F10.3	nT	Final Mag is compensated and diurnally corrected. IGRF is removed with no base value added
MAGNETIC_FINAL_MICROLEVELLED	F10.3	nT	final Mag is compensated and diurnally corrected. IGRF is removed with no base value added
FINAL_MICROLEVELLED_1VD	F9.3	nT/m	
MAGNETIC_DIURNAL	F11.3	nT	
MAGNETIC_IGRF	F10.3	nT	Calculated IGRF 2020 model

Radiometric Channel Data Description File

CLIENT DETAILS

```
-----
Company flown by      : GPX Surveys Pty Ltd
Company Processed     : GPX Surveys Pty Ltd
Client                : GEOSCIENCE AUSTRALIA
Client Project Number : P5009
Company Project Number: 2585
```

AIRBORNE SURVEY EQUIPMENT

```
-----
Aircraft              : Cessna 210 VH-STB
Magnetometer          : Geometrics G-822A
Magnetometer Resolution : 0.0002 nT
Magnetometer Sample Interval : 10Hz
Data Acquisition      : Pico Envirotec AGIS
Spectrometer          : Pico Envirotec GRS-10+
Crystal Size          : 33.6 litres : 8 individual crystals, 4 per pack in downward configuration
Spectrometer Sample Interval : 1Hz
GPS Navigation System  : GPX MNav using Hemisphere GPS-R330 DGPS Receiver
GPS Sample Interval   : 5Hz
```

SURVEY DESIGN

```
-----
Flight Line Direction : 090-270 degrees
Flight Line Separation : 200 metres
Tie Line Direction    : 180-360 degrees
Tie Line Separation    : 2000 metres
Terrain Clearance     : 60 metres
```

DATUM and PROJECTION

```
-----
Datum                : Geodetic Datum of Australia 94 GDA94
Projection           : Mag Grid of Australia MGA
Zone                 : Zone 55
```

LOCAL TIME ZONE

 Time Zone (LOCAL_TIME) : Australian Eastern Standard Time (UTC + 10.0)

DATA FORMAT

NAME	FORMAT	UNIT	DESCRIPTION
SURVEY	I5		Project Number
FLIGHT	I4		Flight Number
LINE	I9		Line Number
FID	F10.1		Fiducial
DATA CODE	I9	yyyy/mm/dd	date
BEARING	I4	Degrees	Bearing
LONGITUDE_GDA94	F13.7	Degrees	GDA94 Final Longitude (parallax corrected)
LATITUDE_GDA94	F13.7	Degrees	GDA94 Final Latitude (parallax corrected)
EASTING_GDA94	F11.2	metres	GDA94 MGA55 Final Easting (parallax corrected)
NORTHING_GDA94	F12.2	metres	GDA94 MGA55 Final Northing (parallax corrected)
GPS_HEIGHT	F8.2	metres	GPS Height (Parallax Corrected)
ZONE	I3		Zone
RADAR_ALT	F8.2	metres	Raw Radar Altimeter (parallax corrected) no spike removal nor
interpolation			
DEM_RADAR	F8.2	metres	Final Ground Elevation (radar)
PRESSURE	F6.2	mbar	
TEMPERATURE	F6.2	DegC	
Doserate_no_nasvd	F10.3	nGy/h	Final Dose Rate (no spectral smoothing)
k_percent_no_nasvd	F9 .3	%	Final Potassium Concentration (no spectral smoothing)
u_ppm_no_nasvd	F9.3	ppm	Final Uranium Concentration (no spectral smoothing)
th_ppm_no_nasvd	F9.3	ppm	Final Thorium Concentration (no spectral smoothing)
Dose_nasvd	F10.3	nGy/h	Final Dose Rate (spectral smoothing)
k_percent_nasvd	F9.3	%	Final Potassium Concentration (spectral smoothing)
u_ppm_nasvd	F9.3	ppm	Final Uranium Concentration (spectral smoothing)
th_ppm_nasvd	F9.3	ppm	Final Thorium Concentration (spectral smoothing)

Digital Terrain Model Channel Data Description File

CLIENT DETAILS

Company flown by : GPX Surveys Pty Ltd
Company Processed : GPX Surveys Pty Ltd
Client : GEOSCIENCE AUSTRALIA
Client Project Number : P5009
Company Project Number : 2585

AIRBORNE SURVEY EQUIPMENT

Aircraft : Cessna 210 VH-STB
Magnetometer : Geometrics G-822A
Magnetometer Resolution : 0.0002 nT
Magnetometer Sample Interval : 10Hz
Data Acquisition : Pico Envirotec AGIS
Spectrometer : Pico Envirotec GRS-10+
Crystal Size : 33.6 litres : 8 individual crystals, 4 per pack in downward configuration
Spectrometer Sample Interval : 1Hz
GPS Navigation System : GPX MNav using Hemisphere GPS-R330 DGPS Receiver
GPS Sample Interval : 5Hz

SURVEY DESIGN

Flight Line Direction : 090-270 degrees
Flight Line Separation : 200 metres
Tie Line Direction : 180-360 degrees
Tie Line Separation : 2000 metres
Terrain Clearance : 60 metres

DATUM and PROJECTION

Datum : Geodetic Datum of Australia 94 GDA94
Projection : Mag Grid of Australia MGA
Zone : Zone 55

LOCAL TIME ZONE

Time Zone (LOCAL_TIME)

: Australian Eastern Standard Time (UTC + 10.0)

DATA FORMAT

NAME	FORMAT	UNIT	DESCRIPTION
SURVEY	I5		Project Number
FLIGHT	I4		Flight Number
LINE	I9		Line Number
FID	F10.1		Fiducial
DATA CODE	I9	yyyy/mm/dd	date
BEARING	I4	Degrees	Bearing
LONGITUDE_GDA94	F13.7	Degrees	GDA94 Final Longitude (parallax corrected)
LATITUDE_GDA94	F13.7	Degrees	GDA94 Final Latitude (parallax corrected)
EASTING_GDA94	F11.2	metres	GDA94 MGA55 Final Easting (parallax corrected)
NORTHING_GDA94	F12.2	metres	GDA94 MGA55 Final Northing (parallax corrected)
GPS_HEIGHT	F8.2	metres	GPS Height (Parallax Corrected)
ZONE	I3		Zone
RADAR_ALT	F8.2	metres	Raw Radar Altimeter (parallax corrected) no spike removal nor interpolation
DEM_RADAR	F8.2	metres	Final Ground Elevation (radar)

APPENDIX B: WEEKLY PRODUCTION SUMMARY – VH-STB



WEEKLY SUMMARY REPORT

OPA-F04 Field Weekly Report

Client:	GPX Job No.	Area(s)	Job Name:	Flying Base:	Aircraft Type(s):	Crew Contact Phone No.	Crew Contact Fax No.
GA GS NSW	2585	7	Cobar Areas	Cobar Airport	Cessna 210	+61 447 769 333	N/A
Aircraft: VH-STB FPM - Andy Angelo (AA) ; Processor/s - Ron Creagh (RC) ; Technical Supervisor - Mikey Barrett (MB) NOS ; Pilot/s - Graham Simpson (GS) Des McAtamney (DMc)							

Kilometres									Aircraft Time									
Date	Fit	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Ferry	Cals Daily	Cals Setup	Mob	Invoice Hours	MR Hours	Hrs to 100 Hrly	Hrs	Standby Reason
Mon 07/06/21	902	0.0	0.0	0.0	53,512.9	0.0	53,512.9	2.40	0.00	0.00			0.00	2.40	2.7	91.6	5.6	
Tue 08/06/21	101	338.0	0.0	0.0	53,512.9	338.0	53,174.9	3.00	0.00	0.00			0.00	3.00	3.1	88.5	5.0	
Wed 09/06/21		0.0	0.0	0.0	53,512.9	338.0	53,174.9	0.00	0.00	0.00			0.00	0.00	0.0	88.5	8.0	Weather
Thu 10/06/21		0.0	0.0	0.0	53,512.9	338.0	53,174.9	0.00	0.00	0.00			0.00	0.00	0.0	88.5	8.0	Weather
Fri 11/06/21		0.0	0.0	0.0	53,512.9	338.0	53,174.9	0.00	0.00	0.00			0.00	0.00	0.0	88.5	8.0	
Sat 12/06/21	102	777.4	0.0	0.0	53,512.9	1,115.4	52,397.5	4.55	0.00	0.00			0.00	4.55	4.6	83.9	3.5	
Sun 13/06/21	103, 104	705.7	0.0	0.0	53,512.9	1,821.1	51,691.8	5.65	0.00	0.00			0.00	5.65	5.8	78.1	2.4	
Totals:	5	1,821.1	0.0	0.0	53,512.9	1,821.1	51,691.8	15.60	0.00	0.00	0.00	0.00	0.00	15.60	16.2		40.4	

Chargeable Lost Time (Hrs):	0.0	Non-Chargeable Lost Time (Hrs)	0.0	Previous Week Flown Kilometres:	0.0	Previous Week Hrs to 100 hrly:	94.3
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Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments	
Mon 07/06/21	158	1	1	2	1					Calibration flights (comp box) performed all ok in area, including heading check.	153.1
Tue 8/06/2021	159	1	1	2	1					One production flight completed. Mnav all ok. Very windy and turbulent conditions. One fill at EOD. 193Litres added. 2hrs & 59 mins duration.	193.2
Wed 9/06/2021	160	1	1	2	1					Low cloud, fog and showers. Very windy condition ranging from 15-30 knts gusting. After noon rain - no production attempted or achieved.	0.0
Thu 10/06/2021	161	1	1	2	1					No production due to rain and low cloud. Weather day.	0.0
Fri 11/06/2021	162	1	2	3	1					Tried for Calibration, as early morning fog. D Mc arrives all ok - except for luggage.	0.0
Sat 12/06/2021	163	1	2	3	1					Due to fog - delayed take off - agrs all ok. One production flight completed. FOG till 11am. DMc luggage arrives from Dubbo. 4 hrs & 33 mins duration.	262.3
Sun 13/06/2021	164	1	2	3	1					Two production flights completed - now completed 1st area Ext - 1, 2 uploads of Avgas (148.5 & 199.4 Litres) 5 hrs & 38 mins duration.	348.0
Totals:		7	10	17	7	0.0		0.0			956.6

KEY:

Enter numbers/data into blue marked sections only.

All areas marked in black are self calculating & should not be changed.

Ferry = operations base to survey area & return times.

Mob = (Mob/Demob) initial flying time to project & from project.

MR = Maintenance Release Hours from pilot (which are the chargeable hours).

- = Safety Meeting (SM) / Toolbox Meeting (TBM) check box.
 - = Enter total kilometres & hours flown from previous/preceding Weekly Report.
 - = Information to be entered by GPX Airborne Management.
 - = Daily fuel upload in litres or drums (per aircraft).
- Aircraft/Equipment Maint': **S** = scheduled / **U** = unscheduled.
General/Processing/QC Comments should include basic weather description.



WEEKLY SUMMARY REPORT

OPA-F04 Field Weekly Report

Client:	GPX Job No.	Area(s)	Job Name:	Flying Base:	Aircraft Type(s):	Crew Contact Phone No.	Crew Contact Fax No.
GA GS NSW	2585	7	Cobar Areas	Cobar Airport	Cessna 210	+61 447 769 333	N/A
Aircraft: VH-STB FPM - Andy Angelo (AA) ; Processor/s - Ron Creagh (RC) ; Technical Supervisor - Mikey Barrett (MB) NOS ; Pilot/s - Graham Simpson (GS) Des McAtamney (DMc)							

	Date	Flt	Kilometres					Aircraft Time										Standby	
			Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Ferry	Cals Daily	Cals Setup	Mob	Invoice Hours	MR Hours	Hrs to 100 Hrlly	Hrs	Reason
Mon	14/06/21	105,106	1,129.7	0.0	0.0	53,512.9	2,950.8	50,562.1	6.40	0.00	0.00			0.00	6.40	6.4	71.7	1.6	System
Tue	15/06/21	107,108	1,709.5	0.0	0.0	53,512.9	4,660.3	48,852.6	8.60	0.00	0.00			0.00	8.60	8.6	63.1	-0.6	
Wed	16/06/21	109,110	897.8	0.0	0.0	53,512.9	5,558.1	47,954.8	6.35	0.00	0.00			0.00	6.35	6.5	56.6	1.7	Govt officials
Thu	17/06/21	111,112	1,604.5	0.0	0.0	53,512.9	7,162.6	46,350.3	8.20	0.00	0.00			0.00	8.20	8.2	48.4	-0.2	Govt officials
Fri	18/06/21		0.0	0.0	0.0	53,512.9	7,162.6	46,350.3	0.00	0.00	0.00			0.00	0.00	0.0	48.4	8.0	Weather
Sat	19/06/21	113, 114	1,209.6	0.0	0.0	53,512.9	8,372.2	45,140.7	6.30	0.00	0.00			0.00	6.30	6.5	41.9	1.7	Weather
Sun	20/06/21	115, 116	1,720.0	0.0	0.0	53,512.9	10,092.2	43,420.7	8.50	0.00	0.00			0.00	8.50	8.6	33.3	-0.5	
Totals:		12	8,271.1	0.0	0.0	53,512.9	10,092.2	43,420.7	44.35	0.00	0.00	0.00	0.00	0.00	44.35	44.8		11.7	

Chargeable Lost Time (Hrs):	0.0	Non-Chargeable Lost Time (Hrs)	0.0	Previous Week Flown Kilometres:	1821.1	Previous Week Hrs to 100 hrlly:	78.1
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	Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments	
Mon	14/06/21	165	1	2	3	1					2 production flights completed in Cobar main area. 2 Avgas fills - 262.2 & 124.9 Litres uploaded.	387.1
Tue	15/06/2021	166	1	2	3	1					2 production flights completed in Cobar main area. 2 Avgas fills - 268.5 & 260.0 Litres uploaded.	528.4
Wed	16/06/2021	167	1	2	3	1					2 production flights completed in Cobar main area. 2 Avgas fills - 239 & 150.7 Litres uploaded. Delayed 2nd take off Photos taken by Govt contractor.	389.6
Thu	17/06/2021	168	1	2	3	1					2 production flights completed in Cobar main area. 2 Avgas fills - 256 & 150 Litres uploaded. Delay 2nd take off Govt officials at airport.	499.9
Fri	18/06/2021	169	1	2	3	1					Early morning rainfall 0.4mm at airport, isolated showers and low cloud - No production attempted or achieved.	0.0
Sat	19/06/2021	170	1	2	3	1					2 production flights completed in Cobar main area. 1st sortie took off and returned due to fog, then delayed due to low cloud, fog - lost 3.0hrs.	393.2
Sun	20/06/2021	171	1	2	3	1					2 production flights completed in Cobar main area. 2 uploads 255.9 & 261.6 Litres. 8.6 on the M/R. Weather conditions good for survey.	517.5
Totals:			7	14	21	7	0.0		0.0			Total Fuel: 2715.7

KEY:

Enter numbers/data into blue marked sections only.

All areas marked in black are self calculating & should not be changed.

Ferry = operations base to survey area & return times.

Mob = (Mob/Demob) initial flying time to project & from project.

MR = Maintenance Release Hours from pilot (which are the chargeable hours).

- = Safety Meeting (SM) / Toolbox Meeting (TBM) check box.
 - = Enter total kilometres & hours flown from previous/preceding Weekly Report.
 - = Information to be entered by GPX Airborne Management.
 - = Daily fuel upload in litres or drums (per aircraft).
- Aircraft/Equipment Maint': **S** = scheduled / **U** = unscheduled.
General/Processing/QC Comments should include basic weather description.



WEEKLY SUMMARY REPORT

OPA-F04 Field Weekly Report

Client:	GPX Job No.	Area(s)	Job Name:	Flying Base:	Aircraft Type(s):	Crew Contact Phone No.	Crew Contact Fax No.
GA GS NSW	2585	7	Cobar Areas	Cobar Airport	Cessna 210	+61 447 769 333	N/A
Aircraft: VH-STB FPM - Andy Angelo (AA) ; Processor/s - Ron Creagh (RC) ; Technical Supervisor - Mikey Barrett (MB) NOS ; Pilot/s - Graham Simpson (GS) Des McAtamney (DMc)							

	Date	Flt	Kilometres					Aircraft Time										Standby	
			Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Ferry	Cals Daily	Cals Setup	Mob	Invoice Hours	MR Hours	Hrs to 100 Hrlly	Hrs	Reason
Mon	14/06/21	105,106	1,129.7	0.0	0.0	53,512.9	2,950.8	50,562.1	6.40	0.00	0.00			0.00	6.40	6.4	71.7	1.6	System
Tue	15/06/21	107,108	1,709.5	0.0	0.0	53,512.9	4,660.3	48,852.6	8.60	0.00	0.00			0.00	8.60	8.6	63.1	-0.6	
Wed	16/06/21	109,110	897.8	0.0	0.0	53,512.9	5,558.1	47,954.8	6.35	0.00	0.00			0.00	6.35	6.5	56.6	1.7	Govt officials
Thu	17/06/21	111,112	1,604.5	0.0	0.0	53,512.9	7,162.6	46,350.3	8.20	0.00	0.00			0.00	8.20	8.2	48.4	-0.2	Govt officials
Fri	18/06/21		0.0	0.0	0.0	53,512.9	7,162.6	46,350.3	0.00	0.00	0.00			0.00	0.00	0.0	48.4	8.0	Weather
Sat	19/06/21	113, 114	1,209.6	0.0	0.0	53,512.9	8,372.2	45,140.7	6.30	0.00	0.00			0.00	6.30	6.5	41.9	1.7	Weather
Sun	20/06/21	115, 116	1,720.0	0.0	0.0	53,512.9	10,092.2	43,420.7	8.50	0.00	0.00			0.00	8.50	8.6	33.3	-0.5	
Totals:		12	8,271.1	0.0	0.0	53,512.9	10,092.2	43,420.7	44.35	0.00	0.00	0.00	0.00	0.00	44.35	44.8		11.7	

Chargeable Lost Time (Hrs):	0.0	Non-Chargeable Lost Time (Hrs)	0.0	Previous Week Flown Kilometres:	1821.1	Previous Week Hrs to 100 hrlly:	78.1
-----------------------------	-----	--------------------------------	-----	---------------------------------	--------	---------------------------------	------

	Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments	
Mon	14/06/21	165	1	2	3	1					2 production flights completed in Cobar main area. 2 Avgas fills - 262.2 & 124.9 Litres uploaded.	387.1
Tue	15/06/2021	166	1	2	3	1					2 production flights completed in Cobar main area. 2 Avgas fills - 268.5 & 260.0 Litres uploaded.	528.4
Wed	16/06/2021	167	1	2	3	1					2 production flights completed in Cobar main area. 2 Avgas fills - 239 & 150.7 Litres uploaded. Delayed 2nd take off Photos taken by Govt contractor.	389.6
Thu	17/06/2021	168	1	2	3	1					2 production flights completed in Cobar main area. 2 Avgas fills - 256 & 150 Litres uploaded. Delay 2nd take off Govt officials at airport.	499.9
Fri	18/06/2021	169	1	2	3	1					Early morning rainfall 0.4mm at airport, isolated showers and low cloud - No production attempted or achieved.	0.0
Sat	19/06/2021	170	1	2	3	1					2 production flights completed in Cobar main area. 1st sortie took off and returned due to fog, then delayed due to low cloud, fog - lost 3.0hrs.	393.2
Sun	20/06/2021	171	1	2	3	1					2 production flights completed in Cobar main area. 2 uploads 255.9 & 261.6 Litres. 8.6 on the M/R. Weather conditions good for survey.	517.5
Totals:			7	14	21	7	0.0		0.0			Total Fuel: 2715.7

KEY:

Enter numbers/data into blue marked sections only.

All areas marked in black are self calculating & should not be changed.

Ferry = operations base to survey area & return times.

Mob = (Mob/Demob) initial flying time to project & from project.

MR = Maintenance Release Hours from pilot (which are the chargeable hours).

- = Safety Meeting (SM) / Toolbox Meeting (TBM) check box.
 - = Enter total kilometres & hours flown from previous/preceding Weekly Report.
 - = Information to be entered by GPX Airborne Management.
 - = Daily fuel upload in litres or drums (per aircraft).
- Aircraft/Equipment Maint': **S** = scheduled / **U** = unscheduled.
General/Processing/QC Comments should include basic weather description.



WEEKLY SUMMARY REPORT

OPA-F04 Field Weekly Report

Client:	GPX Job No.	Area(s)	Job Name:	Flying Base:	Aircraft Type(s):	Crew Contact Phone No.	Crew Contact Fax No.
GA GS NSW	2585	7	Cobar Areas	Cobar Airport	Cessna 210	+61 447 769 333	N/A
Aircraft: VH-STB FPM - Andy Angelo (AA) ; Processor/s - Ron Creagh (RC) ; Technical Supervisor - Mikey Barrett (MB) NOS ; Pilot/s - Graham Simpson (GS) Des McAtamney (DMc)							

	Date	Flt	Kilometres					Aircraft Time								Hrs to 100 Hrly	Standby	
			Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Ferry	Cals Daily	Cals Setup	Mob	Invoice Hours	MR Hours	Hrs	Reason
Mon	28/06/21	125, 126	1,626.7	0.0	0.0	53,512.9	18,351.6	35,161.3	8.29	0.00	0.00			0.00	8.29	8.3	73.3	-0.3
Tue	29/06/21	127, 128	1,807.0	0.0	0.0	53,512.9	20,158.6	33,354.3	8.39	0.00	0.00			0.00	8.39	8.4	64.9	-0.4
Wed	30/06/21	129, 130	1,819.1	0.0	0.0	53,512.9	21,977.7	31,535.2	8.72	0.00	0.00			0.00	8.72	8.7	56.2	-0.7
Thu	01/07/21		0.0	0.0	0.0	53,512.9	21,977.7	31,535.2	0.00	0.00	0.00			0.00	0.00	0.0	56.2	8.0
Fri	02/07/21	131	904.6	0.0	0.0	53,512.9	22,882.3	30,630.6	4.22	0.00	0.00			0.00	4.22	4.4	51.8	3.8
Sat	03/07/21	132, 133	1,837.2	0.0	0.0	53,512.9	24,719.5	28,793.4	8.70	0.00	0.00			0.00	8.70	8.8	43.0	-0.7
Sun	04/07/21	134, 135	1,662.2	0.0	0.0	53,512.9	26,381.7	27,131.2	8.22	0.00	0.00			0.00	8.22	8.1	34.9	-0.2
Totals:		11	9,656.8	0.0	0.0	53,512.9	26,381.7	27,131.2	46.54	0.00	0.00	0.00	0.00	0.00	46.54	46.7	9.5	

Chargeable Lost Time (Hrs):	0.0	Non-Chargeable Lost Time (Hrs)	0.0	Previous Week Flown Kilometres:	16724.9	Previous Week Hrs to 100 hrly:	81.6
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	Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments	
Mon	28/06/21	179	1	2	3	1					2 production flights completed - 2 uploads of Avgas - 256.79 & 254.21 Litres. Winds moderate to strong in the morning, eased in the afternoon.	511.0
Tue	29/06/2021	180	1	2	3	1					2 production flights completed - Winds moderate to strong in the morning up to 18kts with clear skies.	513.0
Wed	30/06/2021	181	1	2	3	1					2 production flights completed. Winds moderate to strong for the whole day. Overcast after 12pm.	528.7
Thu	1/07/2021	182	1	2	3	1					Early morning rain at 4.30am till 11ish. No attempt nothing achieved. Weather day after rain low cloud. DMc & GS PDO.	0.0
Fri	2/07/2021	183	1	2	3	1					Thick fog till late morning. 1 production flight, then 50 hrly completed all ok. GS PDO.	270.8
Sat	3/07/2021	184	1	2	3	1					2 production flights completed all ok, 2 refuels	532.3
Sun	4/07/2021	185	1	2	3	1					2 production flights completed all ok, 2 refuels	493.0
Totals:			7	14	21	7	0.0		0.0		Total Fuel:	2848.8

KEY:

Enter numbers/data into blue marked sections only.

All areas marked in black are self calculating & should not be changed.

Ferry = operations base to survey area & return times.

Mob = (Mob/Demob) initial flying time to project & from project.

MR = Maintenance Release Hours from pilot (which are the chargeable hours).



= Safety Meeting (SM) / Toolbox Meeting (TBM) check box.

= Enter total kilometres & hours flown from previous/preceding Weekly Report.

= Information to be entered by GPX Airborne Management.

= Daily fuel upload in litres or drums (per aircraft).

Aircraft/Equipment Maint': S = scheduled / U = unscheduled.

General/Processing/QC Comments should include basic weather description.



WEEKLY SUMMARY REPORT

OPA-F04 Field Weekly Report

Client:	GPX Job No.	Area(s)	Job Name:	Flying Base:	Aircraft Type(s):	Crew Contact Phone No.	Crew Contact Fax No.
GA GS NSW	2585	7	Cobar Areas	Cobar Airport	Cessna 210	+61 447 769 333	N/A
Aircraft: VH-STB FPM - Andy Angelo (AA) ; Processor/s - Ron Creagh (RC) ; Technical Supervisor - Mikey Barrett (MB) NOS ; Pilot/s - Graham Simpson (GS) Des McAtamney (DMC)							

	Date	Flt	Kilometres					Aircraft Time								Hrs to 100 Hrlly	Standby	
			Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Ferry	Cals Daily	Cals Setup	Mob	Invoice Hours	MR Hours	Hrs	Reason
Mon	05/07/21	136, 137	1,702.7	0.0	0.0	53,512.9	28,084.4	25,428.5	8.62	0.00	0.00			0.00	8.50	8.5	26.4	-0.5
Tue	06/07/21	138, 139	1,771.9	0.0	0.0	53,512.9	29,856.3	23,656.6	8.65	0.00	0.00			0.00	8.60	8.6	17.8	-0.6
Wed	07/07/21	140	818.5	0.0	0.0	53,512.9	30,674.8	22,838.1	4.15	0.00	2.30			0.00	6.45	6.5	11.3	1.6 MPI
Thu	08/07/21		0.0	0.0	0.0	53,512.9	30,674.8	22,838.1	0.00	0.00	0.00			0.00	0.00	0.0	100.0	8.0 MPI
Fri	09/07/21		0.0	0.0	0.0	53,512.9	30,674.8	22,838.1	0.00	0.00	0.00			0.00	0.00	0.0	100.0	8.0 MPI / Wx
Sat	10/07/21	141,	369.8	0.0	0.0	53,512.9	31,044.6	22,468.3	2.20	0.00	3.50			0.00	5.50	5.4	94.6	2.5 Wx
Sun	11/07/21	142, 143	1,761.9	0.0	0.0	53,512.9	32,806.5	20,706.4	8.35	0.00	0.00			0.00	8.50	8.5	86.1	-0.5
Totals:		8	6,424.8	0.0	0.0	53,512.9	32,806.5	20,706.4	31.97	0.00	5.80	0.00	0.00	0.00	37.55	37.5	18.5	

Chargeable Lost Time (Hrs):	0.0	Non-Chargeable Lost Time (Hrs)	0.0	Previous Week Flown Kilometres:	26381.7	Previous Week Hrs to 100 hrlly:	34.9
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	Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments	
Mon	05/07/21	186	1	2	3	1					Very cold morning -3.9, 2 production flights completed all ok, 2 uploads of Avgas. De-icing issues in the morning.	523.5 SM
Tue	6/07/2021	187	1	2	3	1					Very cold morning -1.7, 2 production flights completed all ok, 2 uploads of Avgas. De-icing issues in the morning.	527.5 TBM
Wed	7/07/2021	188	1	1	2	1					Very cold morning -5.3, 1 production flight completed, Aircraft to Armidale for early 100 hrlly	246.9 TBM
Thu	8/07/2021	189	1	1	2	1					STB in for MPI - 100hrlly in Armidale with DMC & GS PDO's. DMC Armidale	0.0 TBM
Fri	9/07/2021	190	1	1	2	1					STB in for MPI - 100hrlly in Armidale with DMC - Weather at Armidale and between Cobar & Armidale. DMC & GS PDO's.	0.0 TBM
Sat	10/07/2021	191	1	2	3	1					DMC departs Armidale for Cobar, delayed due fog, returned as unable to get thru low cloud in the ranges. One production flight completed all ok.	277.5 TBM
Sun	11/07/2021	192	1	2	3	1					Very cold morning -3.9, 2 production flights completed over town & airstrip alt bust to 1000ft.	512.6 TBM
Totals:			7	11	18	7	0.0		0.0		Total Fuel:	2087.9

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 General/Processing/QC Comments should include basic weather description.

Reviewed 03/07/2019

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WEEKLY SUMMARY REPORT

OPA-F04 Field Weekly Report

Client:	GPX Job No.	Area(s)	Job Name:	Flying Base:	Aircraft Type(s):	Crew Contact Phone No.	Crew Contact Fax No.
GA GS NSW	2585	7	Cobar Areas	Cobar Airport	Cessna 210	+61 447 769 333	N/A
Aircraft: VH-STB FPM - Andy Angelo (AA) ; Processor/s - Ron Creagh (RC) ; Technical Supervisor - Mikey Barrett (MB) NOS ; Pilot/s - Graham Simpson (GS) Des McAtamney (DMc)							

			Kilometres						Aircraft Time										
	Date	Flt	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Ferry	Cals Daily	Cals Setup	Mob	Invoice Hours	MR Hours	Hrs to 100 Hly	Standby	
Mon	12/07/21	144, 145	1,687.3	0.0	0.0	53,512.9	34,493.8	19,019.1	8.65	0.00	0.00			0.00	8.60	8.6	77.5	-0.6	
Tue	13/07/21	146, 147	1,275.7	0.0	0.0	53,512.9	35,769.5	17,743.4	7.25	0.00	0.00			0.00	7.20	7.2	70.3	0.8	Winds
Wed	14/07/21		0.0	0.0	0.0	53,512.9	35,769.5	17,743.4	0.00	0.00	0.00			0.00	0.00	0.0	70.3	8.0	Rain
Thu	15/07/21	148,149	1,122.0	0.0	0.0	53,512.9	36,891.5	16,621.4	7.50	0.00	0.00			0.00	7.40	7.4	62.9	0.6	
Fri	16/07/21	150	446.8	0.0	0.0	53,512.9	37,338.3	16,174.6	2.85	0.00	0.00			0.00	3.00	3.0	59.9	5.0	Winds
Sat	17/07/21		0.0	0.0	0.0	53,512.9	37,338.3	16,174.6	0.00	0.00	0.00			0.00	0.00	0.0	59.9	8.0	Rain / Winds
Sun	18/07/21	151, 152	1,385.2	0.0	0.0	53,512.9	38,723.5	14,789.4	7.20	0.00	0.00			0.00	7.30	7.3	52.6	0.7	Fog
	Totals:	9	5,917.0	0.0	0.0	53,512.9	38,723.5	14,789.4	33.45	0.00	0.00	0.00	0.00	0.00	33.50	33.5		22.5	

Chargeable Lost Time (Hrs):	0.0	Non-Chargeable Lost Time (Hrs):	0.0	Previous Week Flown Kilometres:	32806.5	Previous Week Hrs to 100 hly:	86.1
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	Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments	
Mon	12/07/21	193	1	2	3	1					Two production flights completed with 2 uploads of Avgas 263.01 & 253.35 Litres - Cloudy afternoon & 8.6 on M/R.	516.4 SM
Tue	13/07/2021	194	1	2	3	1					One production completed all ok, the 2nd flight cut short due to very strong winds. 255.51 & 178.52 Litres. 7.2 on the M/R.	434.0 TBM
Wed	14/07/2021	195	1	2	3	1					No attempt nothing achieved due to weather - isolated showers throughout the day. Weather Day no production.	0.0 TBM
Thu	15/07/2021	196	1	2	3	1					1st production flight completed all ok. 2nd production flight - cut short due to rain, lost about 1 hr. 2 uploads Avgas - 254.22 & 192.96 Litres	447.2 TBM
Fri	16/07/2021	197	1	2	3	1					1st production not completed due to very strong winds 30+ knots, flight aborted with no further attempts.	181.2 TBM
Sat	17/07/2021	198	1	2	3	1					No production attempted or achieved - due to rain and then very strong winds - 30+knots all day.	0.0 TBM
Sun	18/07/2021	199	1	2	3	1					1st sortie returned due fog rolling in from the SW. Lost 1.0 hrs, 2nd production flight completed. 2 uploads with 3 takeoff & landings.	453.6 TBM
Totals:			7	14	21	7	0.0		0.0			Total Fuel: 2032.4

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Reviewed 03/07/2019

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WEEKLY SUMMARY REPORT

OPA-F04 Field Weekly Report

Client:	GPX Job No.	Area(s)	Job Name:	Flying Base:	Aircraft Type(s):	Crew Contact Phone No.	Crew Contact Fax No.
GA GS NSW	2585	7	Cobar Areas	Cobar Airport	Cessna 210	+61 447 769 333	N/A
Aircraft: VH-STB FPM - Andy Angelo (AA) ; Processor/s - Ron Creagh (RC) ; Technical Supervisor - Mikey Barrett (MB) NOS ; Pilot/s - Graham Simpson (GS) Des McAtamney (DMc)							

				Kilometres					Aircraft Time										
	Date	Flt	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Ferry	Cals Daily	Cals Setup	Mob	Invoice Hours	MR Hours	Hrs to 100 Hly	Standby	
Mon	19/07/21	153	0.0	0.0	0.0	53,512.9	38,723.5	14,789.4	4.20	0.00	0.00			0.00	0.00	4.2	48.4	3.8	Rain
Tue	20/07/21	154	205.8	0.0	0.0	53,512.9	38,929.3	14,583.6	4.30	0.00	0.00			0.00	0.00	4.4	44.0	3.6	Rain / Winds
Wed	21/07/21	155, 156	218.3	0.0	0.0	53,512.9	39,147.6	14,365.3	8.30	0.00	0.00			0.00	0.00	8.4	35.6	-0.4	
Thu	22/07/21	157,158	907.4	0.0	0.0	53,512.9	40,055.0	13,457.9	6.60	0.00	0.00			0.00	0.00	6.7	28.9	1.3	Wx
Fri	23/07/21		0.0	0.0	0.0	53,512.9	40,055.0	13,457.9	1.60	0.00	0.00			0.00	0.00	1.8	27.1	6.2	Rain / Winds
Sat	24/07/21	159,160	939.7	0.0	0.0	53,512.9	40,994.7	12,518.2	7.40	0.00	0.00			0.00	0.00	7.5	19.6	0.5	
Sun	25/07/21	161,162	423.8	0.0	0.0	53,512.9	41,418.5	12,094.4	3.80	0.00	0.00			0.00	3.90	3.9	15.7	4.1	Winds
	Totals:	10	2,695.0	0.0	0.0	53,512.9	41,418.5	12,094.4	36.20	0.00	0.00	0.00	0.00	0.00	3.90	36.9		19.1	

Chargeable Lost Time (Hrs):	0.0	Non-Chargeable Lost Time (Hrs)	0.0	Previous Week Flown Kilometres:	38723.5	Previous Week Hrs to 100 hly:	52.6
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	Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments	
Mon	19/07/21	200	1	2	3	1					Refer Legacy Minerals Weekly report - Due rain no production due to weather on GS GA NSW. 1 production flight in Legacy Infill blocks. DMc PDO.	248.1
Tue	20/07/2021	201	1	2	3	1					1 x production flight flown in Legacy South infill, now completed. 3.5 traverse lines flown in Cobar Main block.	269.0
Wed	21/07/2021	202	1	2	3	1					2 production flights flown in GA, Devex and Thomson survey blocks. The Devex block completed with all lines over Omrah Downs completed	507.5
Thu	22/07/2021	203	1	2	3	1					2 production flights flown in GA, and Thomson block. The Thomson block is completed, after the 1st sortie. 2nd sortie cut short due to weather	401.0
Fri	23/07/2021	204	1	2	3	1					Attempted production flight with reconnaissance flight flown at Miandetta block. No production achieved due to rain	102.8
Sat	24/07/2021	205	1	2	3	1					2 x Production flights completed in the Ext 3. Not able to complete Main block, as waiting for cattle to be moved out of some paddocks	455.0
Sun	25/07/2021	206	1	2	3	1					Strong winds aborted both flights - 1st sortie Flown Main Cobar, 2nd in Miandetta, 2 uploads 147.35 & 72.54 Litres, 3.9 on the M/R	219.9
Totals:			7	14	21	7	0.0		0.0		Total Fuel:	2203.3

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General/Processing/QC Comments should include basic weather description.



WEEKLY SUMMARY REPORT

OPA-F04 Field Weekly Report

Client:	GPX Job No.	Area(s)	Job Name:	Flying Base:	Aircraft Type(s):	Crew Contact Phone No.	Crew Contact Fax No.
GA GS NSW	2585	7	Cobar Areas	Cobar Airport	Cessna 210	+61 447 769 333	N/A
Aircraft: VH-STB FPM - Andy Angelo (AA) ; Processor/s - Ron Creagh (RC) ; Technical Supervisor - Mikey Barrett (MB) NOS ; Pilot/s - Graham Simpson (GS) Des McAtamney (DMc)							

	Date	Flt	Kilometres					Aircraft Time								Hrs to 100 Hly	Standby	
			Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Ferry	Cals Daily	Cals Setup	Mob	Invoice Hours	MR Hours	Hrs	Reason
Mon	26/07/21	163, 164	1,234.5	0.0	0.0	53,512.9	42,653.0	10,859.9	8.50	0.00	0.00			0.00	8.50	8.5	7.2	-0.5
Tue	27/07/21	165	477.0	0.0	0.0	53,512.9	43,130.0	10,382.9	2.85	0.00	2.20			0.00	5.00	5.0	2.2	3.0 MPI
Wed	28/07/21		0.0	0.0	0.0	53,512.9	43,130.0	10,382.9	0.00	0.00	0.00			0.00	0.00	0.0	100.0	8.0 MPI
Thu	29/07/21	166	636.3	0.0	0.0	53,512.9	43,766.3	9,746.6	4.17	0.00	2.35			0.00	6.70	6.7	93.3	1.3 Wx
Fri	30/07/21	167, 168	1,198.1	0.0	0.0	53,512.9	44,964.4	8,548.5	8.85	0.00	0.00			0.00	8.90	8.9	84.4	-0.9
Sat	31/07/21		0.0	0.0	0.0	53,512.9	44,964.4	8,548.5	0.00	0.00	0.00			0.00	0.00	0.0	84.4	8.0 Wx
Sun	01/08/21	169, 170	1,362.8	0.0	0.0	53,512.9	46,327.2	7,185.7	8.77	0.00	0.00			0.00	8.60	8.6	75.8	-0.6
Totals:		8	4,908.7	0.0	0.0	53,512.9	46,327.2	7,185.7	33.14	0.00	4.55	0.00	0.00	0.00	37.70	37.7	18.3	

Chargeable Lost Time (Hrs):	0.0	Non-Chargeable Lost Time (Hrs)	0.0	Previous Week Flown Kilometres:	41418.5	Previous Week Hrs to 100 hly:	15.7
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	Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments	
Mon	26/07/21	207	1	2	3	1					1st sortie flown in Ext 3, completed. 2nd sortie reconnaissance flight and 728.5 kms of production in Ext 4 with 697.5 kms left to fly.	504.9
Tue	27/07/2021	208	1	1	2	1					One flight completed in Cobar Main area - CSA grd crew FLEM, scrubbed approx 100 kms to be re-flown. Ferry flight to Armidale for 100hly	174.6
Wed	28/07/2021	209	1	1	2	1					STB in Armidale for MPI - 100 Hly maintenance. GS in Armidale & PDO's for both pilots DMc & GS.	0.0
Thu	29/07/2021	210	1	2	3	1					GS & STB delayed departure due to fog, returned and one production flight completed all ok.	399.3
Fri	30/07/2021	211	1	2	3	1					2 production flights completed all ok. 8.9 on the M/R. 2 Avgas upload 267.01 & 267.66 Litres.	534.7
Sat	31/07/2021	212	1	2	3	1					Winds - No production attempted or achieved due very strong winds. Early PDO for both pilots - GS & DMc.	0.0
Sun	1/08/2021	213	1	2	3	1					Two production flights completed. In Main Cobar area, Babinda & Coolabah. 8.6 on the M/R. 2 Avgas uploads 258.16 & 277.55 Litres.	535.7
Totals:			7	12	19	7	0.0		0.0		Total Fuel:	2149.2

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WEEKLY SUMMARY REPORT

OPA-F04 Field Weekly Report

Client:	GPX Job No.	Area(s)	Job Name:	Flying Base:	Aircraft Type(s):	Crew Contact Phone No.	Crew Contact Fax No.
GA GS NSW	2585	7	Cobar Areas	Cobar Airport	Cessna 210	+61 447 769 333	N/A
Aircraft: VH-STB FPM - Andy Angelo (AA) ; Processor/s - Ron Creagh (RC) ; Technical Supervisor - Mikey Barrett (MB) NOS ; Pilot/s - Graham Simpson (GS) Des McAtamney (DMc)							

	Kilometres								Aircraft Time							Hrs to 100 Hrs	Hrs	Standby Reason	
	Date	Flt	Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Ferry	Cals Daily	Cals Setup	Mob	Invoice Hours				MR Hours
Mon	02/08/21	171, 172	901.8	0.0	0.0	53,512.9	47,229.0	6,283.9	7.01	0.00	0.00			0.00	7.00	7.0	68.8	1.0	Fog
Tue	03/08/21	173, 174	1,305.7	0.0	0.0	53,512.9	48,534.7	4,978.2	8.79	0.00	0.00			0.00	8.70	8.7	60.1	-0.7	
Wed	04/08/21		0.0	0.0	0.0	53,512.9	48,534.7	4,978.2	0.70	0.00	0.00			0.00	0.90	0.9	59.2	7.1	Winds
Thu	05/08/21	175	587.8	0.0	0.0	53,512.9	49,122.5	4,390.4	4.00	0.00	0.00			0.00	4.00	4.0	55.2	4.0	Fog / Tyre repair
Fri	06/08/21	176, 177	957.6	0.0	0.0	53,512.9	50,080.1	3,432.8	7.60	0.00	0.00			0.00	7.40	7.4	47.8	0.6	50 hrly
Sat	07/08/21	178, 179	1,140.6	0.0	0.0	53,512.9	51,220.7	2,292.2	8.39	0.00	0.00			0.00	8.20	8.2	39.6	-0.2	
Sun	08/08/21	180, 181	1,255.4	0.0	0.0	53,512.9	52,476.1	1,036.8	8.41	0.00	0.00			0.00	8.70	8.7	30.9	-0.7	
	Totals:	11	6,148.9	0.0	0.0	53,512.9	52,476.1	1,036.8	44.90	0.00	0.00	0.00	0.00	0.00	44.90	44.9		11.1	

Chargeable Lost Time (Hrs):	0.0	Non-Chargeable Lost Time (Hrs)	0.0	Previous Week Flown Kilometres:	46327.2	Previous Week Hrs to 100 hrly:	75.8
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Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments	
Mon	02/08/21	1	2	3	1					Both sorties flown in Ext-2 Coolabah with the 1st sortie delayed by 2 hrs due to fog. Contacted AAA re: D513 danger zone within Ext 6 survey area.	423.7
Tue	3/08/2021	1	2	3	1					Both sorties flown in Ext-2 with the 1st sortie of 799.6 kms & 2nd sortie 506.1. Area is now completed.	523.1
Wed	4/08/2021	1	2	3	1					1st sortie returned early with only been airborne for 42 mins due large rain front, causing poor visibility & very strong winds. DMc PDO - early.	47.9
Thu	5/08/2021	1	2	3	1					1st sortie delayed due to fog (2 hrs). Changed plans to fly in the Cobar main block - Robert ok'd as mustering completed.	224.6
Fri	6/08/2021	1	2	3	1					1st sortie flown in Ext - 5. Flew part line 72080 in Main area.. 2nd sortie flown in Ext - 6.. Thomson's have arrived in Cobar and will be based here.	447.5
Sat	7/08/2021	1	2	3	1					1st sortie flown in Main Cobar & Ext 6. Thomson's aircraft (VH-JEI) arrived at Cobar. Meeting with Don & organised plan moving forward.	502.8
Sun	8/08/2021	1	2	3	1					Both flights in Gilgunnia South. 1st sortie 559.4 kms & 2nd sortie 696.0 kms, all good. 2 uploads 255.67 & 263.69 Litres. 8.7 on M/R.	519.4
Totals:		7	14	21	7	0.0		0.0			2689.0

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WEEKLY SUMMARY REPORT

OPA-F04 Field Weekly Report

Client:	GPX Job No.	Area(s)	Job Name:	Flying Base:	Aircraft Type(s):	Crew Contact Phone No.	Crew Contact Fax No.
GA GS NSW	2585	7	Cobar Areas	Cobar Airport	Cessna 210	+61 447 769 333	N/A
Aircraft: VH-STB FPM - Andy Angelo (AA) ; Processor/s - Ron Creagh (RC) ; Technical Supervisor - Mikey Barrett (MB) NOS ; Pilot/s - Graham Simpson (GS) Des McAtamney (DMc)							

	Date	Flt	Kilometres						Aircraft Time								Hrs to 100 Hrs		Standby Reason
			Prod	Scrub	Reflight	Total Planned	Flown to date	Remain	Prod	Scrub	Ferry	Cals Daily	Cals Setup	Mob	Invoice Hours	MR Hours	100 Hrs	Hrs	
Mon	09/08/21	182, 183	1,017.3	0.0	0.0	53,512.9	53,493.4	19.5	7.65	0.00	0.00			0.00	7.60	7.6	23.3	0.4	Fog
Tue	10/08/21	184	19.5	0.0	0.0	53,512.9	53,512.9	0.0	2.50	0.00	0.00			0.00	2.60	2.6	20.7	5.4	
Wed	11/08/21		0.0	0.0	0.0	53,512.9	53,512.9	0.0	0.00	0.00	0.00			0.00	0.00	0.0	20.7	8.0	
Thu	12/08/21	Ferry	0.0	0.0	0.0	53,512.9	53,512.9	0.0	0.00	0.00	2.40			0.00	2.40	2.4	18.3	5.6	
Fri	13/08/21		0.0	0.0	0.0	53,512.9	53,512.9	0.0	0.00	0.00	0.00			0.00	0.00	0.0	18.3	8.0	
Sat	14/08/21		0.0	0.0	0.0	53,512.9	53,512.9	0.0	0.00	0.00	0.00			0.00	0.00	0.0	18.3	8.0	
Sun	15/08/21		0.0	0.0	0.0	53,512.9	53,512.9	0.0	0.00	0.00	0.00			0.00	0.00	0.0	18.3	8.0	
Totals:		3	1,036.8	0.0	0.0	53,512.9	53,512.9	0.0	10.15	0.00	2.40	0.00	0.00	0.00	12.60	12.6		43.4	

Chargeable Lost Time (Hrs):	0.0	Non-Chargeable Lost Time (Hrs):	0.0	Previous Week Flown Kilometres:	52476.1	Previous Week Hrs to 100 hrly:	30.9
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Date	Julian Day	GPX Crew	Other Crew	Accom' (Rooms)	Vehicles	Aircraft Maint' Hrs	S / U	Equip Maint' Hrs	S / U	General / Processing / QC Comments	
Mon	09/08/21	221	1	2	3	1				Cold morning -1.2 @ 6am frost on the wings. Winds calm then north. 2 flights Ext 5. Covid test A.A & G.S & GS 2nd shot.	459.0
Tue	10/08/2021	222	1	2	3	1				Ext 5 completed. Mag Comp flight flown & 2 RadAlt stacks. Awaiting demob ok. DMc QLD entry ok, GS no entry approval yet	TBM
Wed	11/08/2021	223	0	2	2	1				Packed aircraft - drive to Dubbo (in Covid lockdown) Overnight at the Cattlemans Motel	155.6
Thu	12/08/2021	224	0	0	0	0				GS & DMc fly STB back to Armidale then to BNE & quarantine 2 weeks. AA departs Dubbo for Perth via Sydney & arrives Perth, early am Friday.	TBM
Fri	13/08/2021	225	0	0	0	0				AA in quarantine Pth 2 weeks	
Sat	14/08/2021	226	0	0	0	0					
Sun	15/08/2021	227	0	0	0	0					
Totals:			2	6	8	3	0.0	0.0			Total Fuel: 614.6

KEY:

Enter numbers/data into blue marked sections only.

All areas marked in black are self calculating & should not be changed.

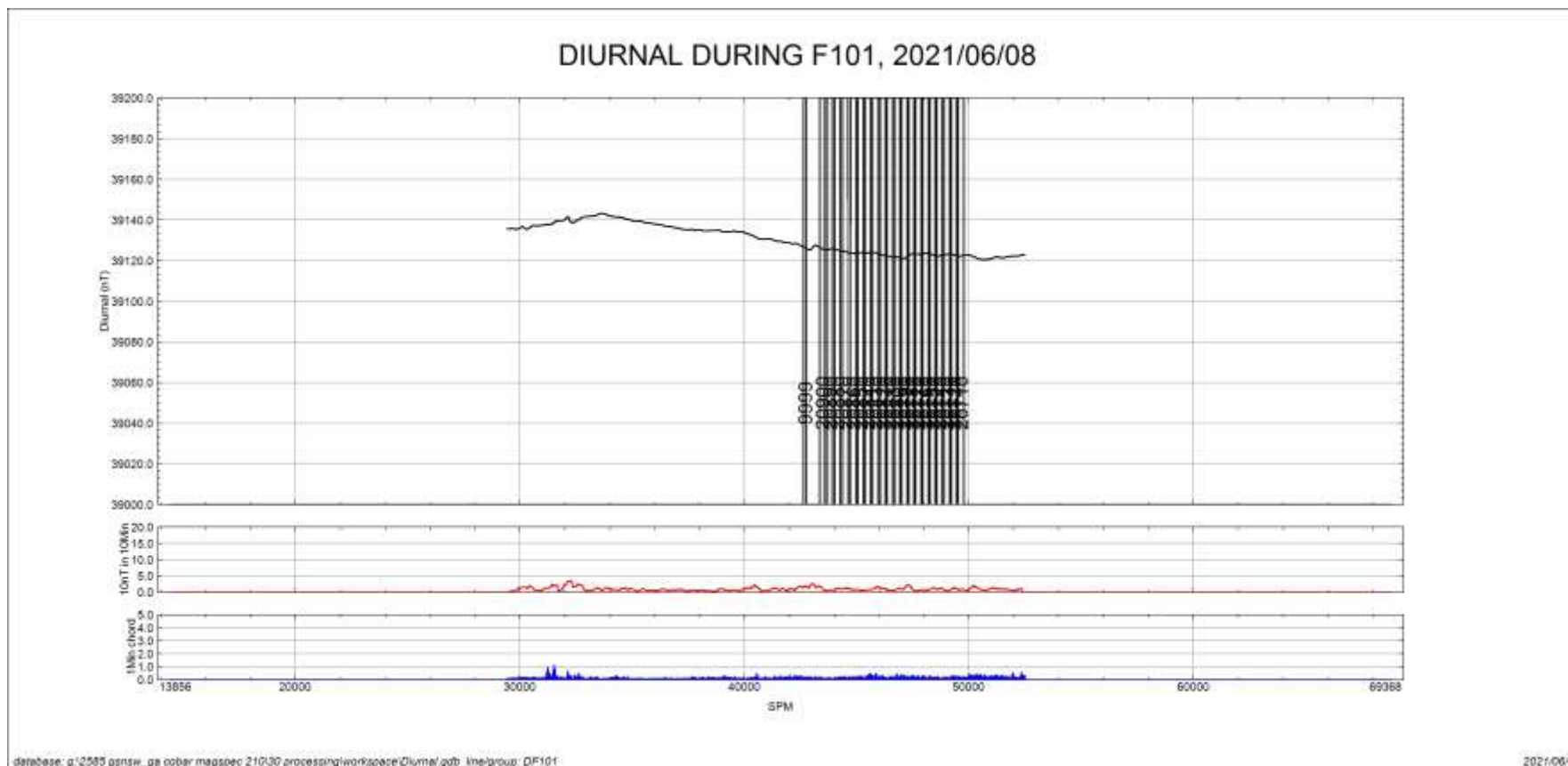
Ferry = operations base to survey area & return times.

Mob = (Mob/Demob) initial flying time to project & from project.

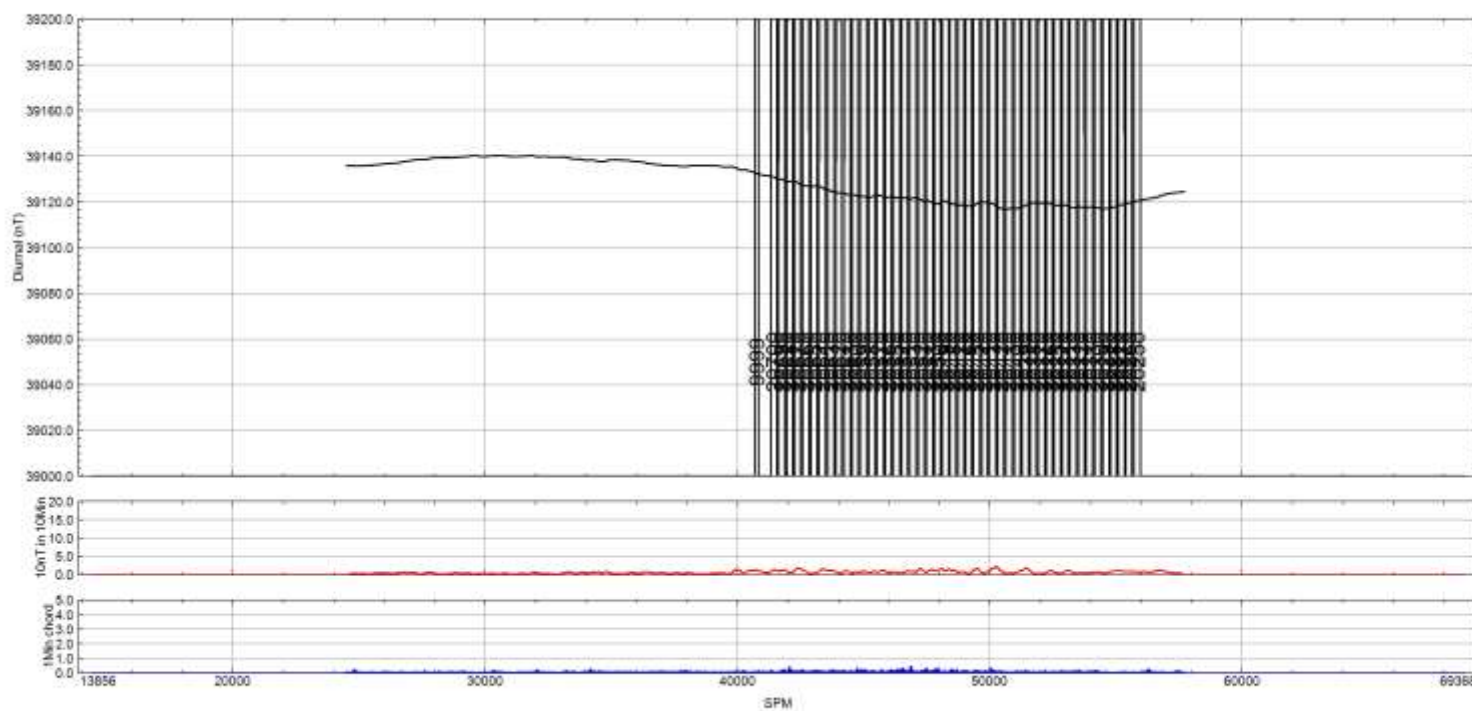
MR = Maintenance Release Hours from pilot (which are the chargeable hours).

- = Safety Meeting (SM) / Toolbox Meeting (TBM) check box.
 - = Enter total kilometres & hours flown from previous/preceding Weekly Report.
 - = Information to be entered by GPX Airborne Management.
 - = Daily fuel upload in litres or drums (per aircraft).
- Aircraft/Equipment Maint': **S** = scheduled / **U** = unscheduled.
General/Processing/QC Comments should include basic weather description.

APPENDIX C: DIURNAL BASE STATION PLOTS



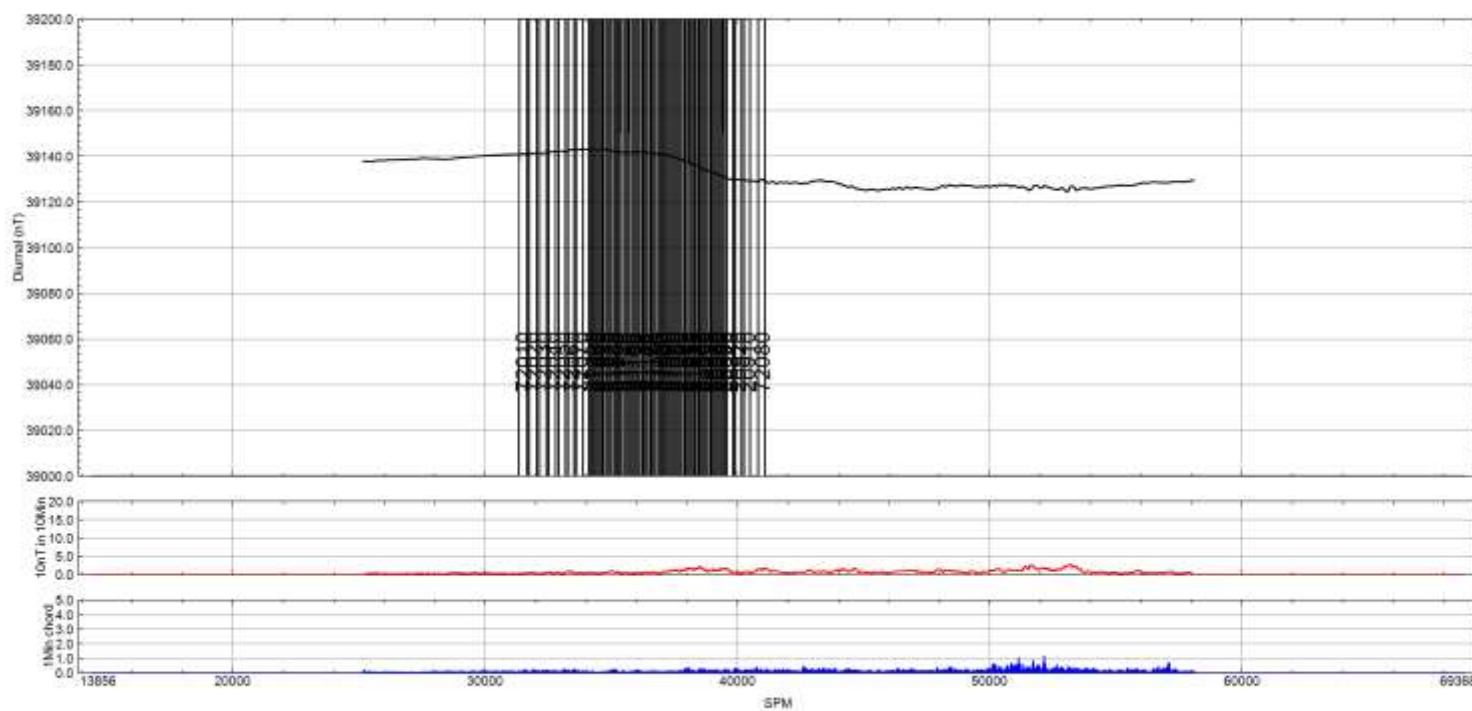
DIURNAL DURING F102, 2021/06/12



database: g:\2585 gnrsw_ga cobar magspec 210130 processing\workspace\Diurnal\gdb linegroup: DF102

2021/06/12

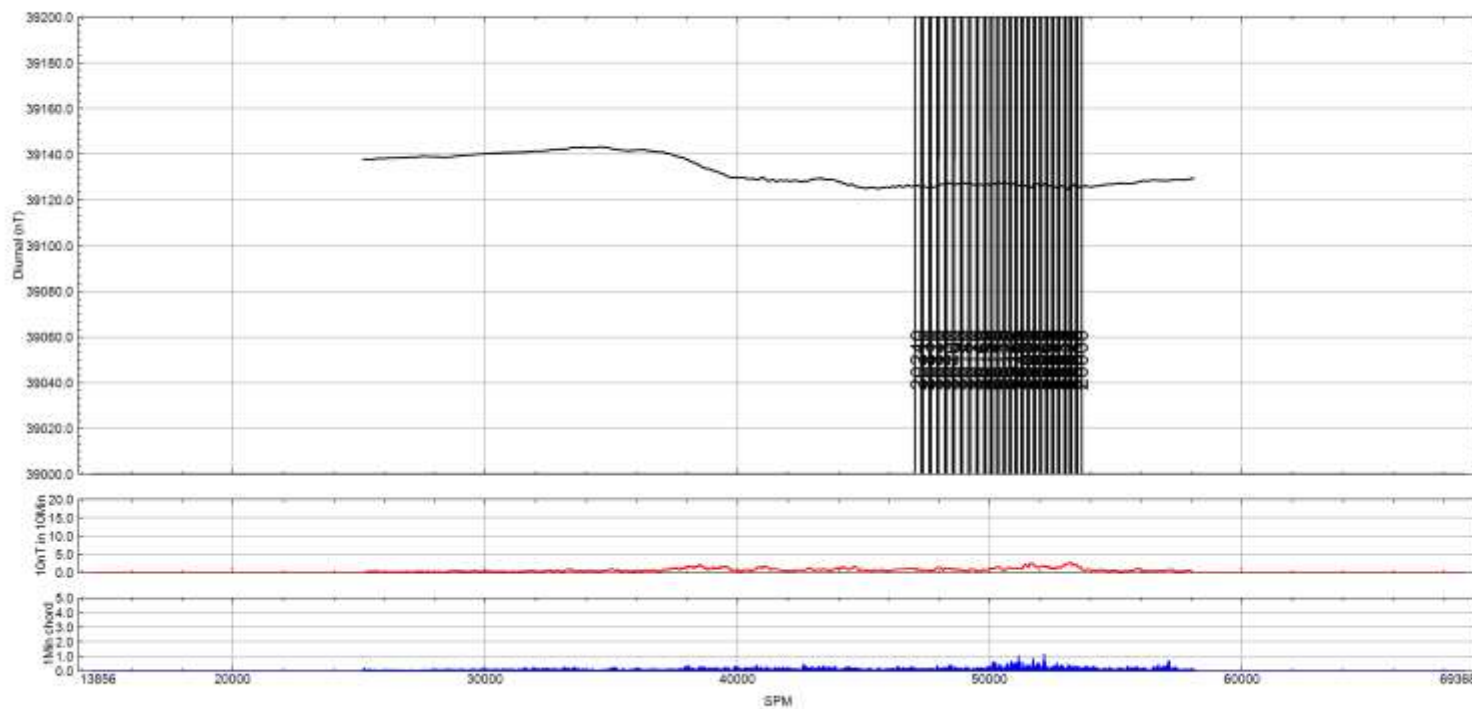
DIURNAL DURING F103, 2021/06/13



database: g:\2585 gnsr\ga_cobar_magspec_210130\processing\workspace\Diurnal\gdb linegroup: DF103

2021/06/13

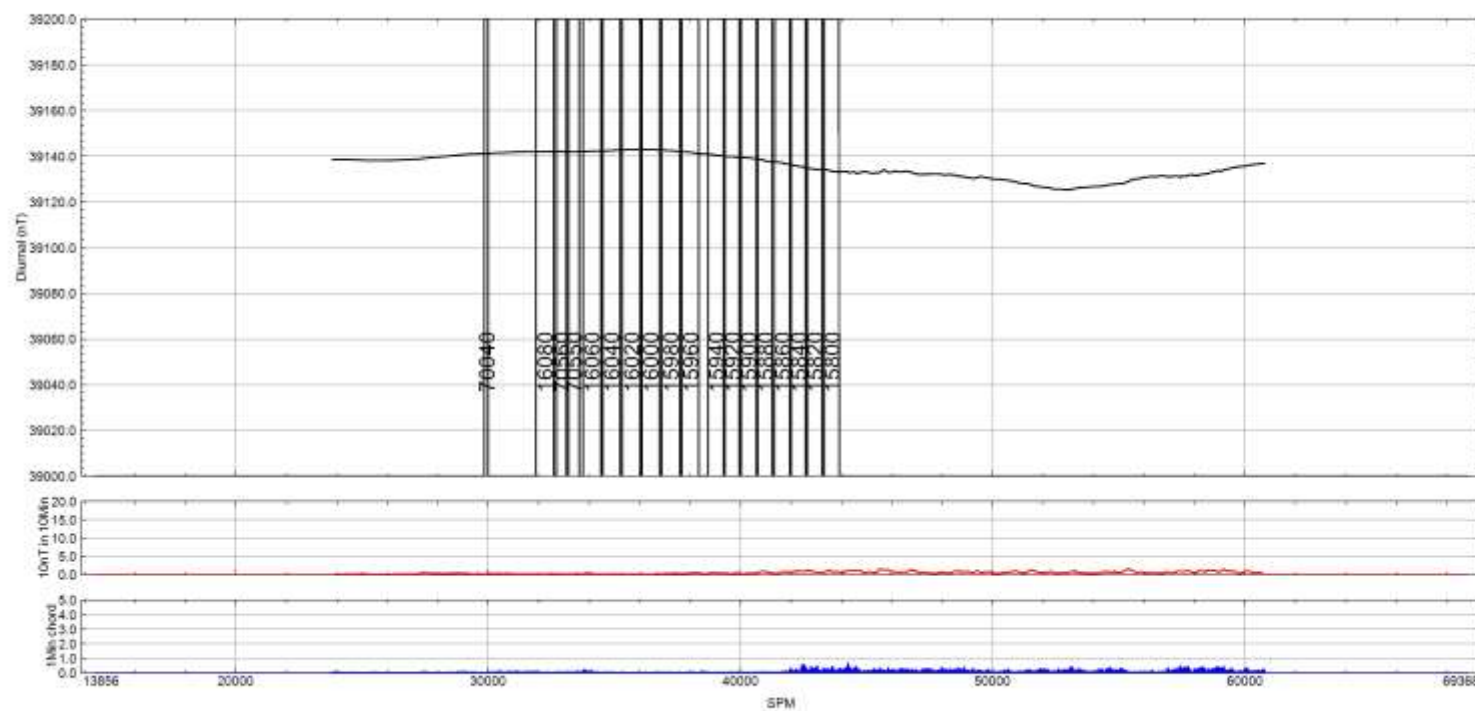
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2021/06/13

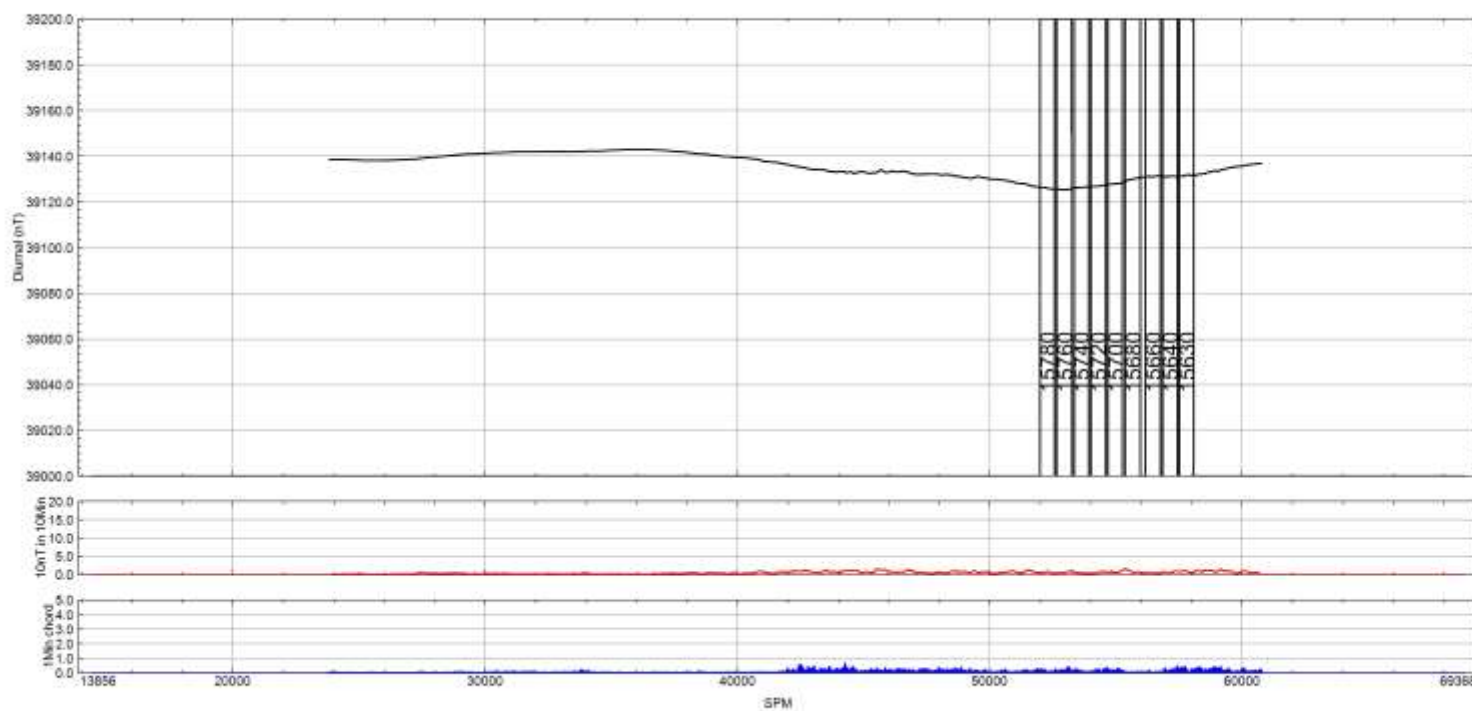
DIURNAL DURING F105, 2021/06/14



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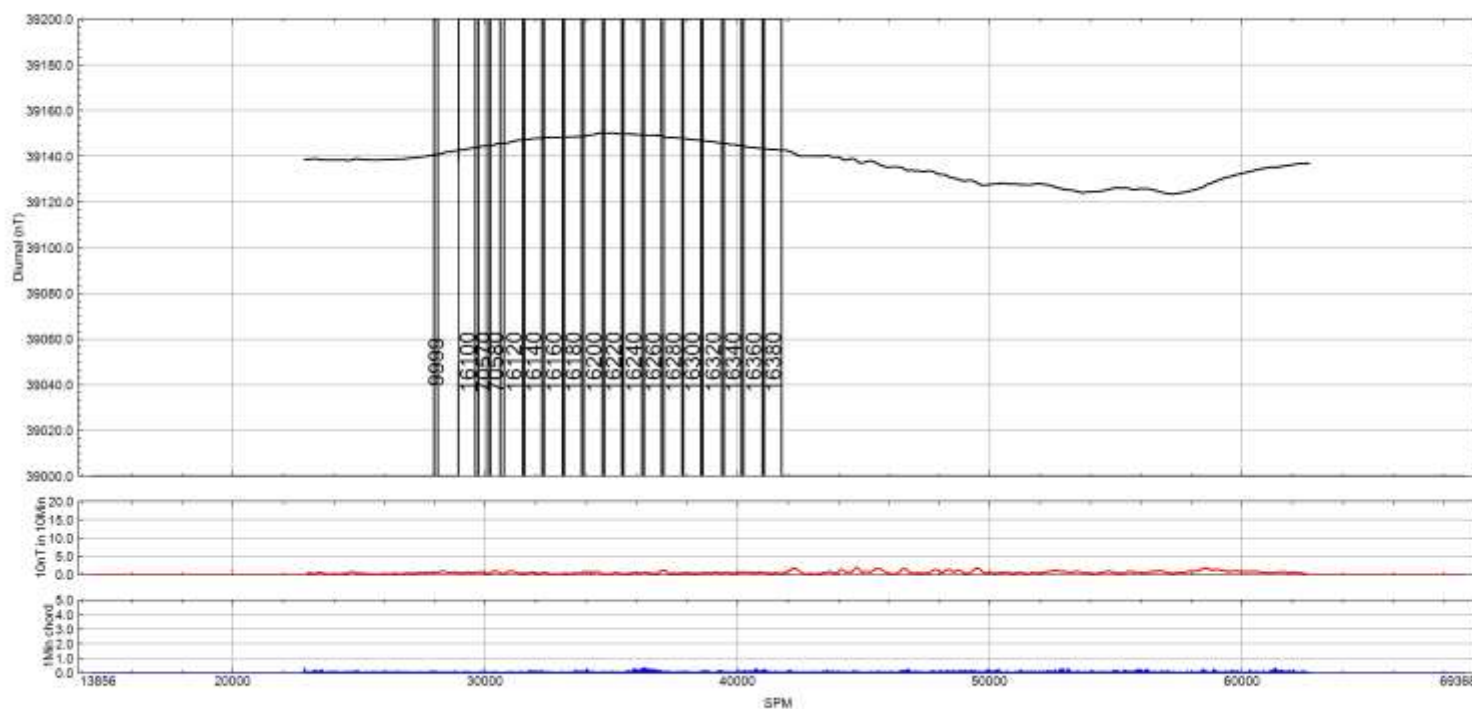
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2021/06/14

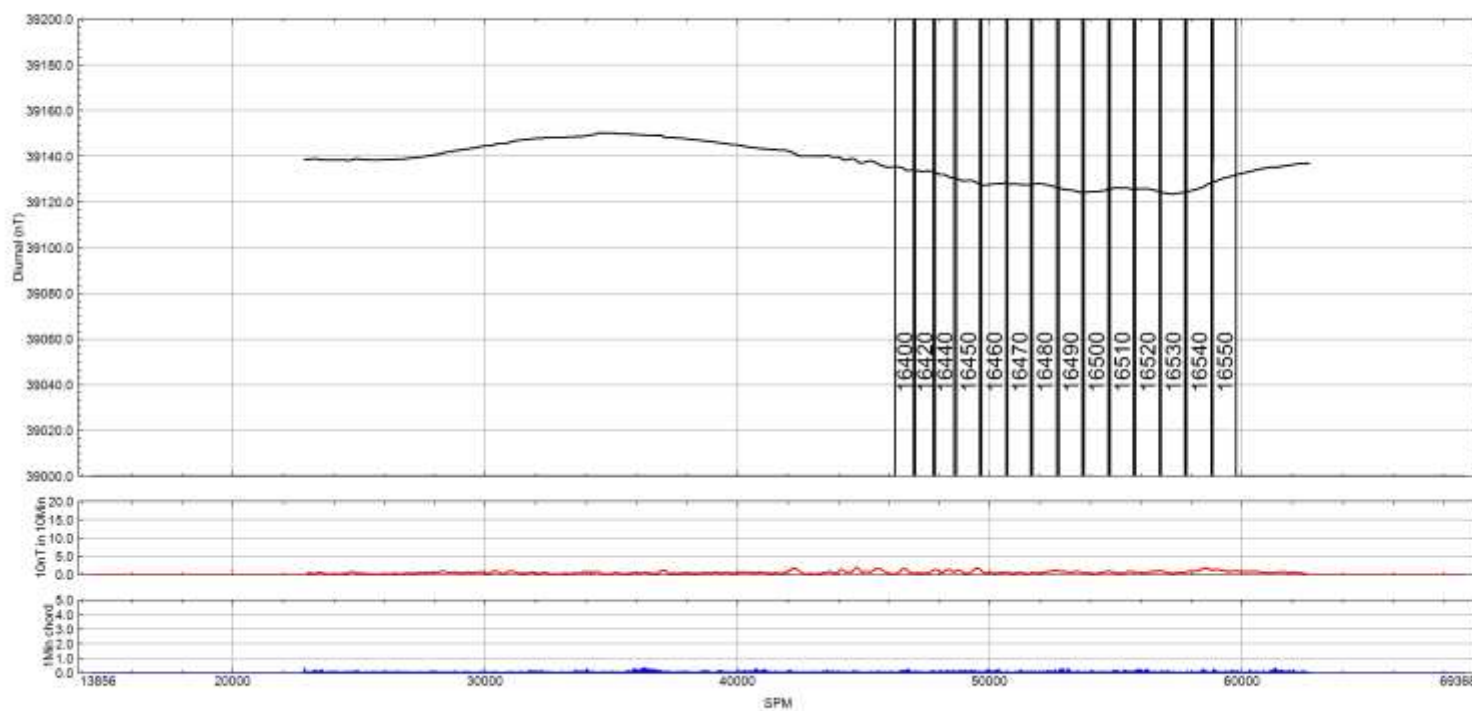
DIURNAL DURING F107, 2021/06/15



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2021/06/16

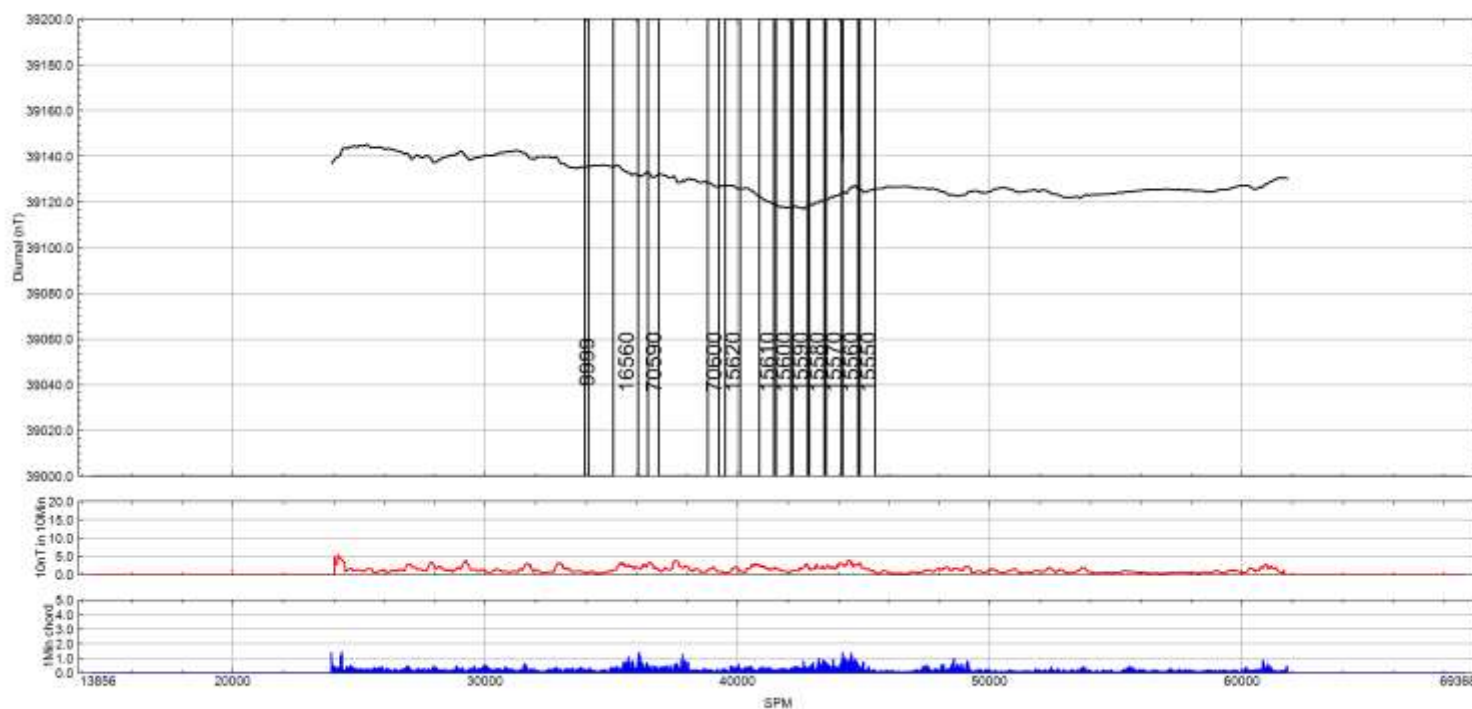
DIURNAL DURING F108, 2021/06/15



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2021/06/15

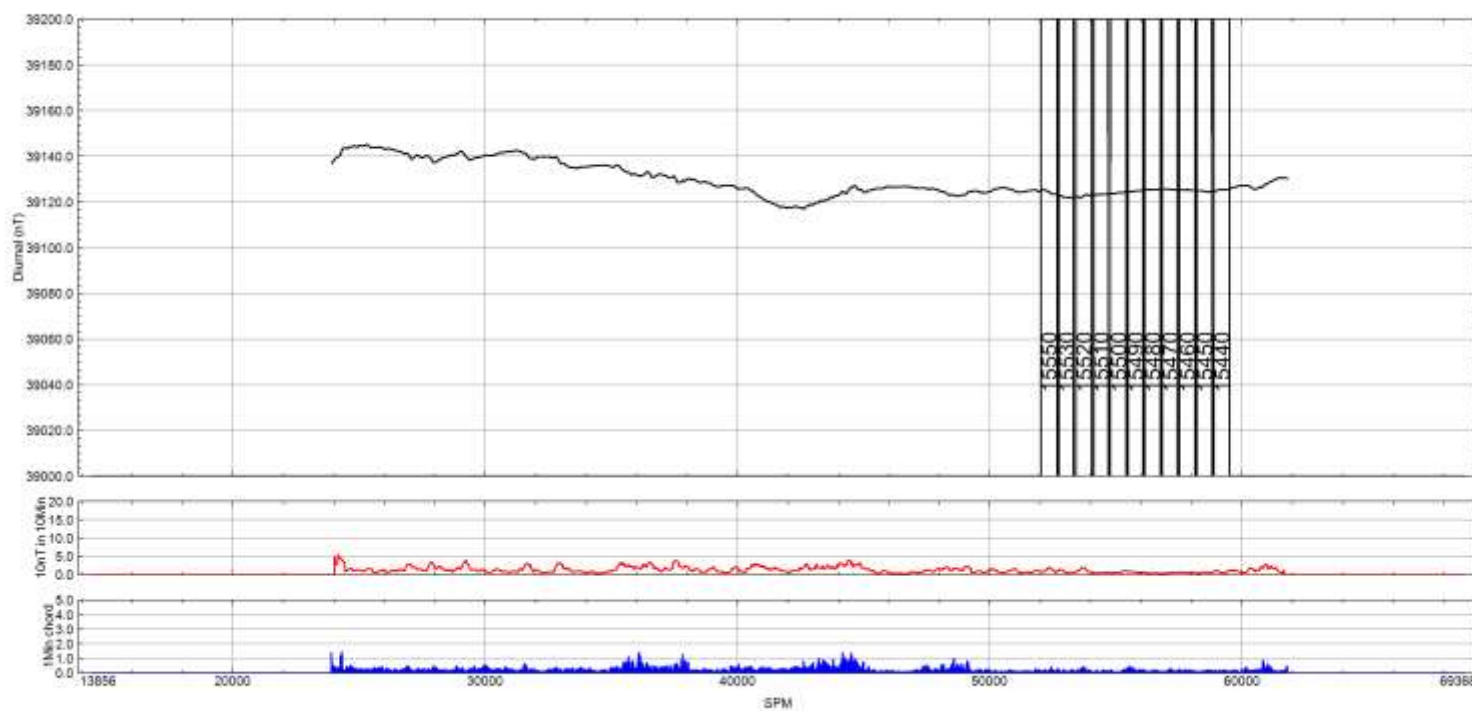
DIURNAL DURING F109, 2021/06/16



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2021/06/16

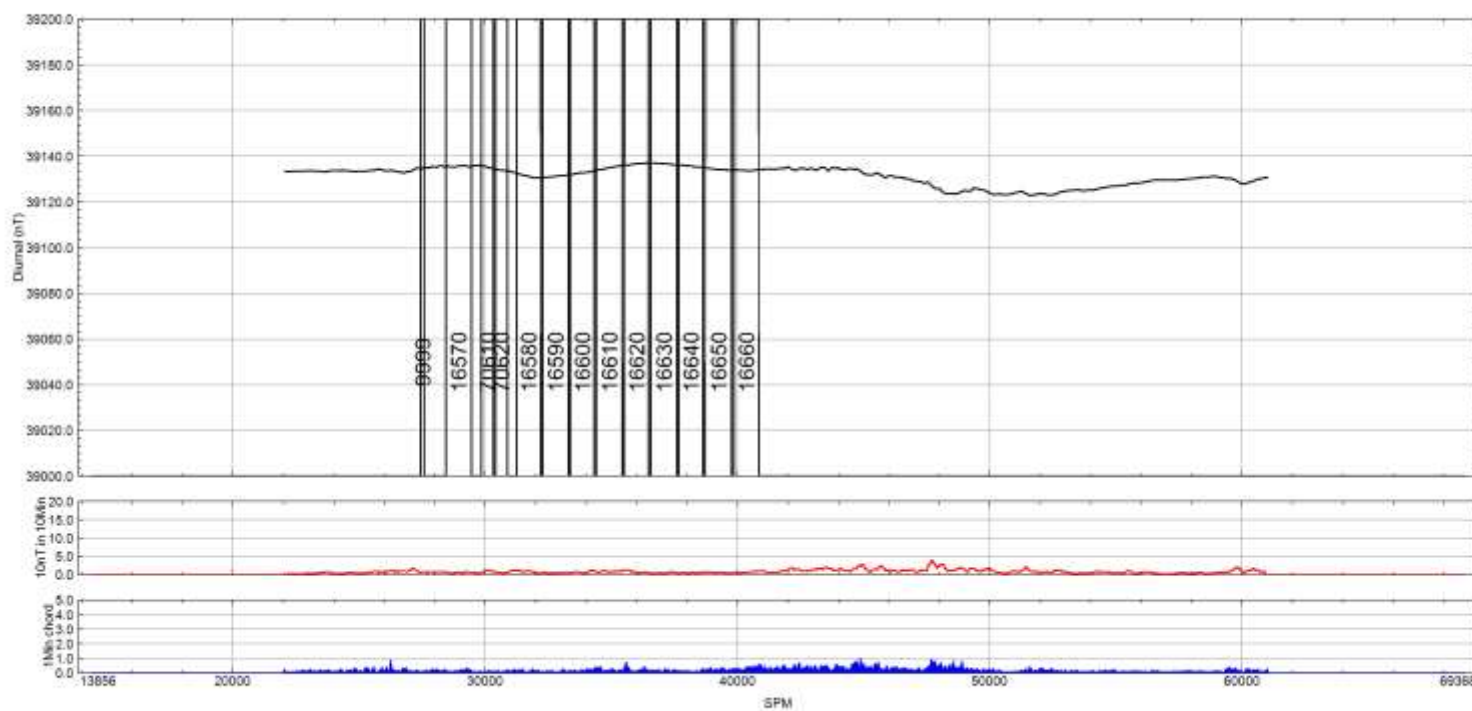
DIURNAL DURING F110, 2021/06/16



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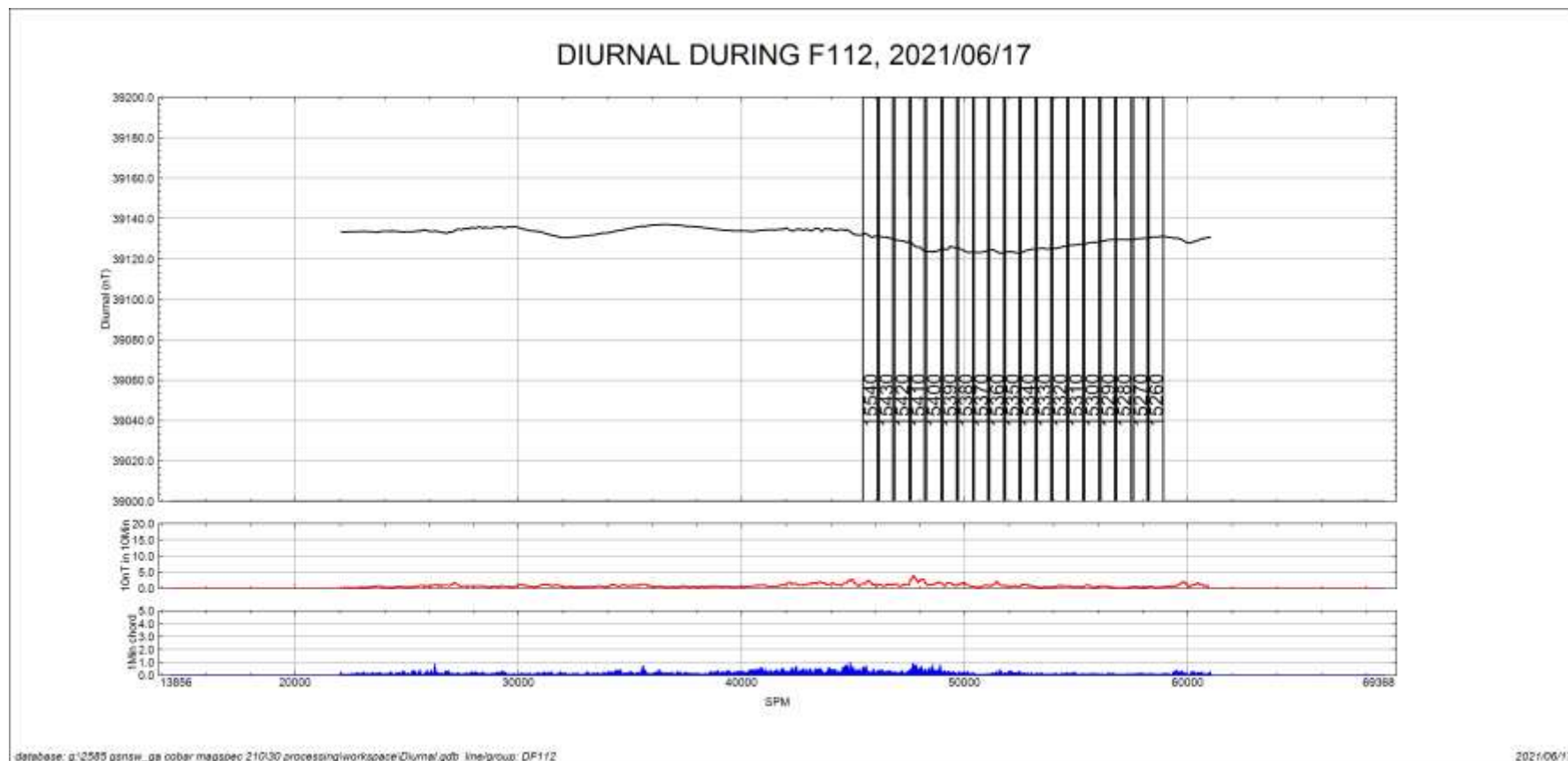
2021/06/16

DIURNAL DURING F111, 2021/06/17

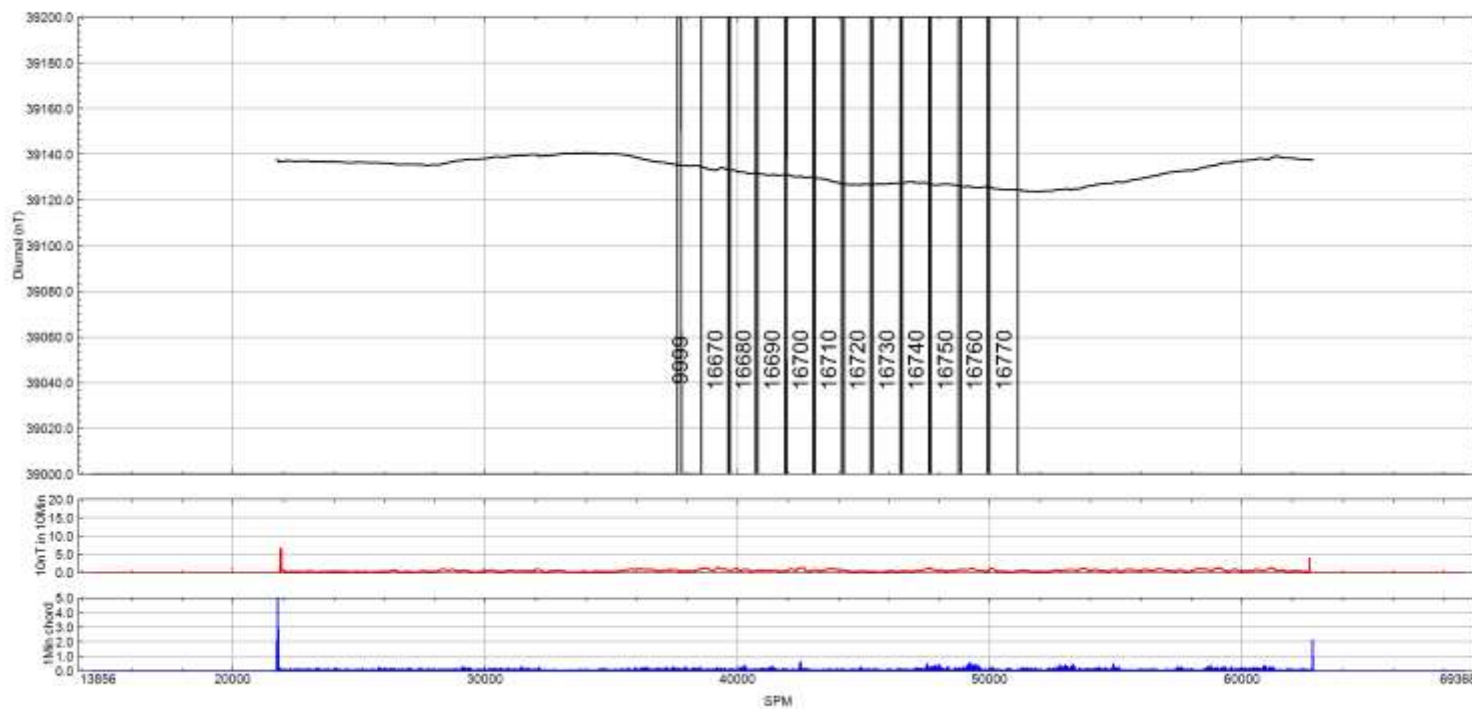


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2021/06/17



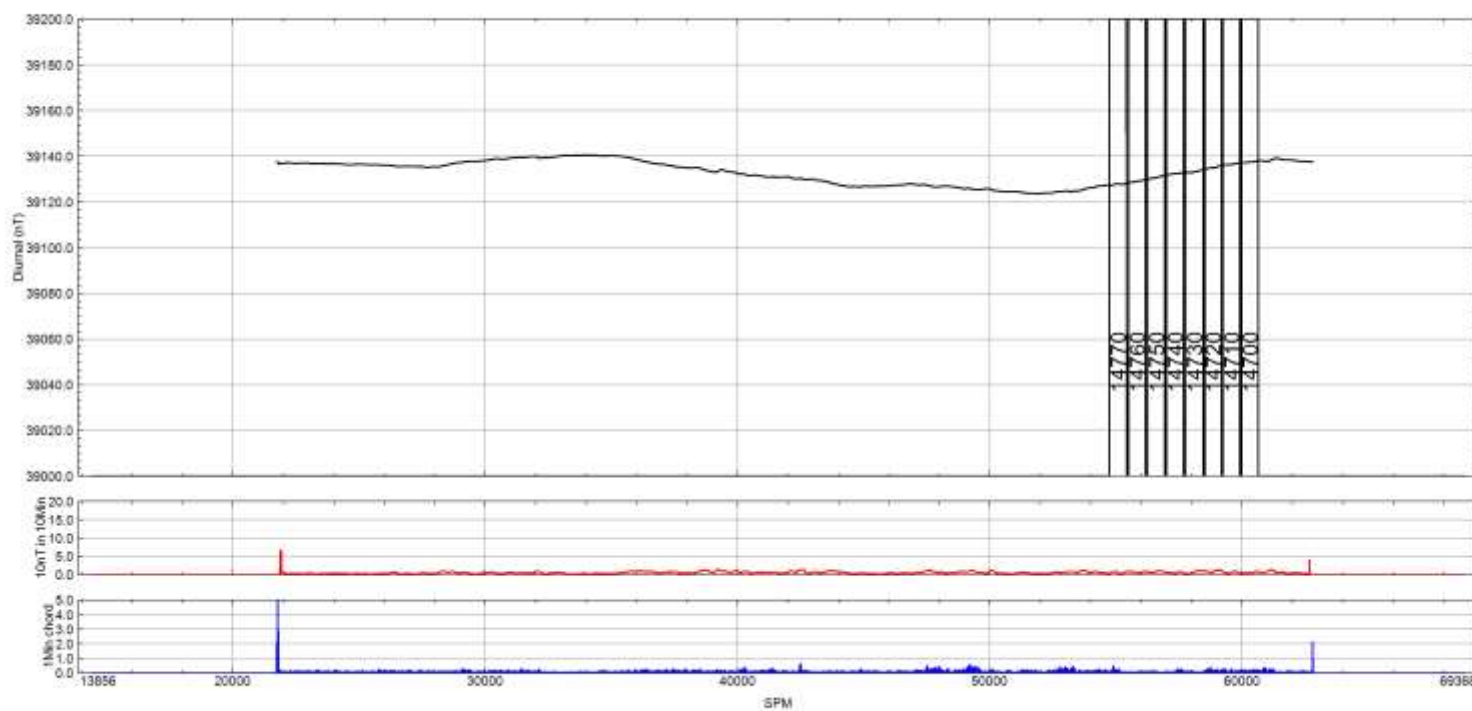
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2021/06/19

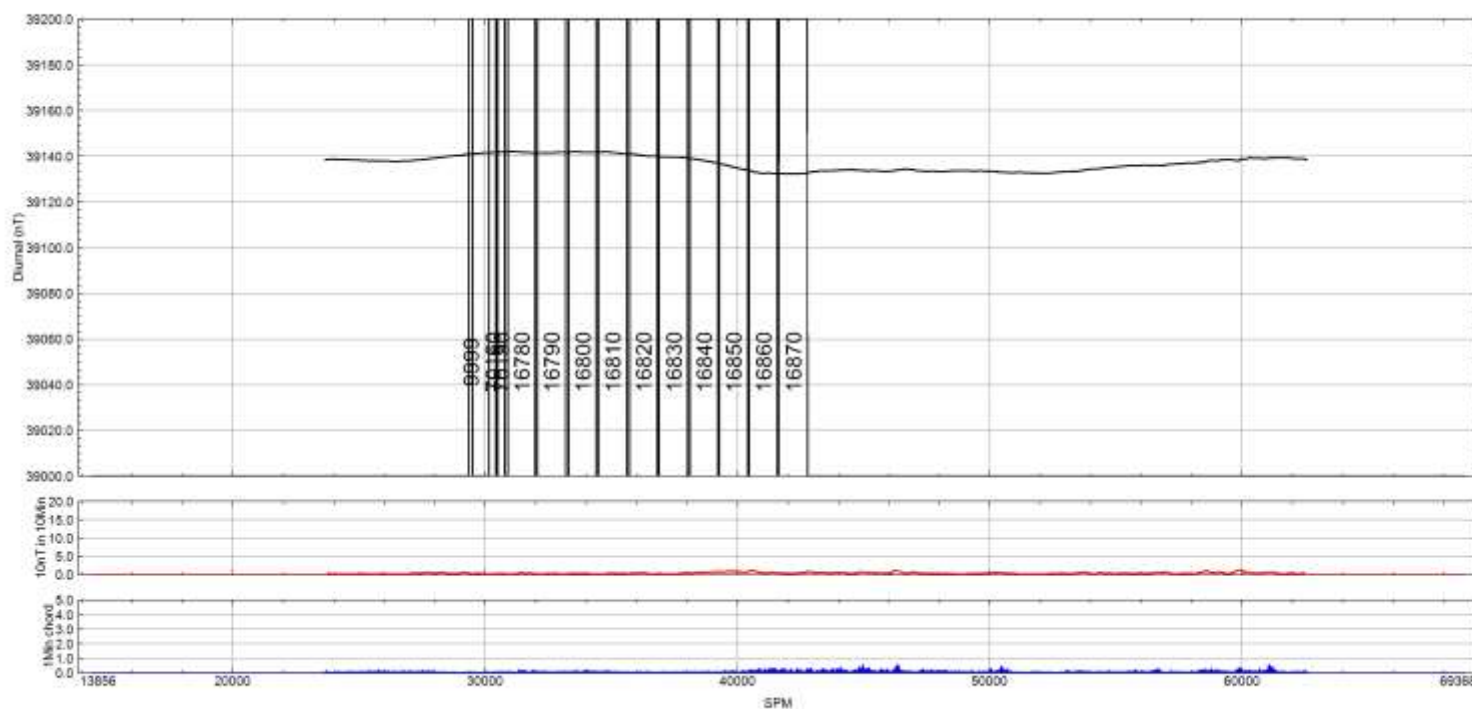
DIURNAL DURING F114, 2021/06/19



database: g:\2585 gnrsw_ga cobar magspec 210130 processing\workspace\Diurnal\gdb linegroup: DF114

2021/06/19

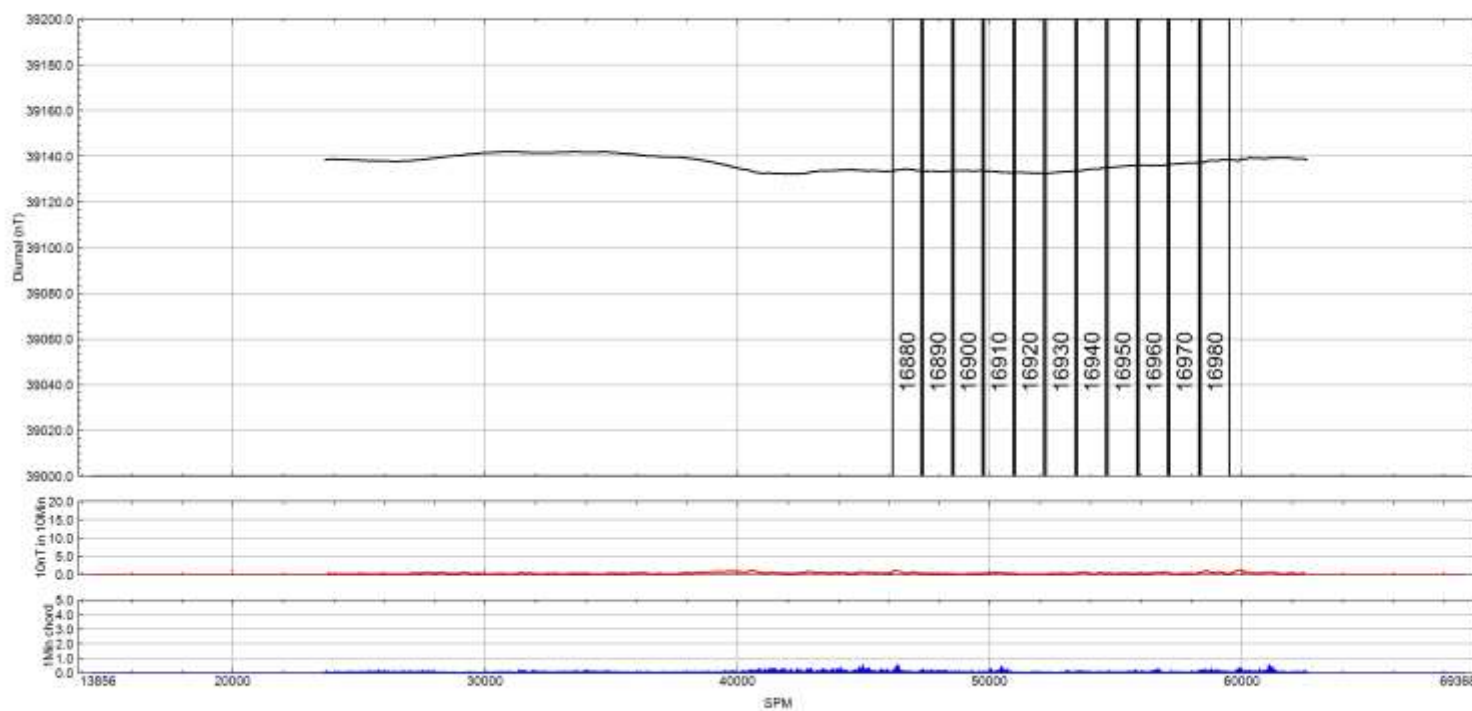
DIURNAL DURING F115, 2021/06/20



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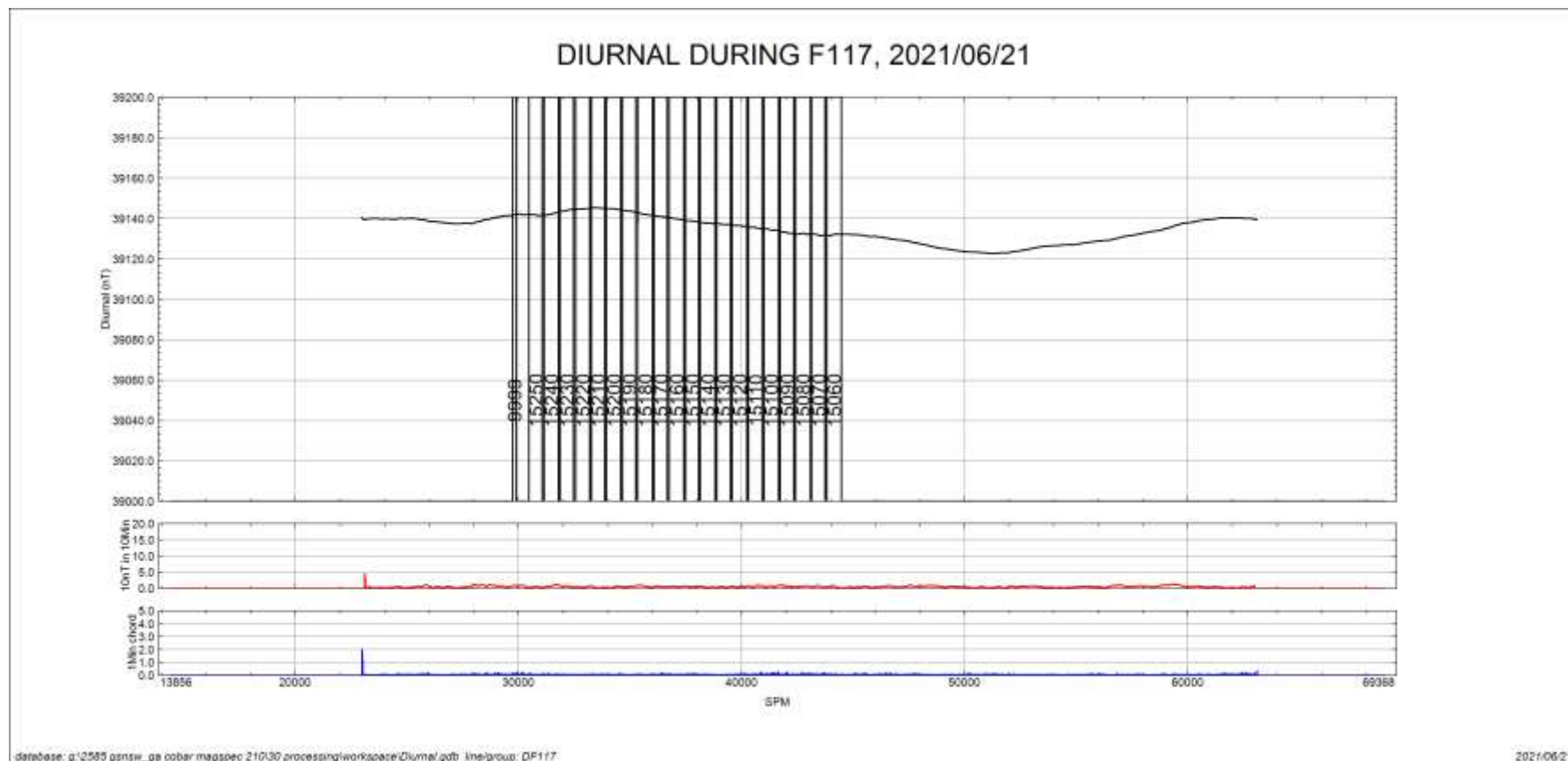
2021/06/20

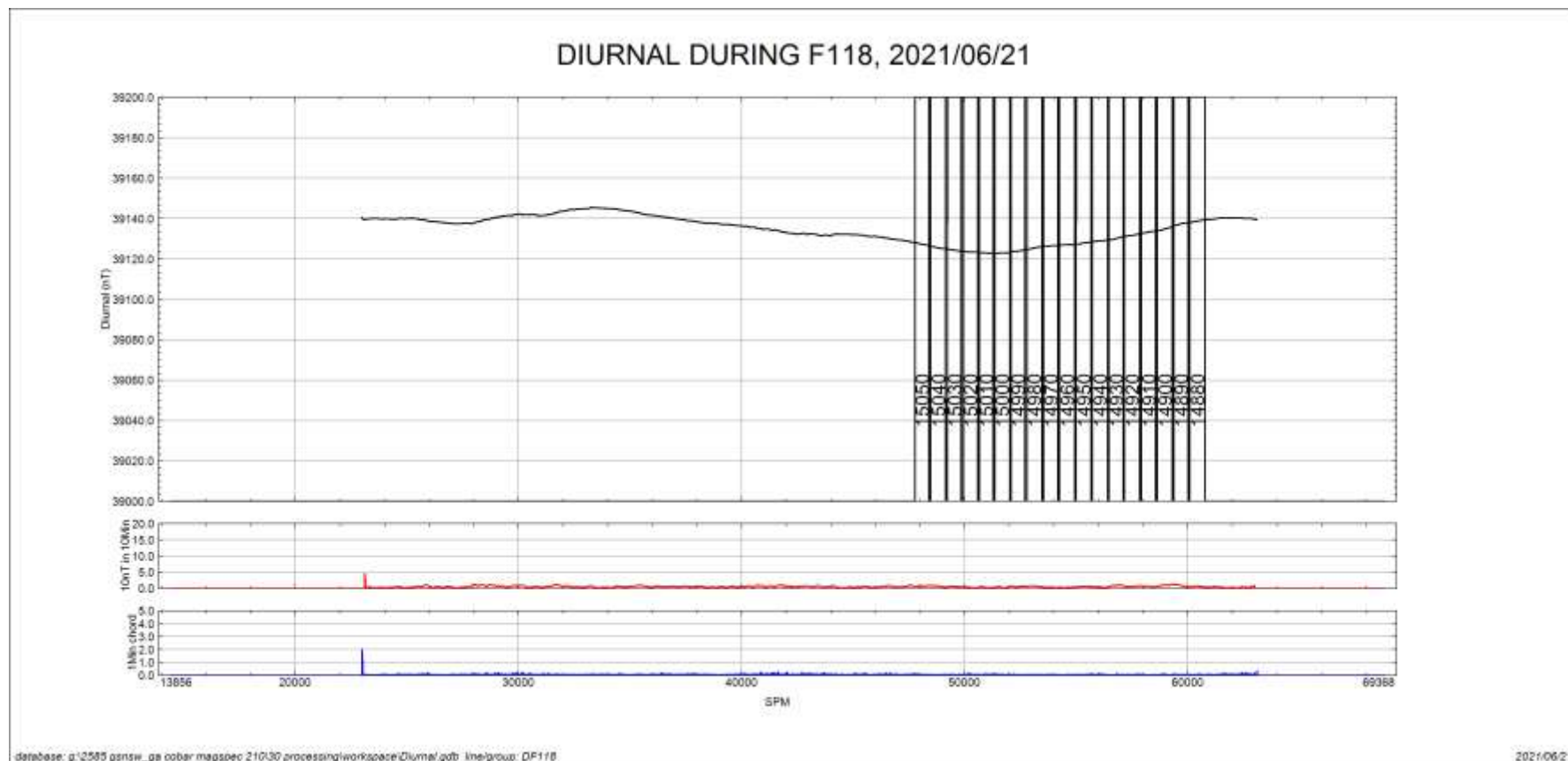
DIURNAL DURING F116, 2021/06/20



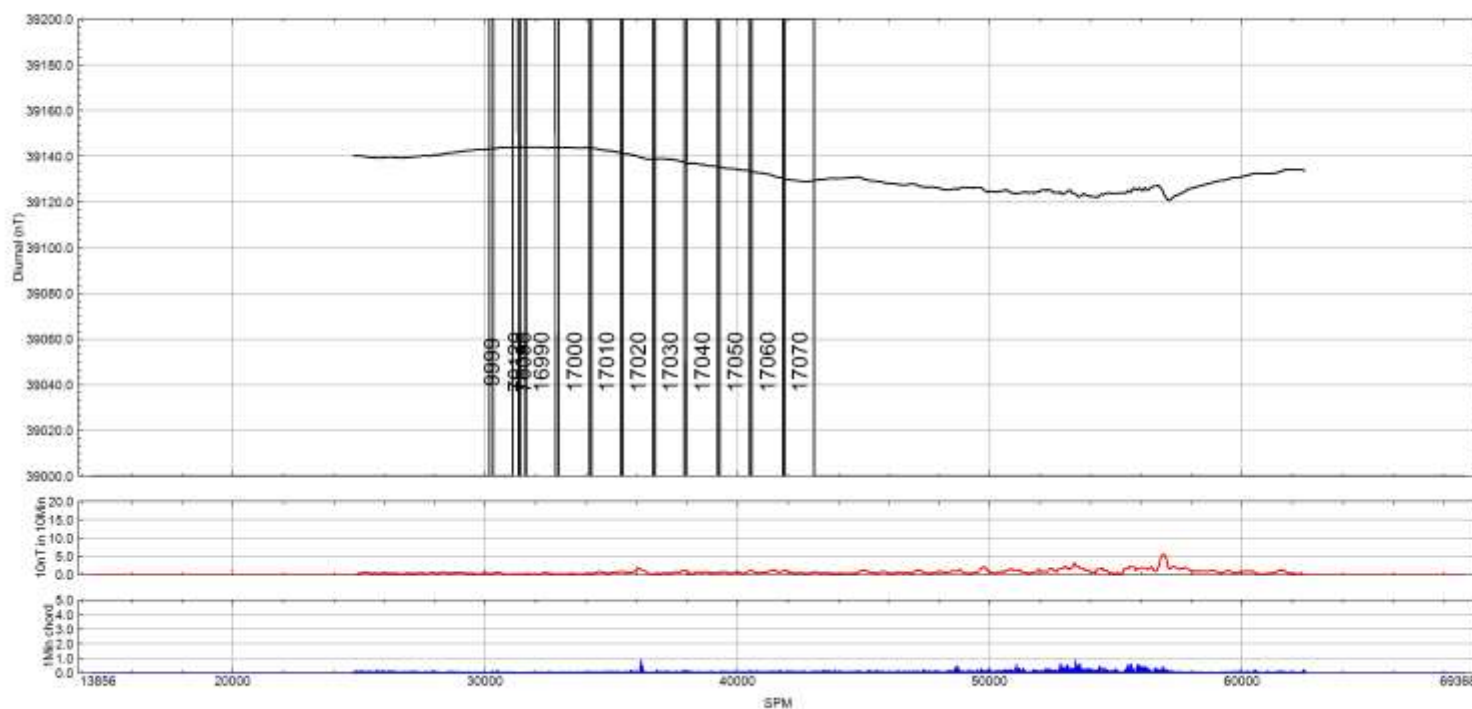
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2021/06/20





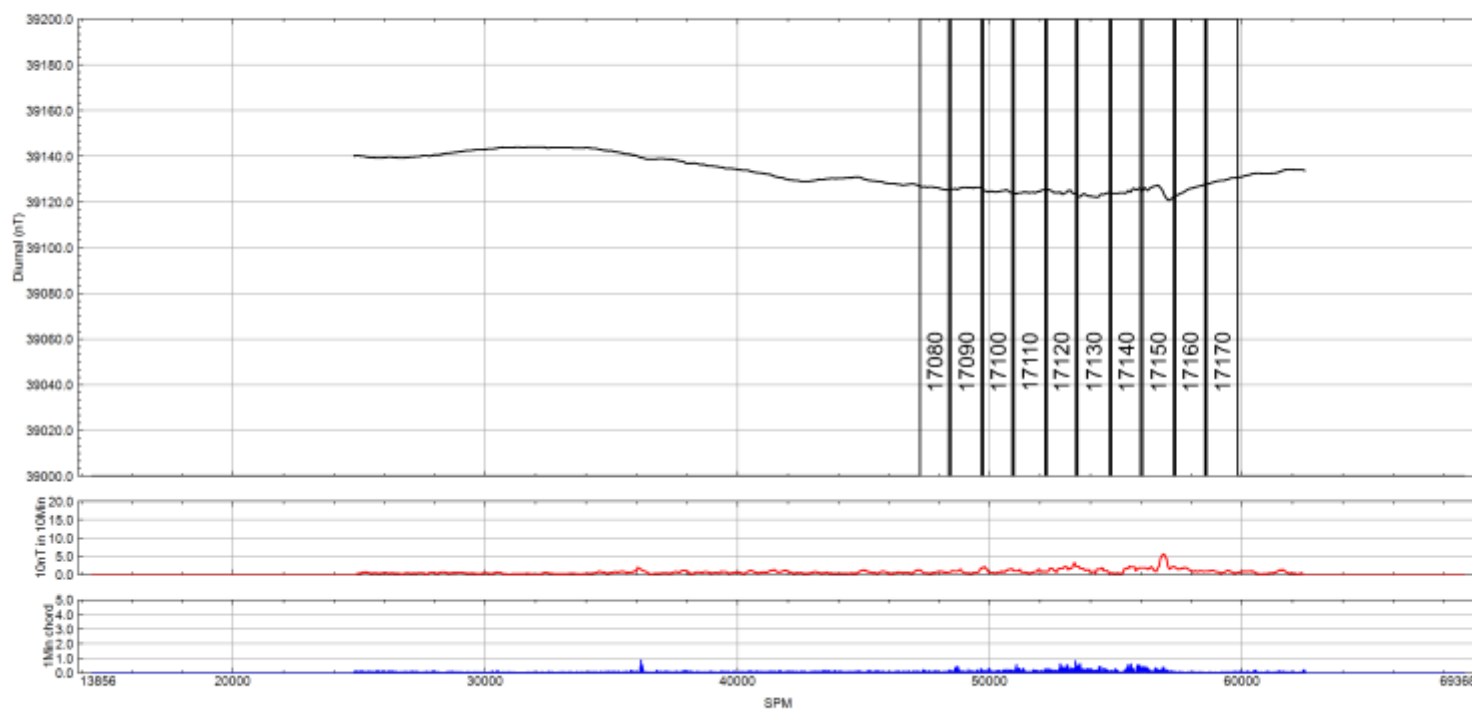
DIURNAL DURING F119, 2021/06/22



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2021/06/22

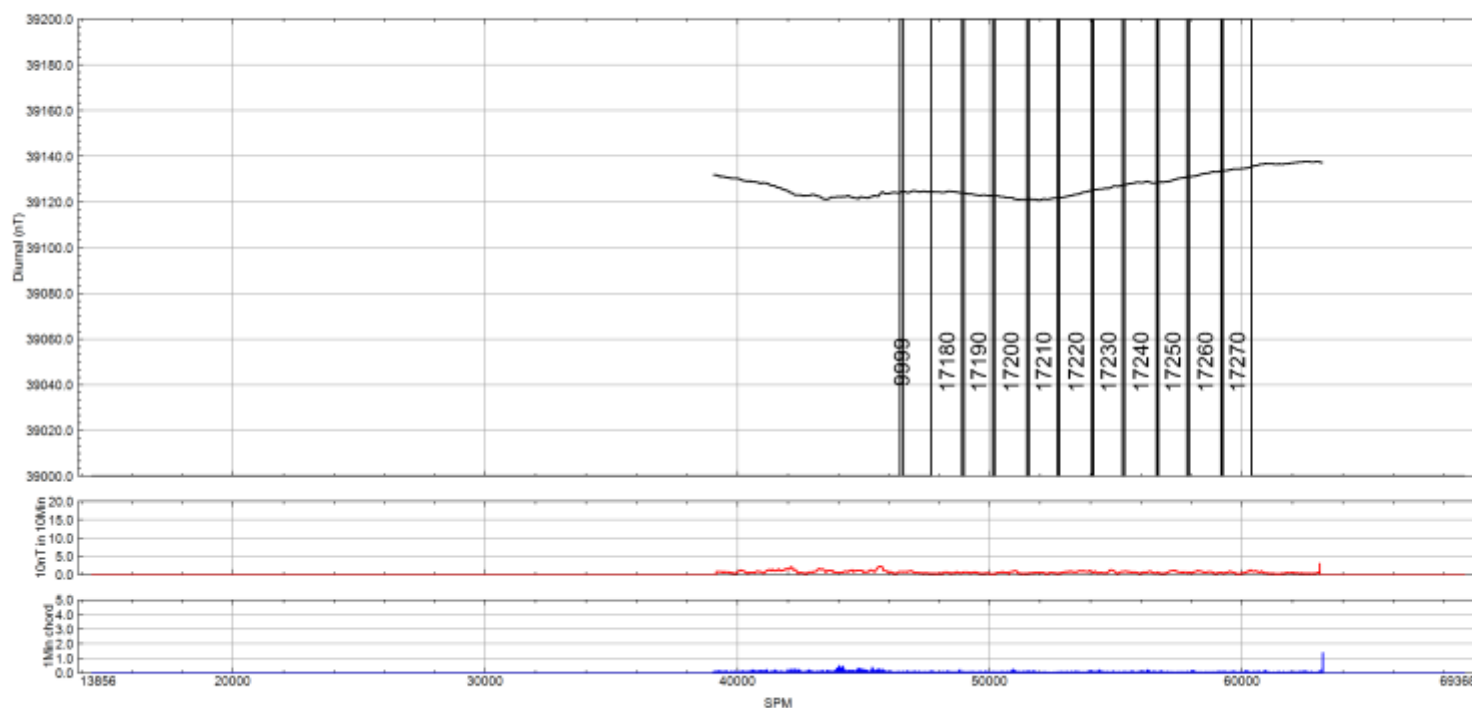
DIURNAL DURING F120, 2021/06/22



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2021/06/22

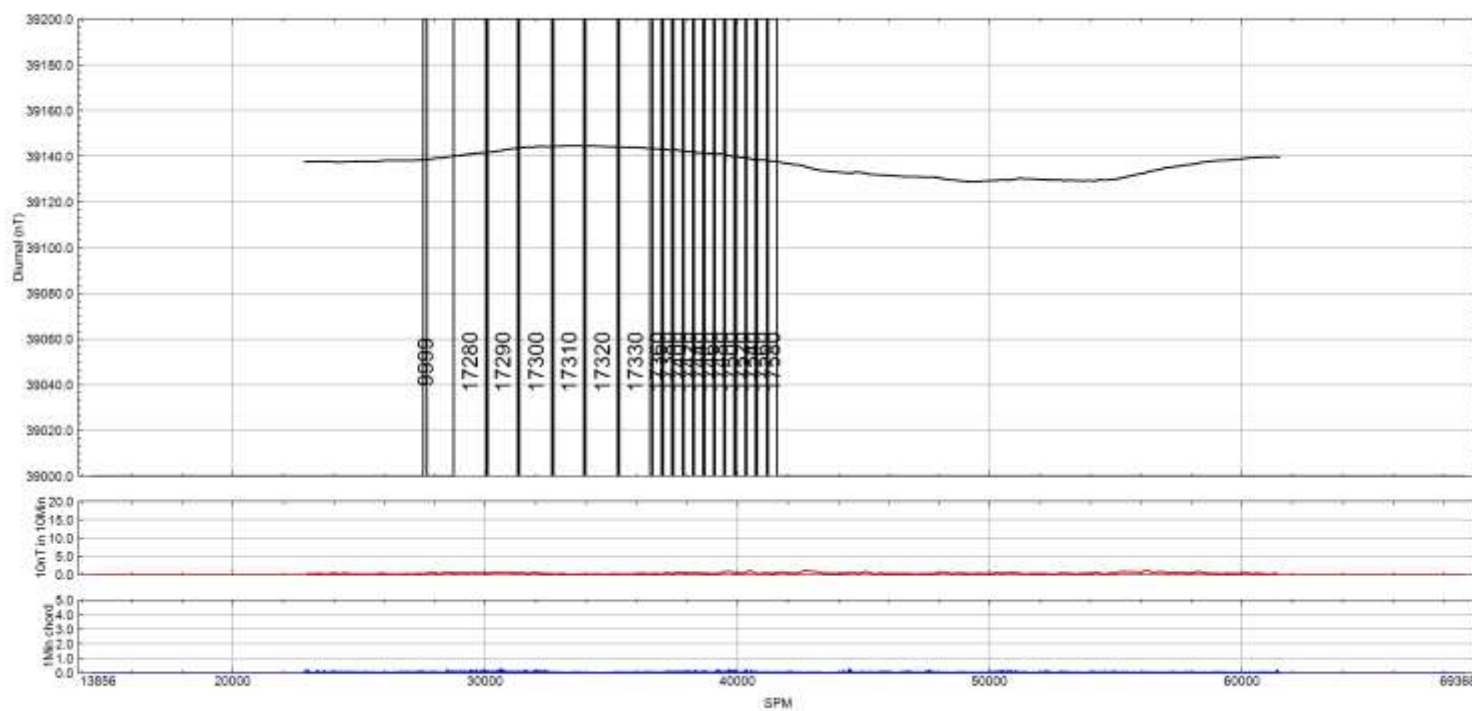
DIURNAL DURING F121, 2021/06/25



database: p:\2585 gsnsw_ga cobar mapspec 210130 processing\workspace\Diurnal\gdb_line\group: DF121

2021/06/25

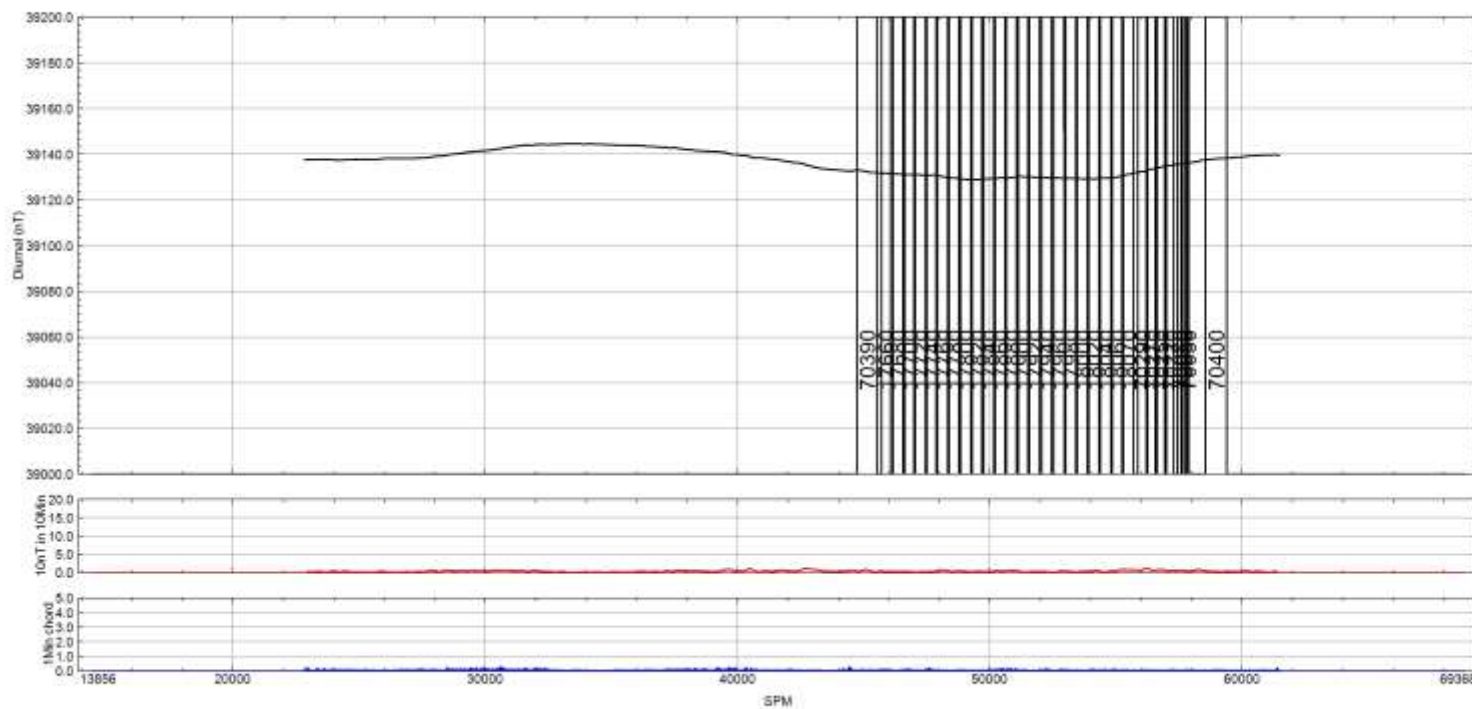
DIURNAL DURING F122, 2021/06/26



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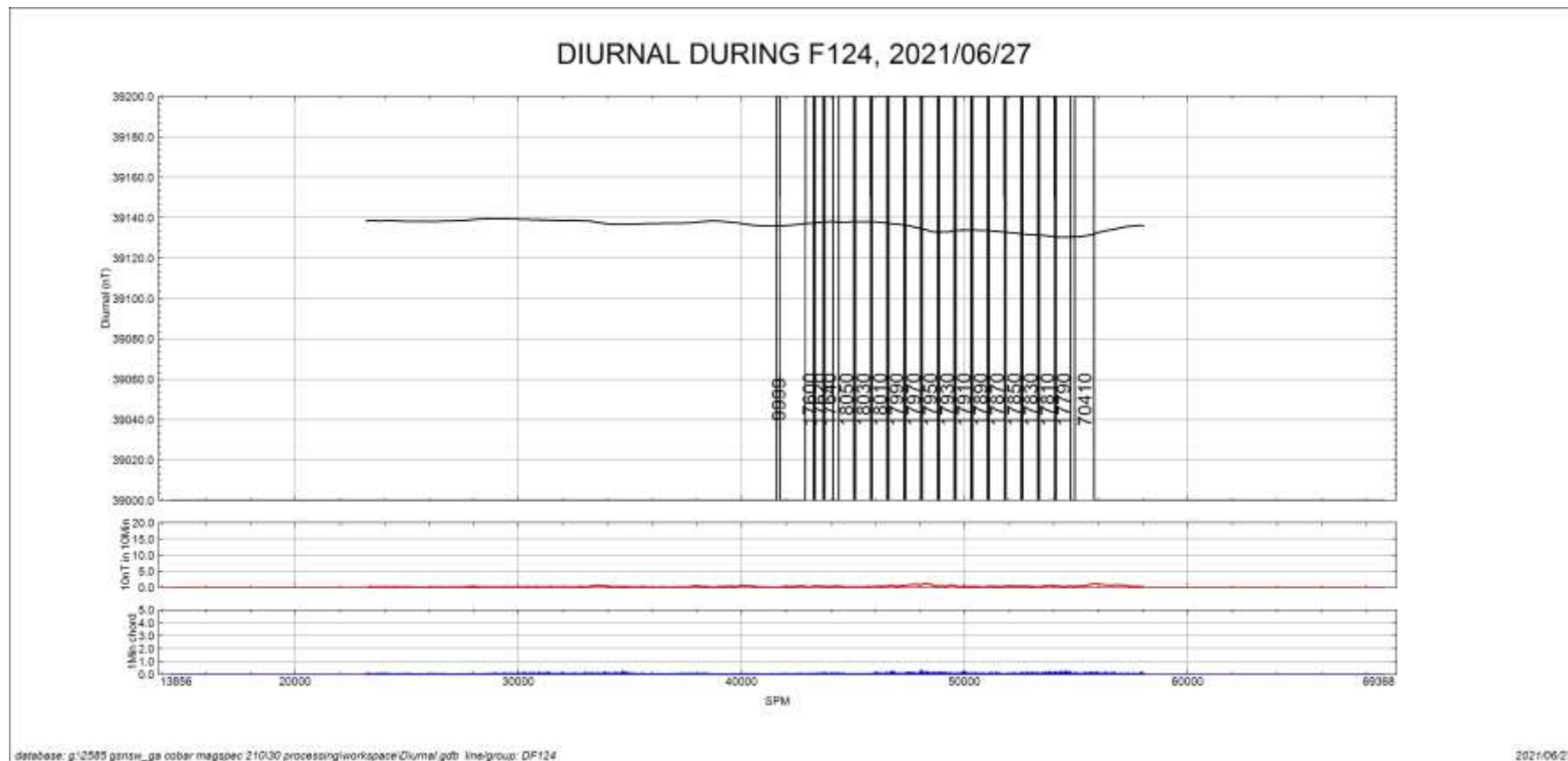
2021/06/26

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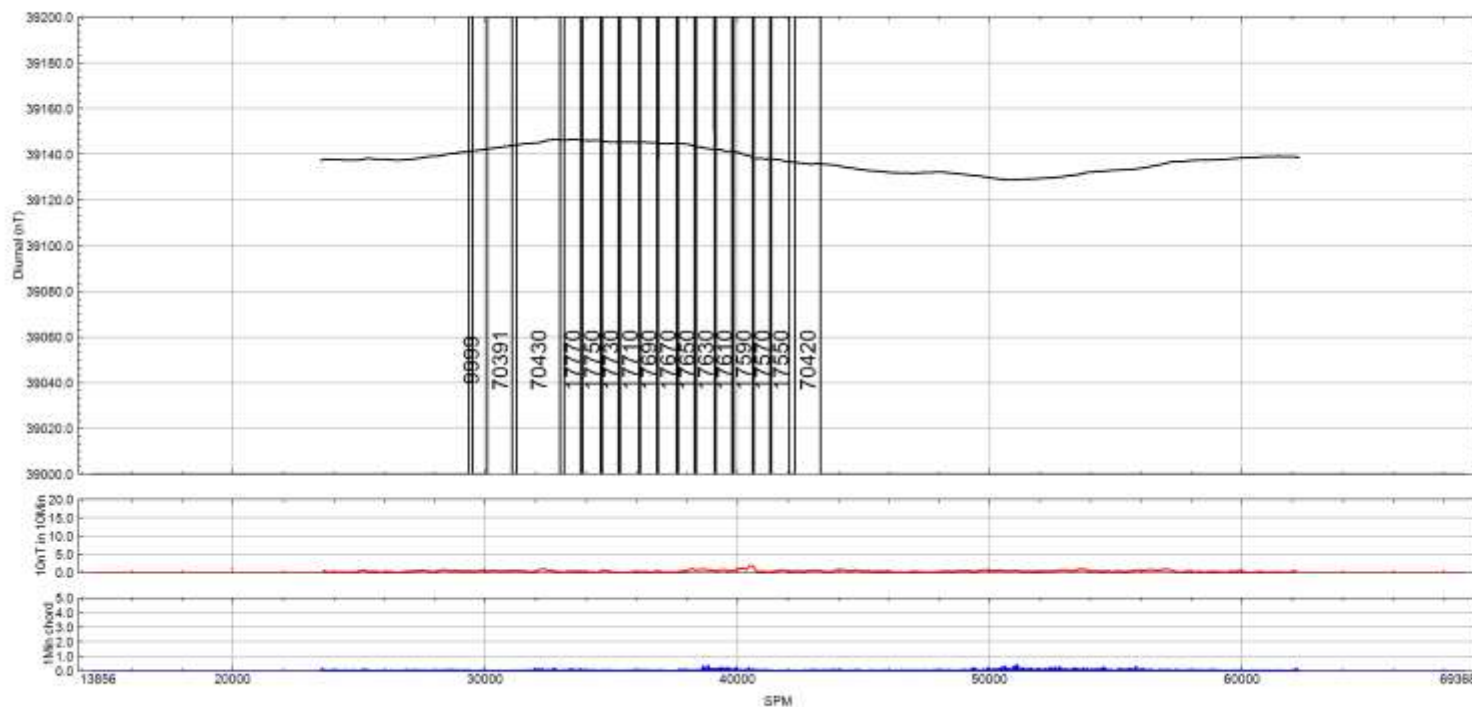


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2021/06/26



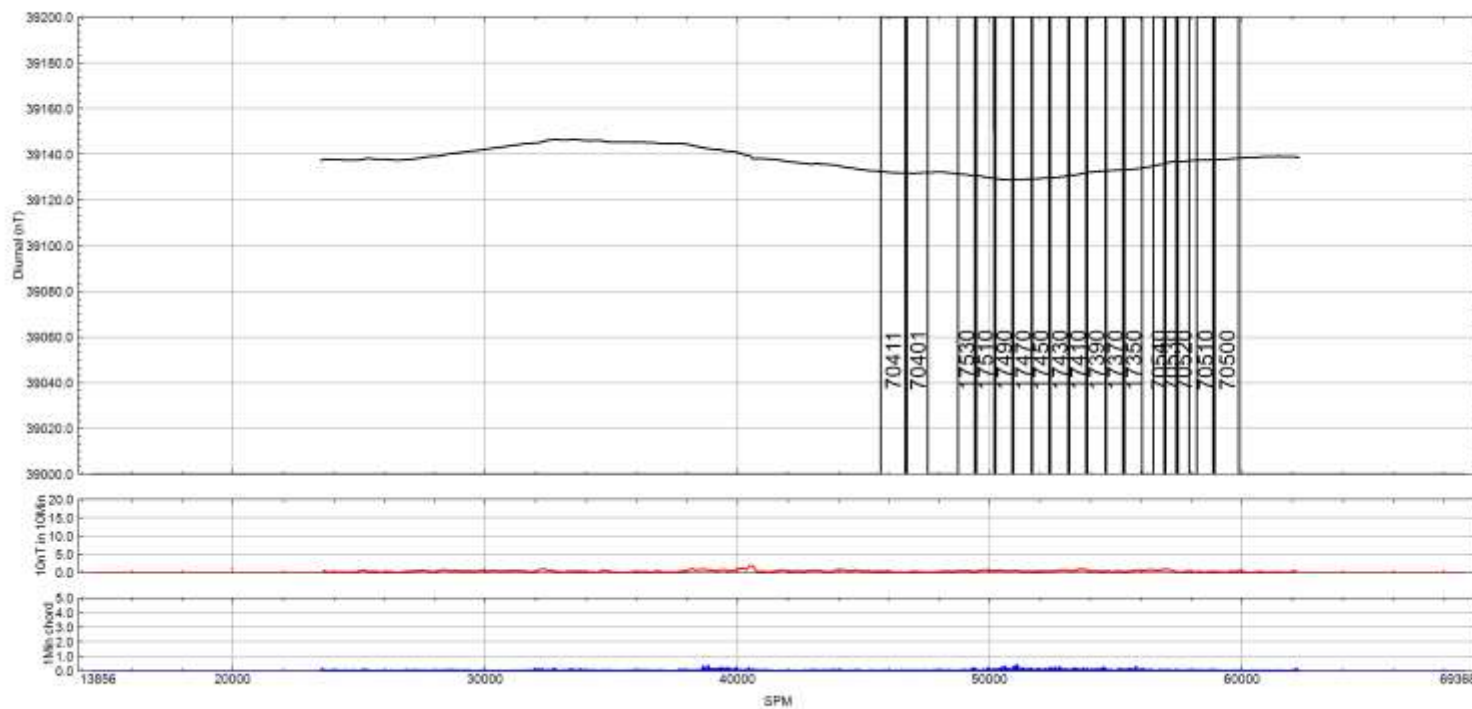
DIURNAL DURING F125, 2021/06/28



database: g:\2585 gnrsw_ga cobar magspec 210130 processing\workspace\Diurnal\gdb linegroup: DF125

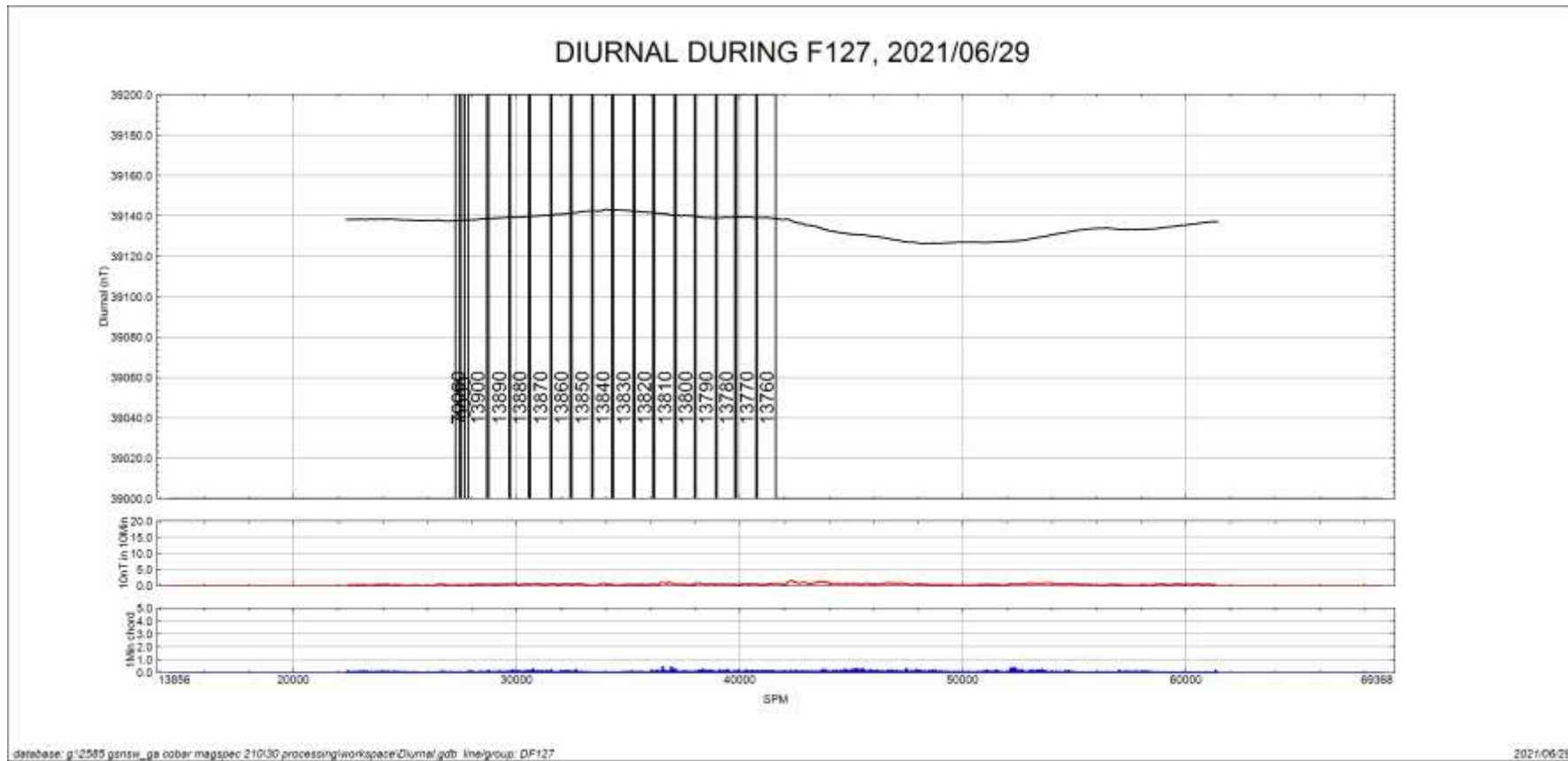
2021/06/28

DIURNAL DURING F126, 2021/06/28

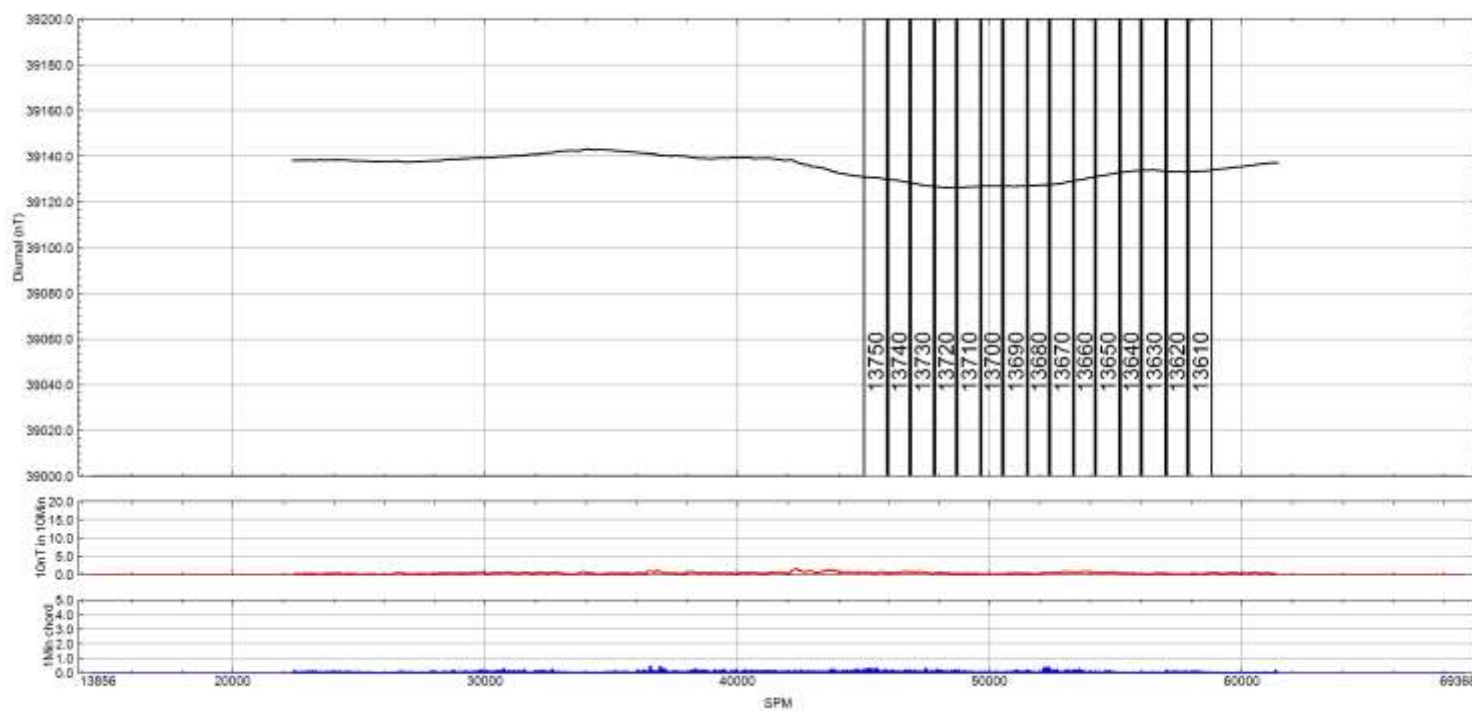


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2021/06/28



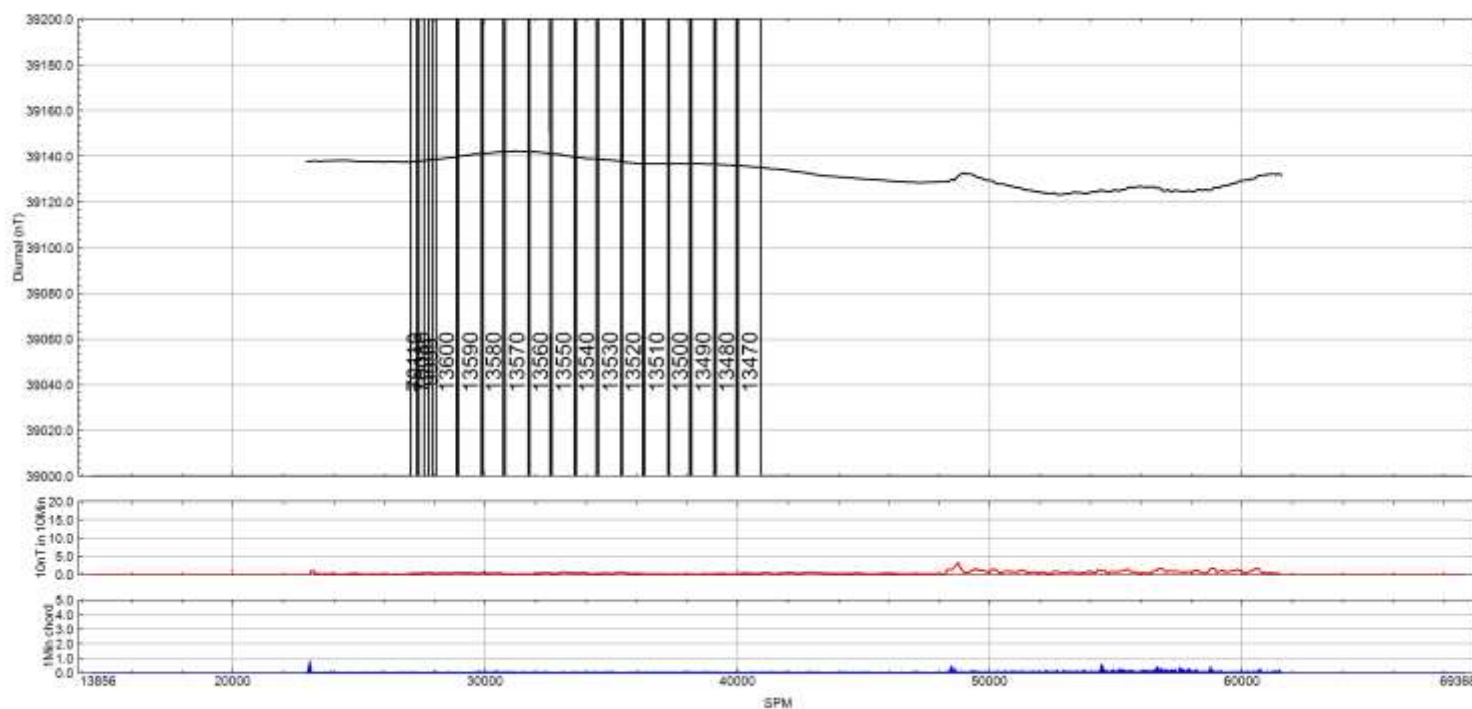
DIURNAL DURING F128, 2021/06/29

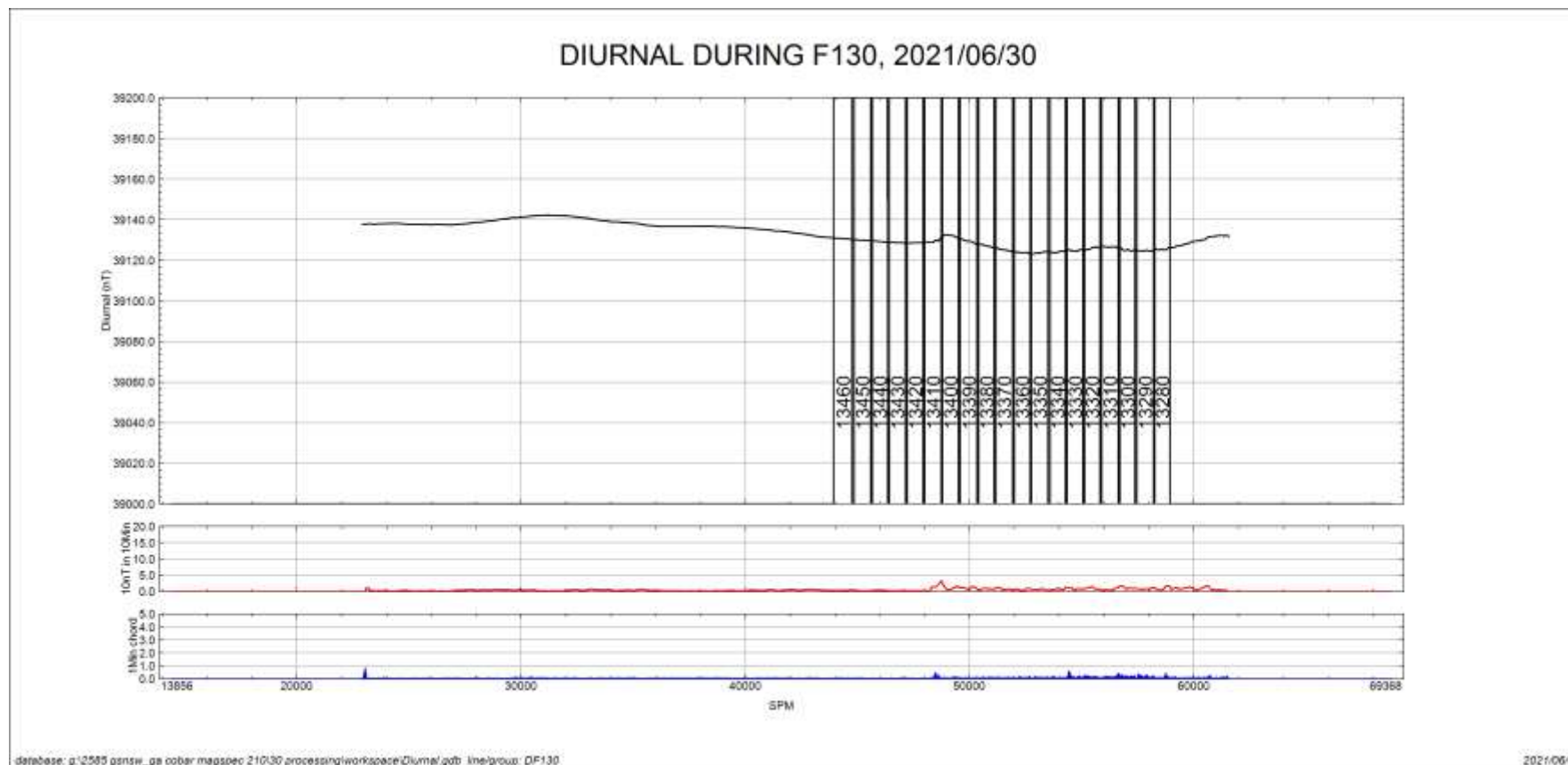


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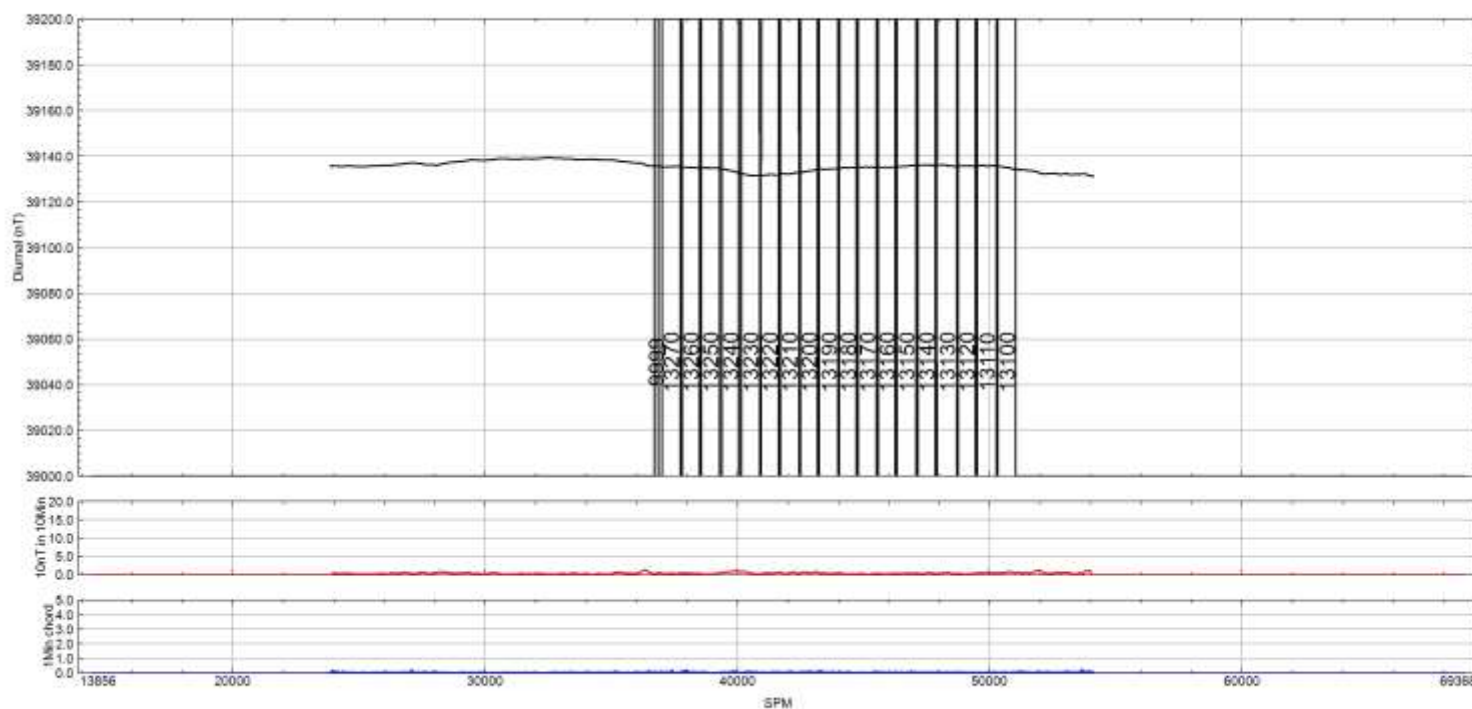
2021/06/29

DIURNAL DURING F129, 2021/06/30





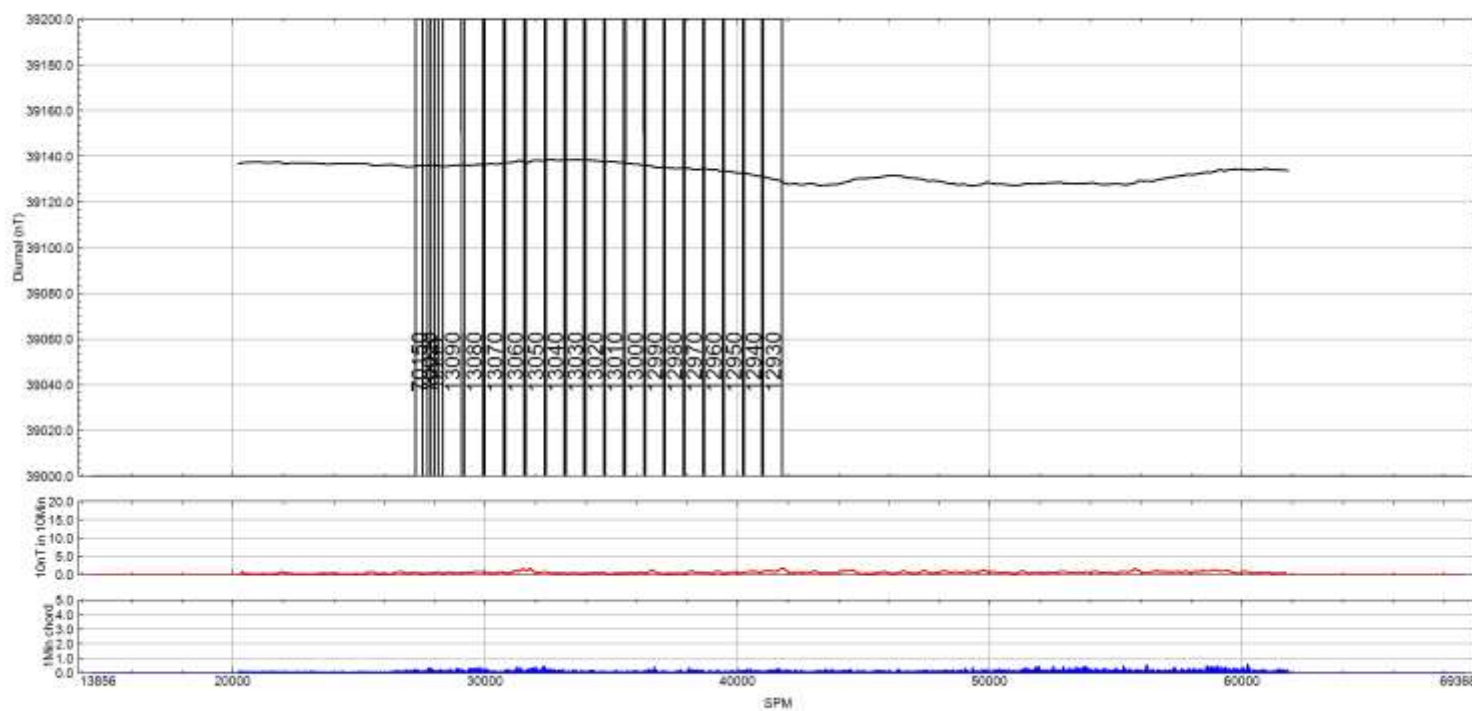
DIURNAL DURING F131, 2021/07/02



database: g:\2585 gnrsw_ga cobar magspec 210130 processing\workspace\Diurnal\gdb linegroup: DF131

2021/07/02

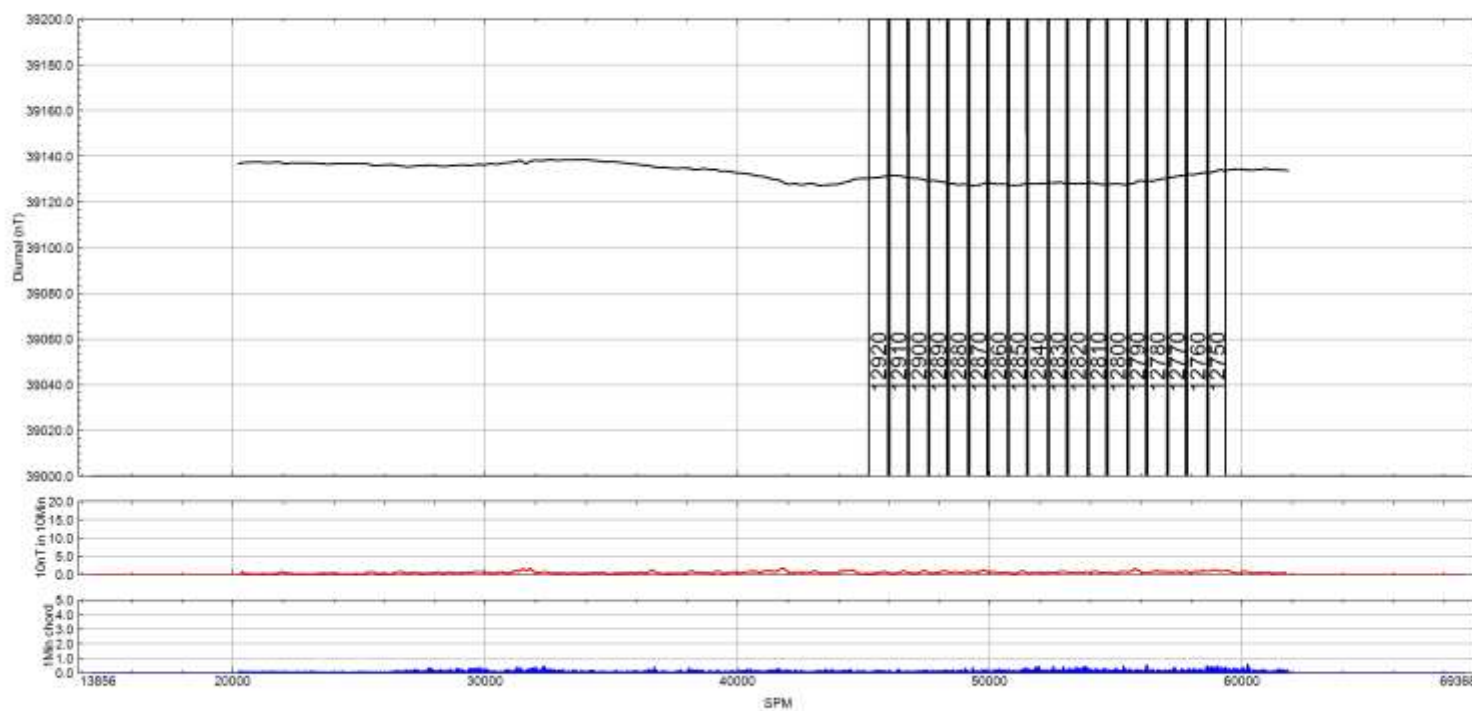
DIURNAL DURING F132, 2021/07/03



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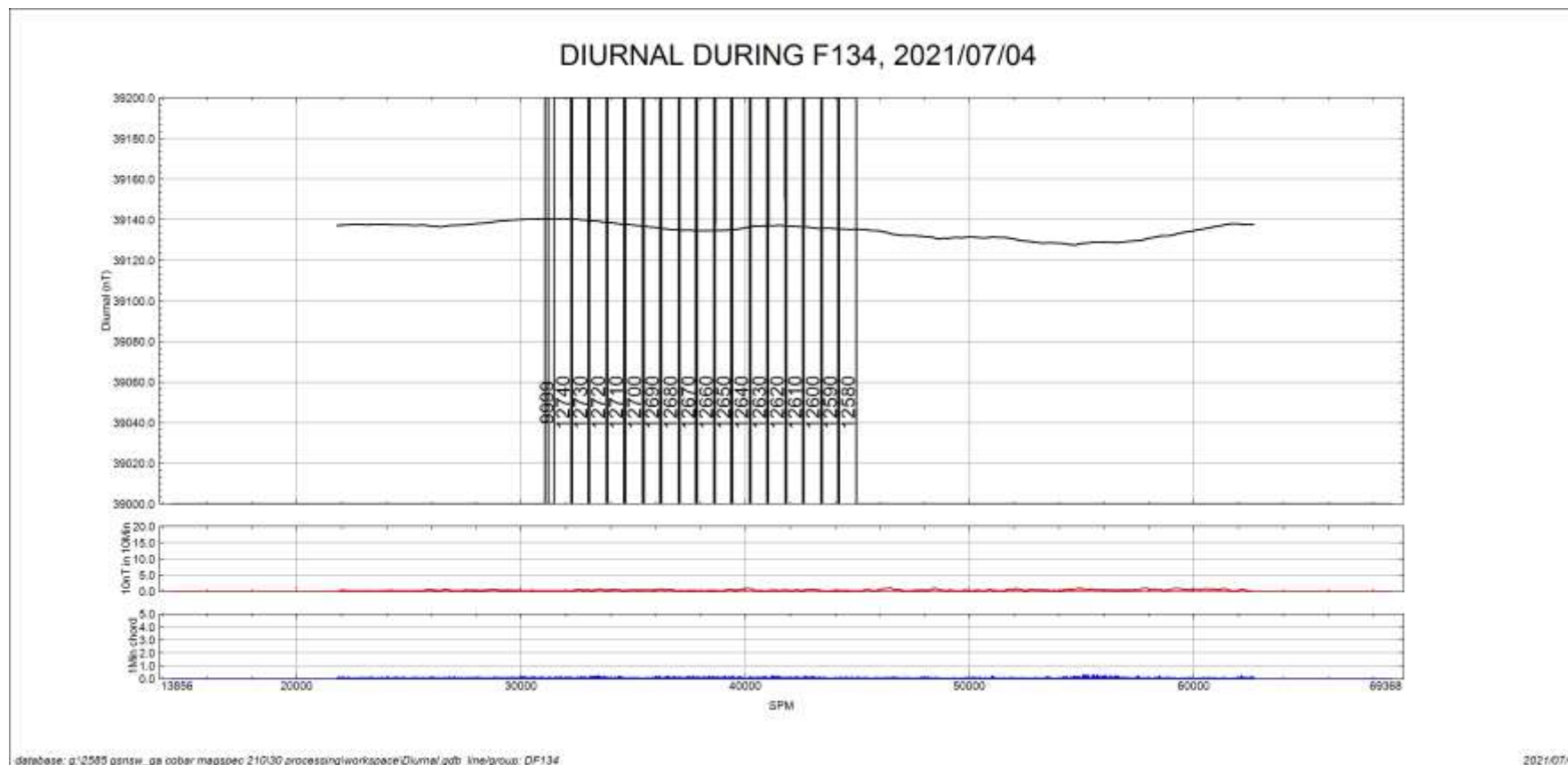
2021/07/03

DIURNAL DURING F133, 2021/07/03

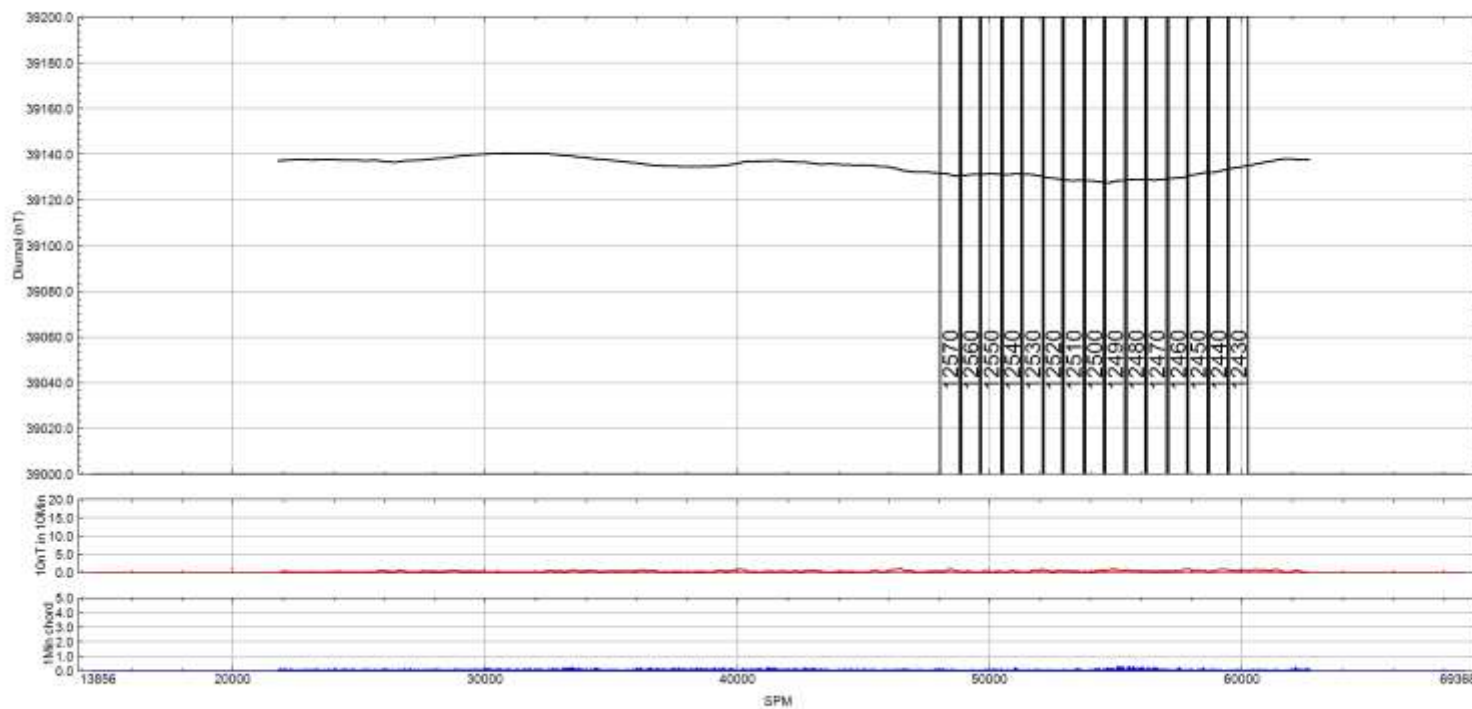


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2021/07/03



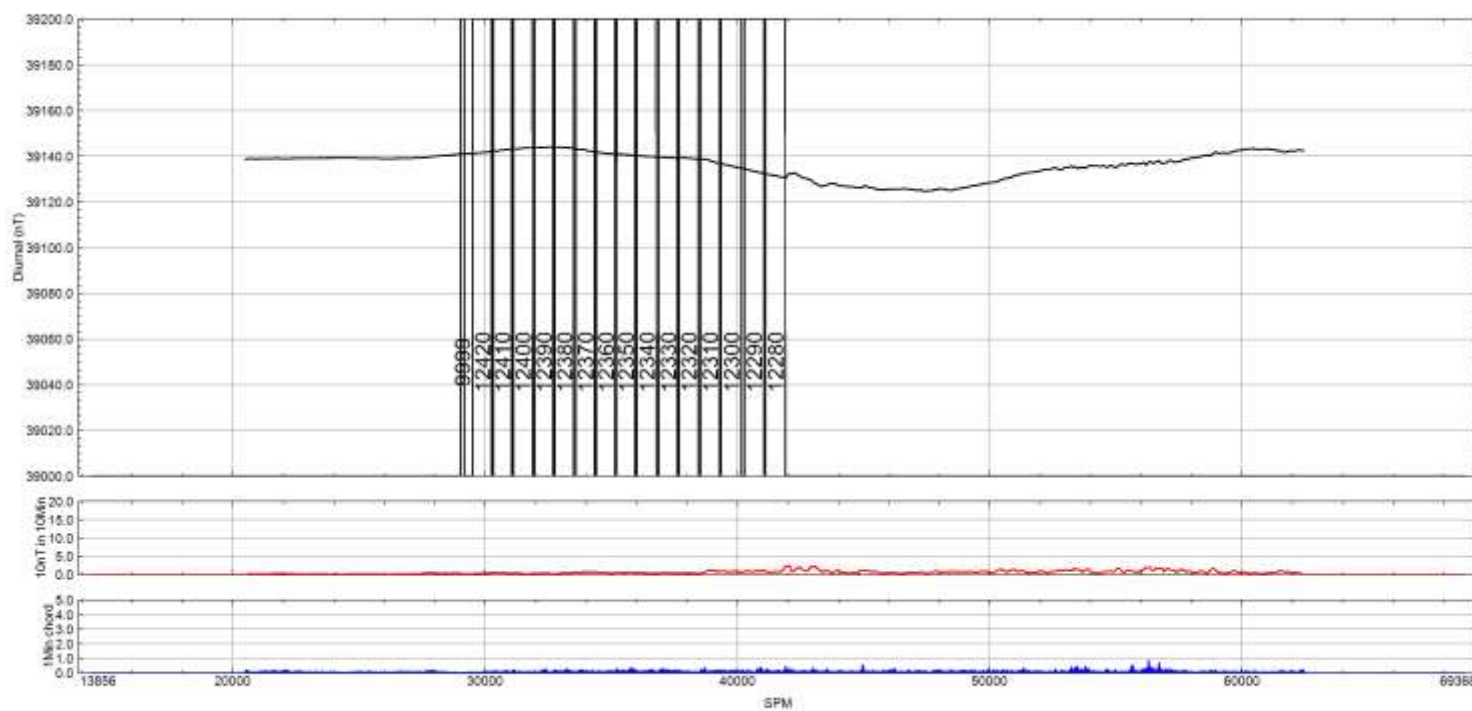
DIURNAL DURING F135, 2021/07/04



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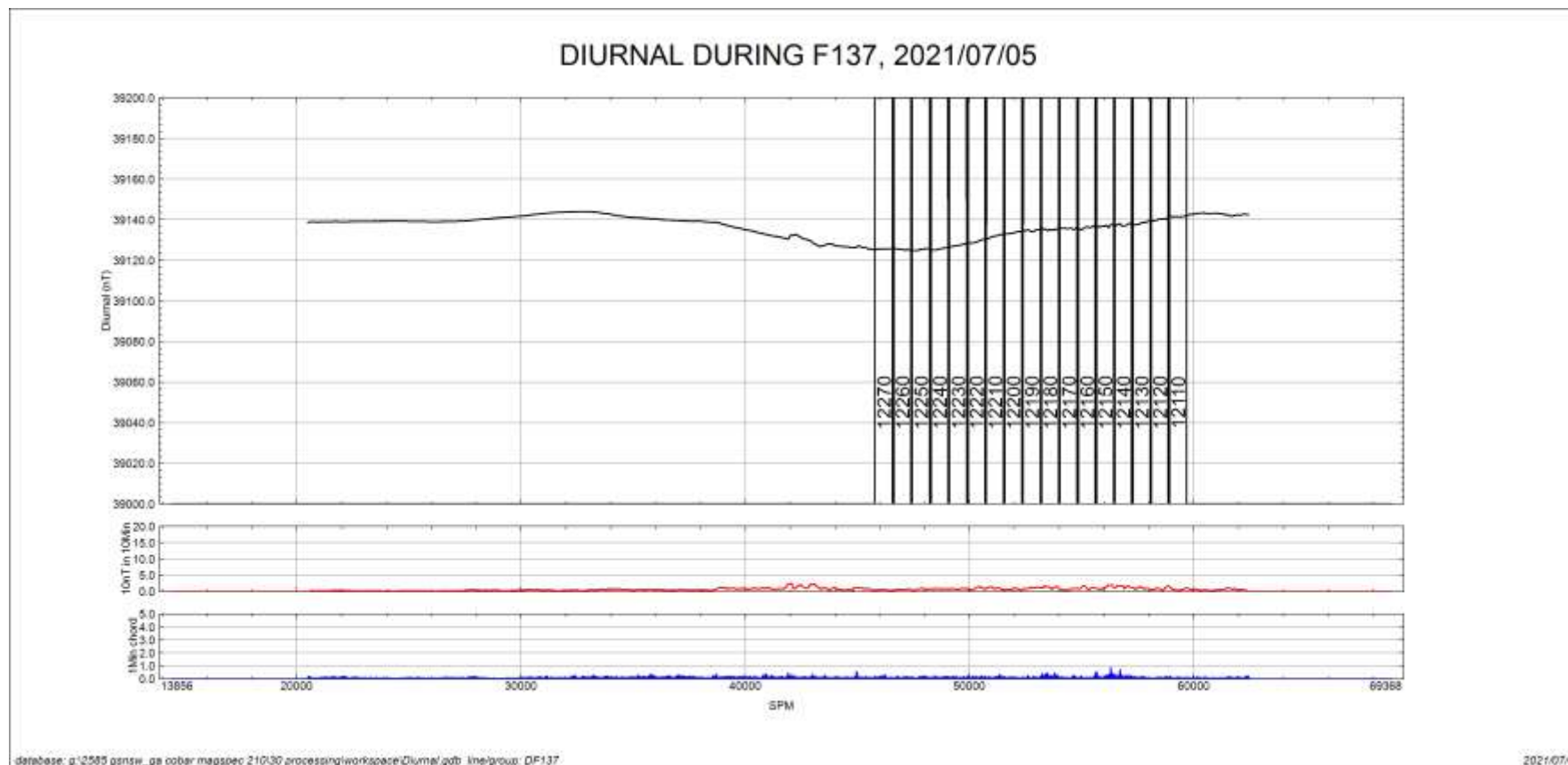
2021/07/04

DIURNAL DURING F136, 2021/07/05

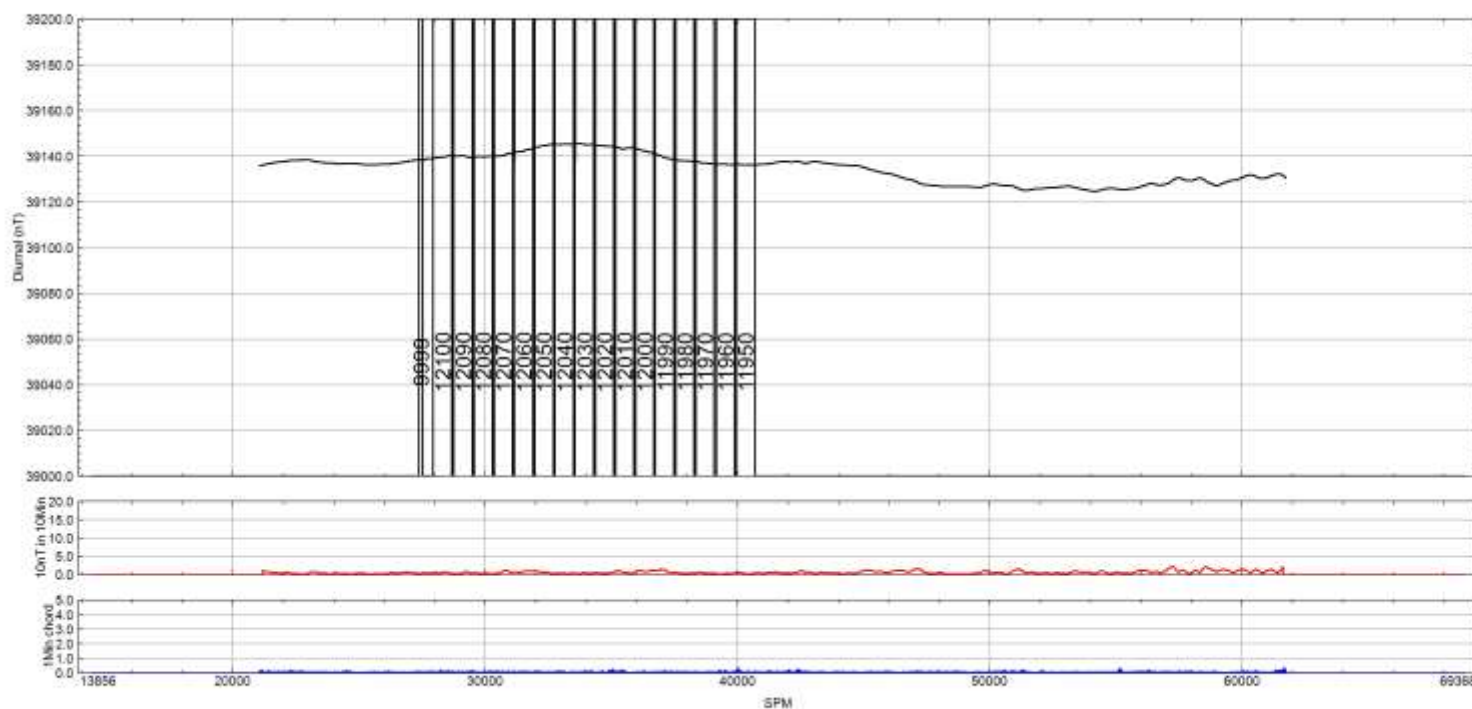


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2021/07/05



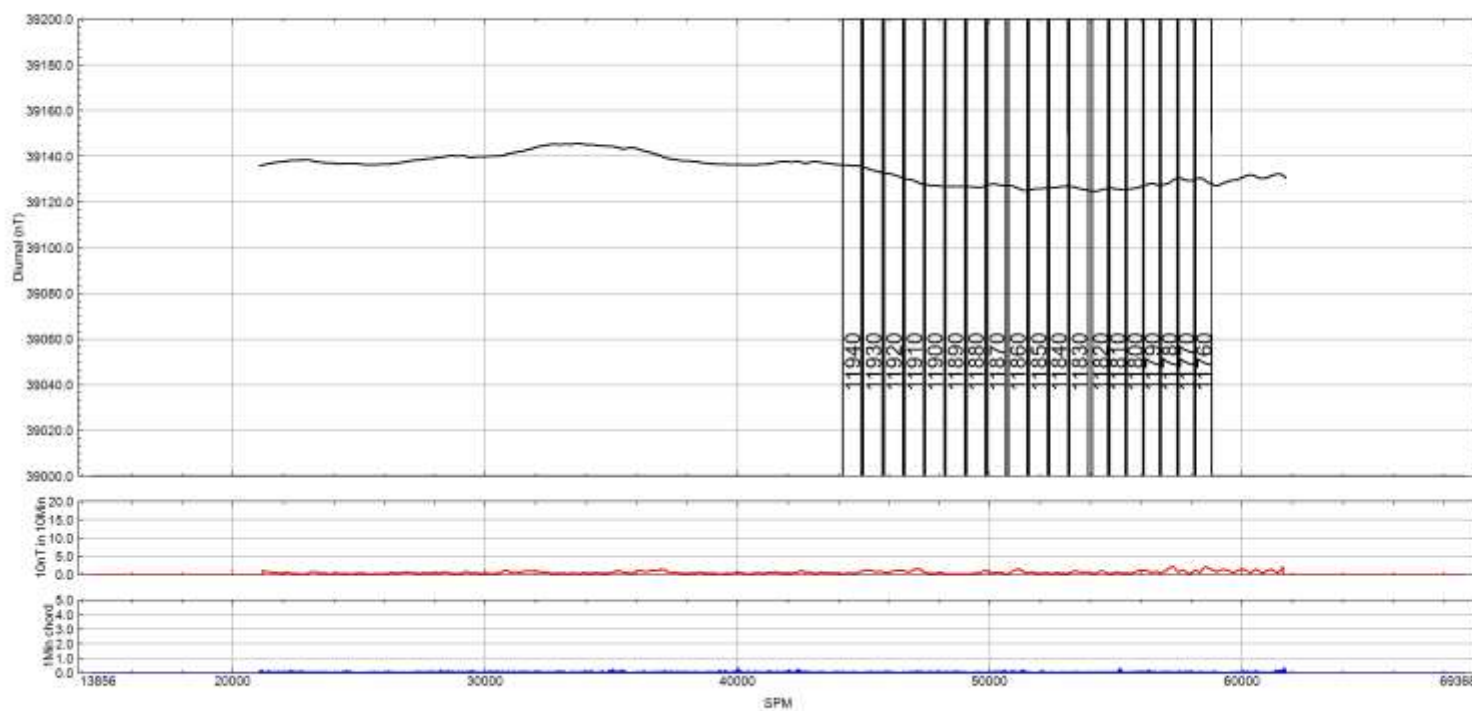
DIURNAL DURING F138, 2021/07/06



database: g:\2585 gnrsw_ga cobar magspec 210130 processing\workspace\Diurnal\gdb linegroup: DF138

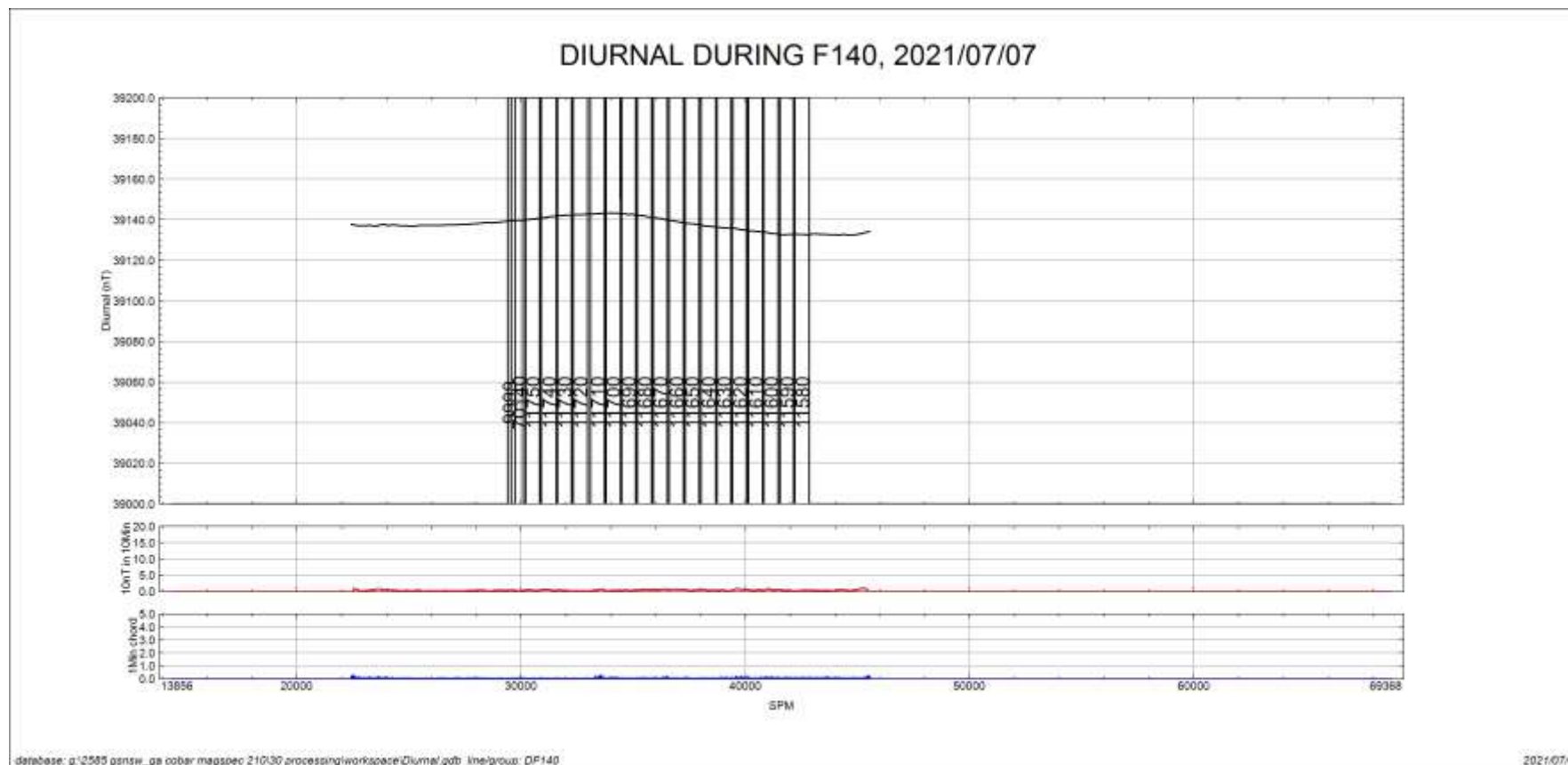
2021/07/06

DIURNAL DURING F139, 2021/07/06



database: g:\2585 gnrsw_ga cobar magspec 210130 processing\workspace\Diurnal\gdb linegroup: DF139

2021/07/06

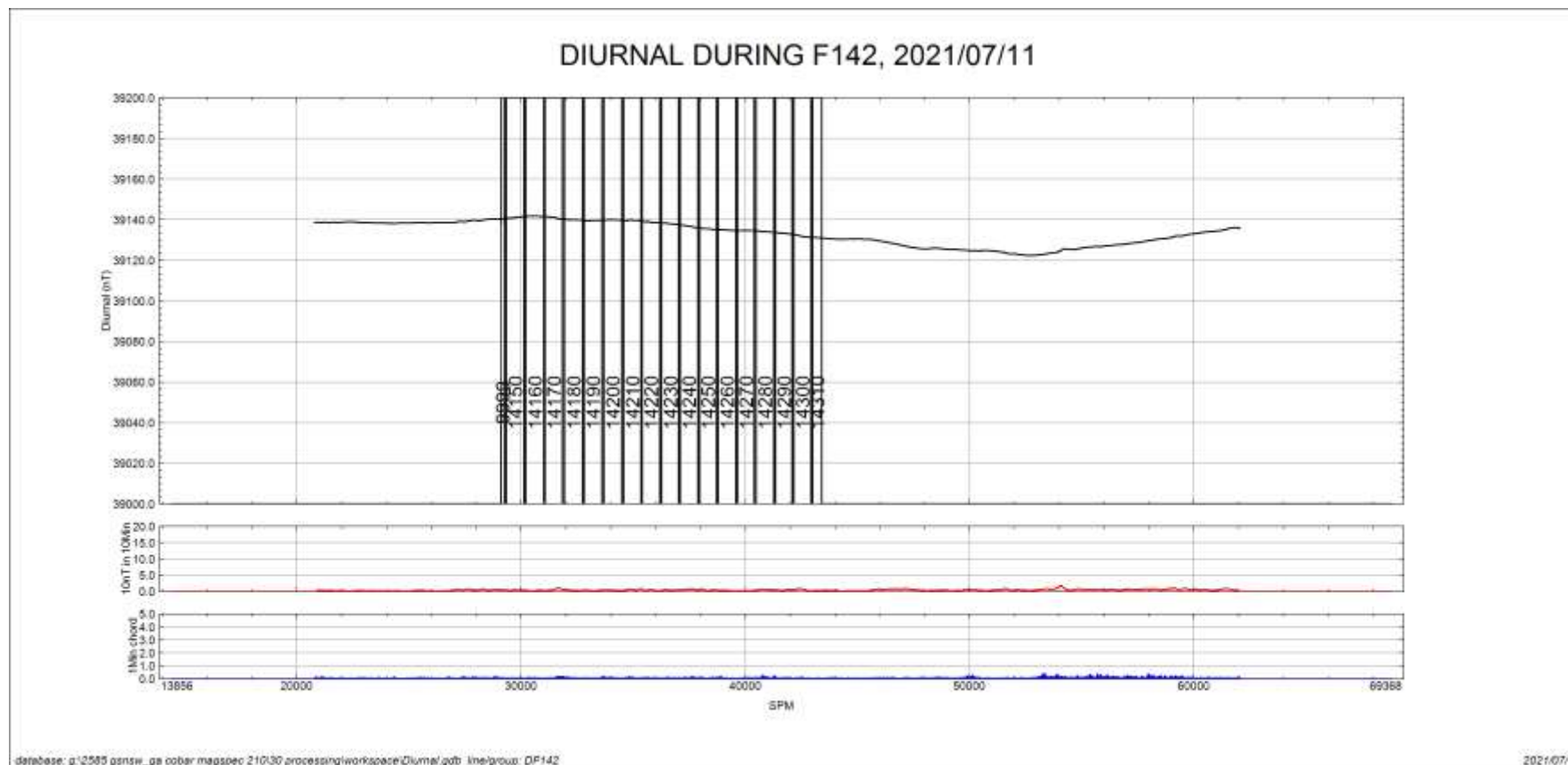


DIURNAL DURING F141, 2021/07/10

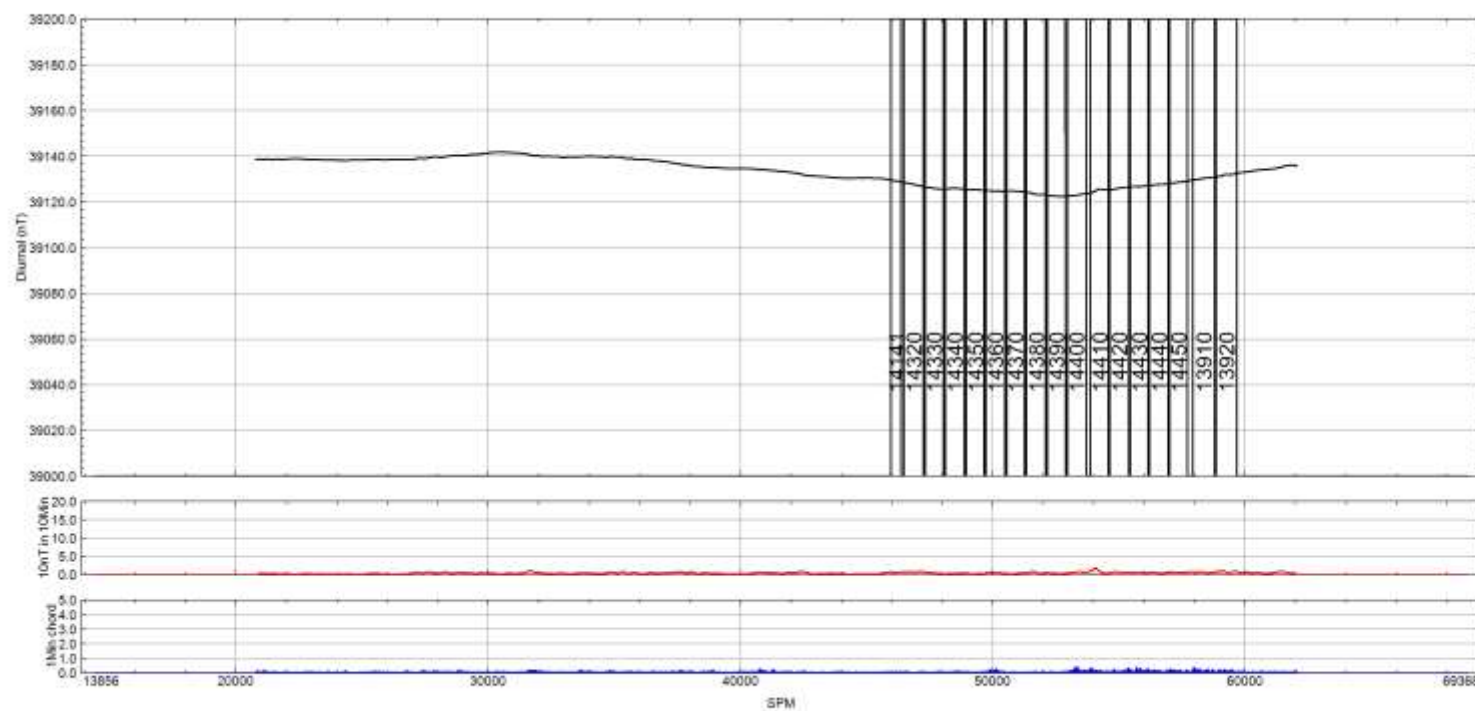


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2021/07/10



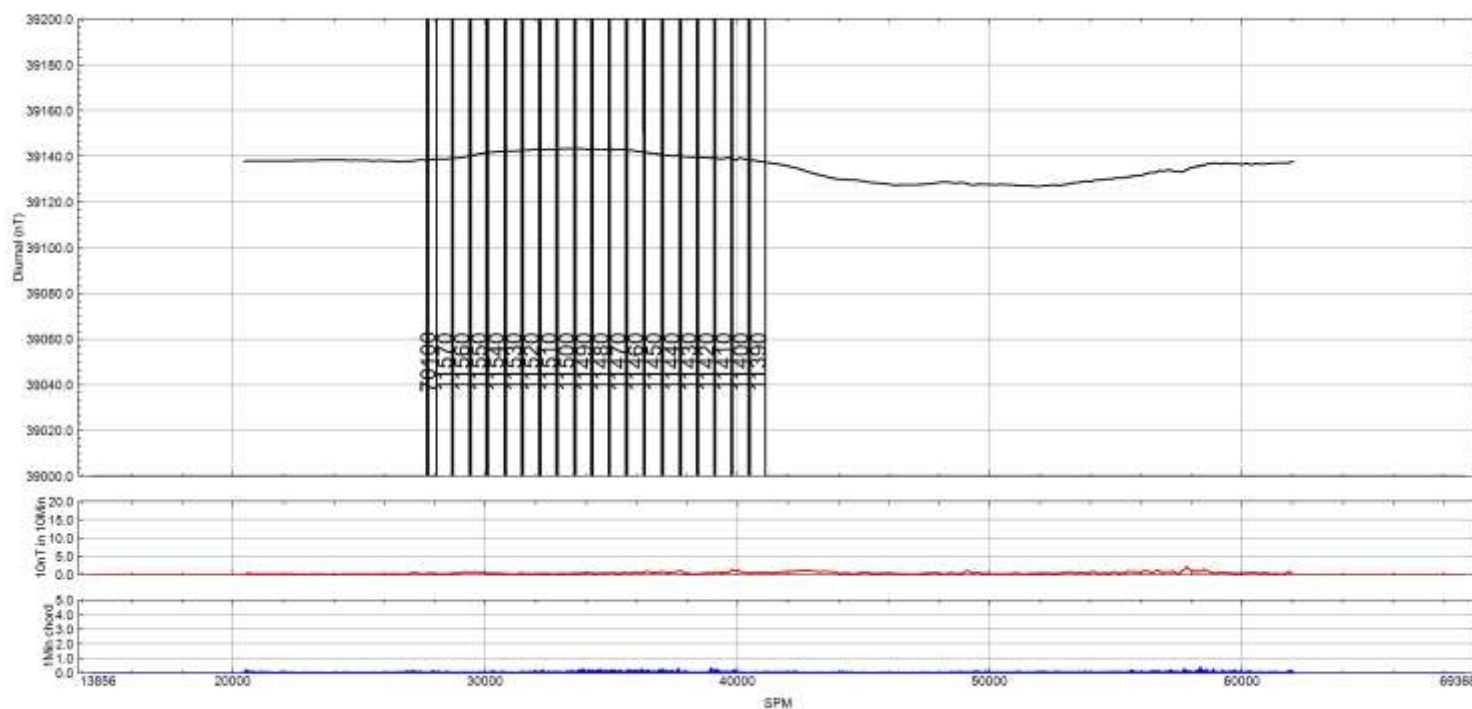
DIURNAL DURING F143, 2021/07/11



database: g:\2585\gensw_ga\cobar\magspec\210130\processing\workspace\Diurnal\gdb linegroup: DF143

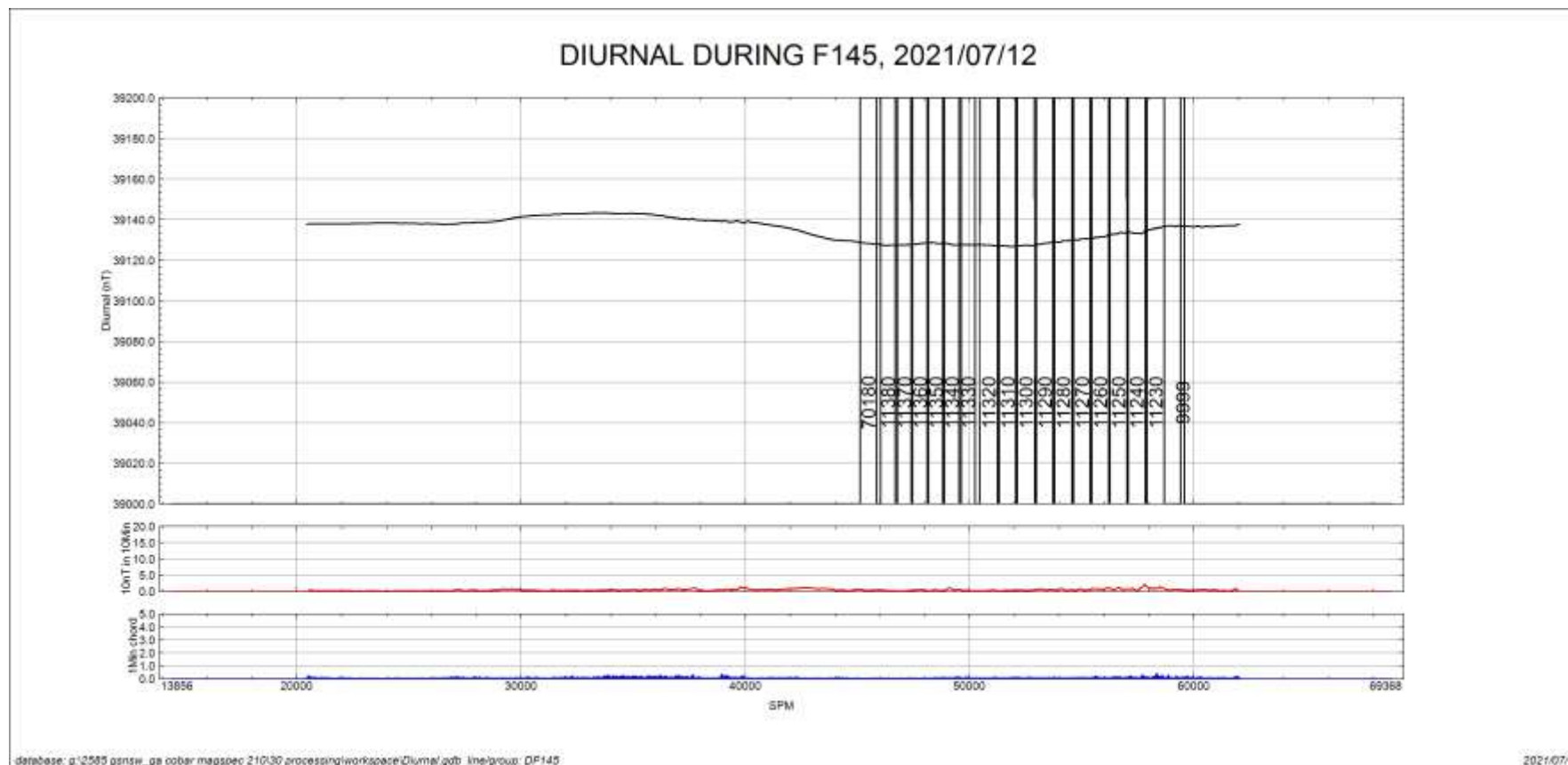
2021/07/11

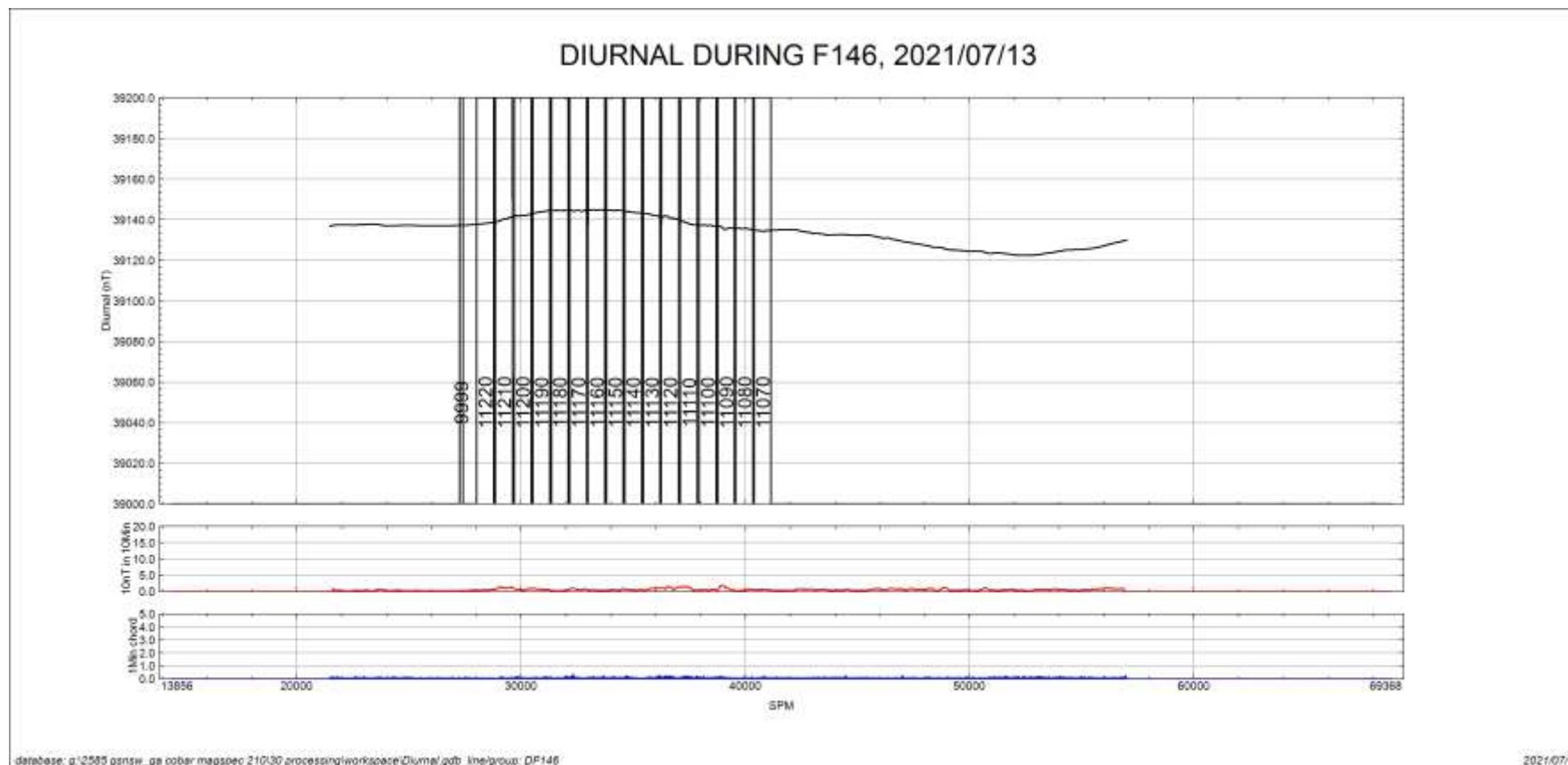
DIURNAL DURING F144, 2021/07/12



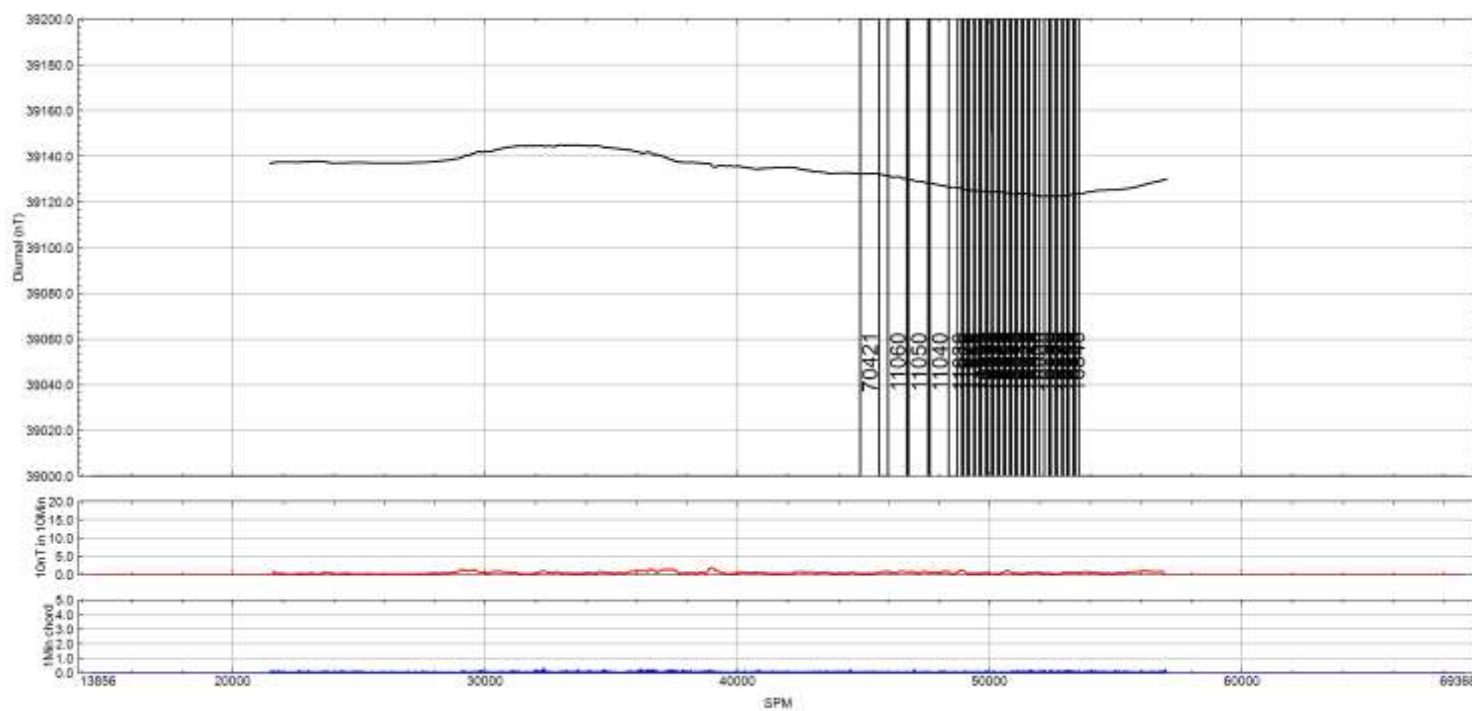
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2021/07/12





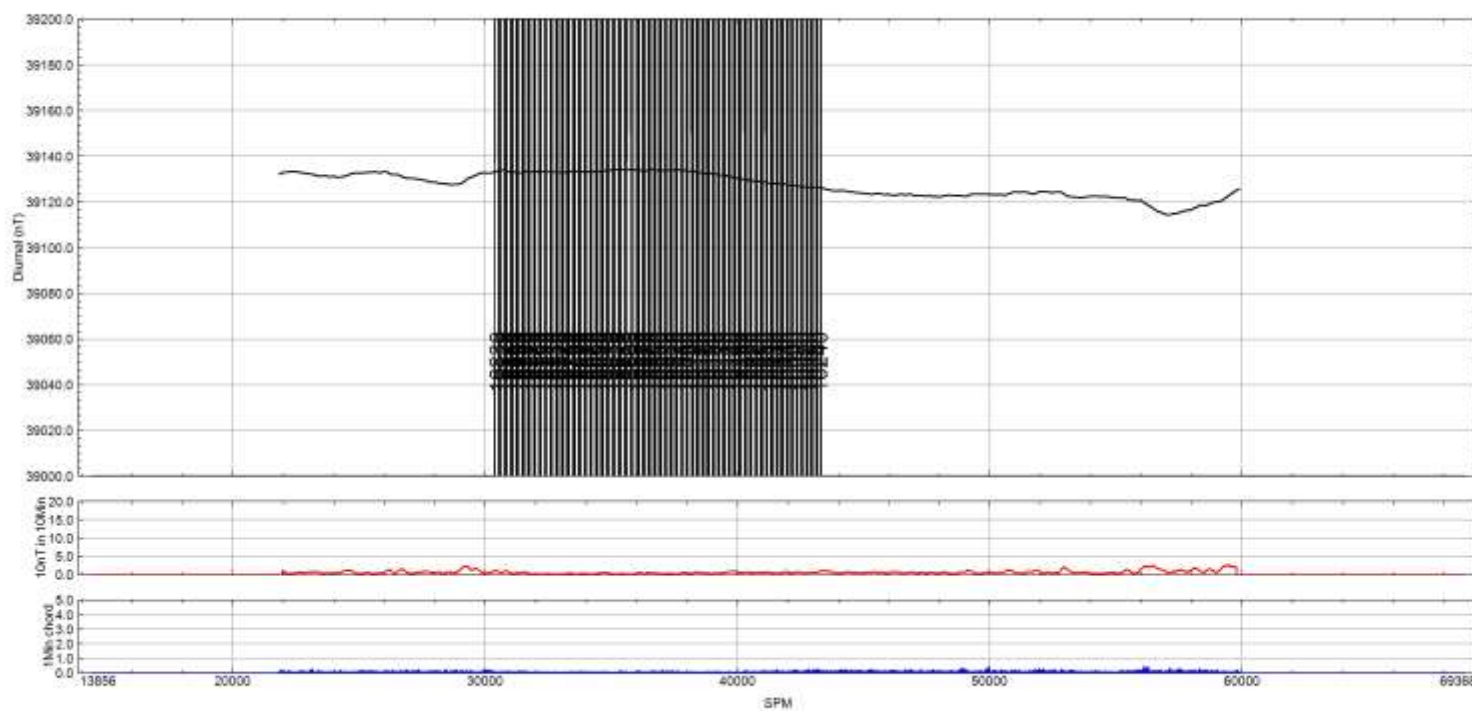
DIURNAL DURING F147, 2021/07/13



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2021/07/13

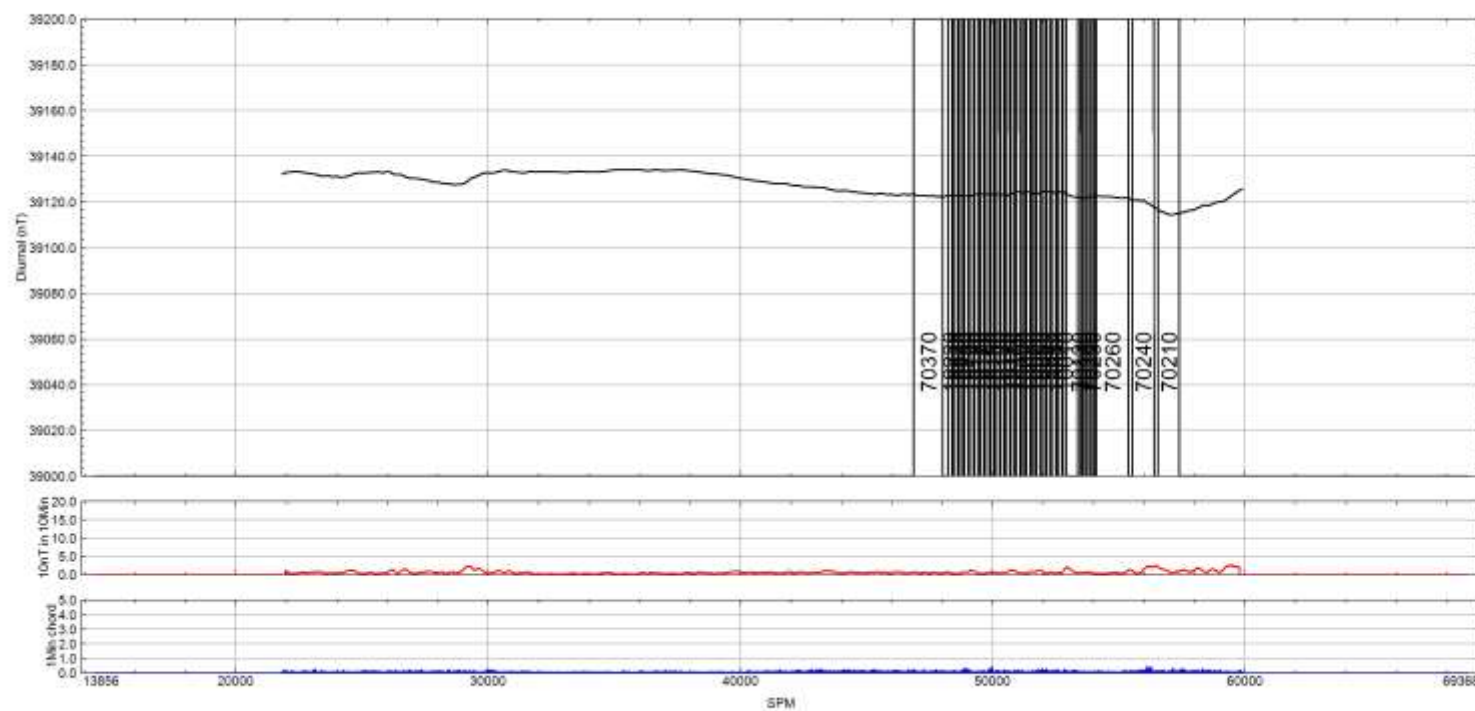
DIURNAL DURING F148, 2021/07/15



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2021/07/15

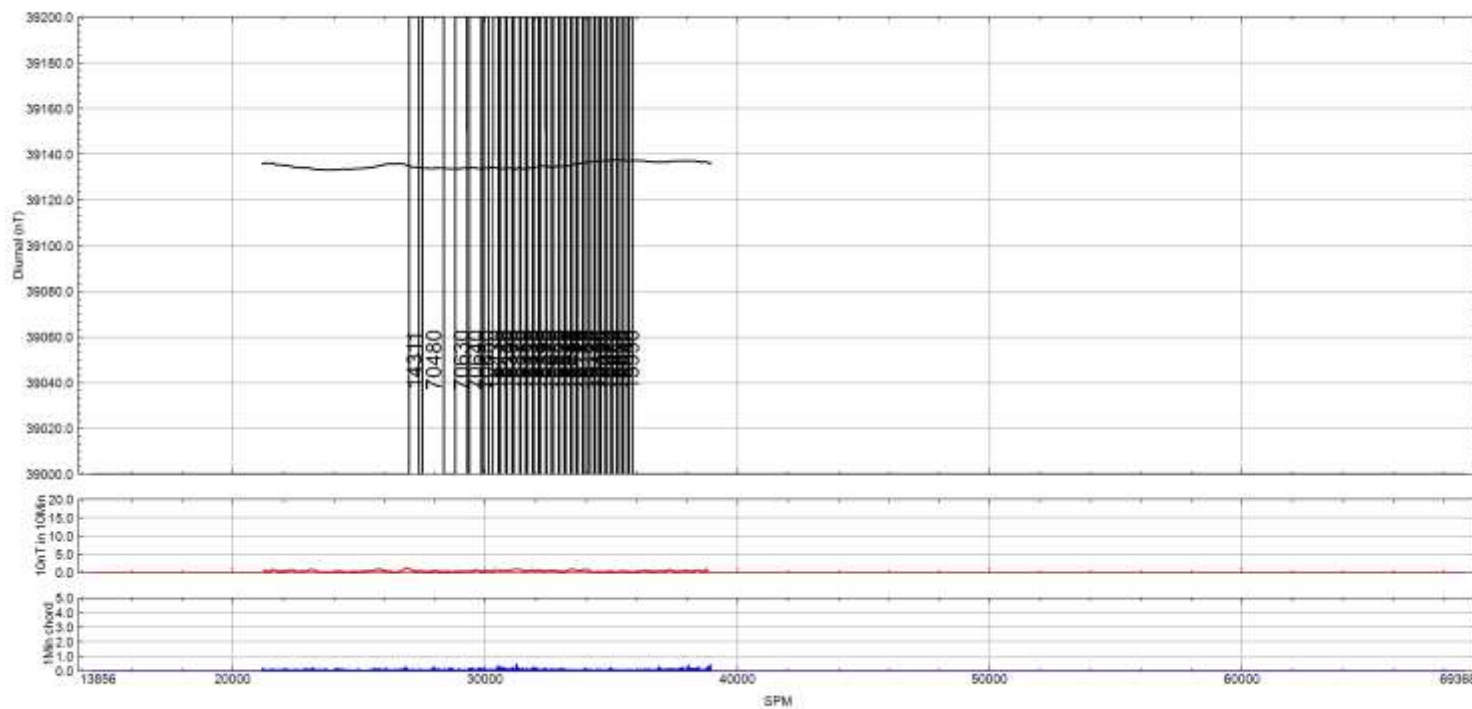
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2021/07/15

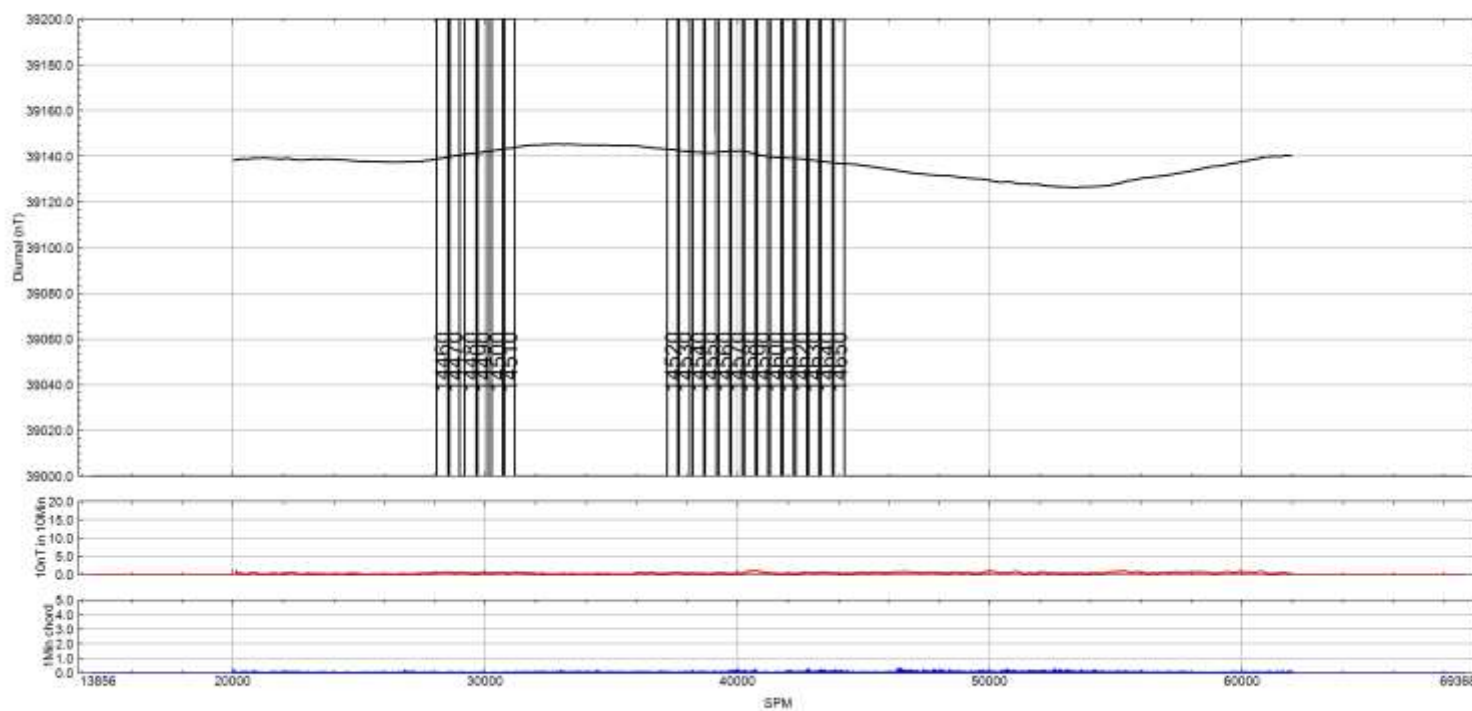
DIURNAL DURING F150, 2021/07/16



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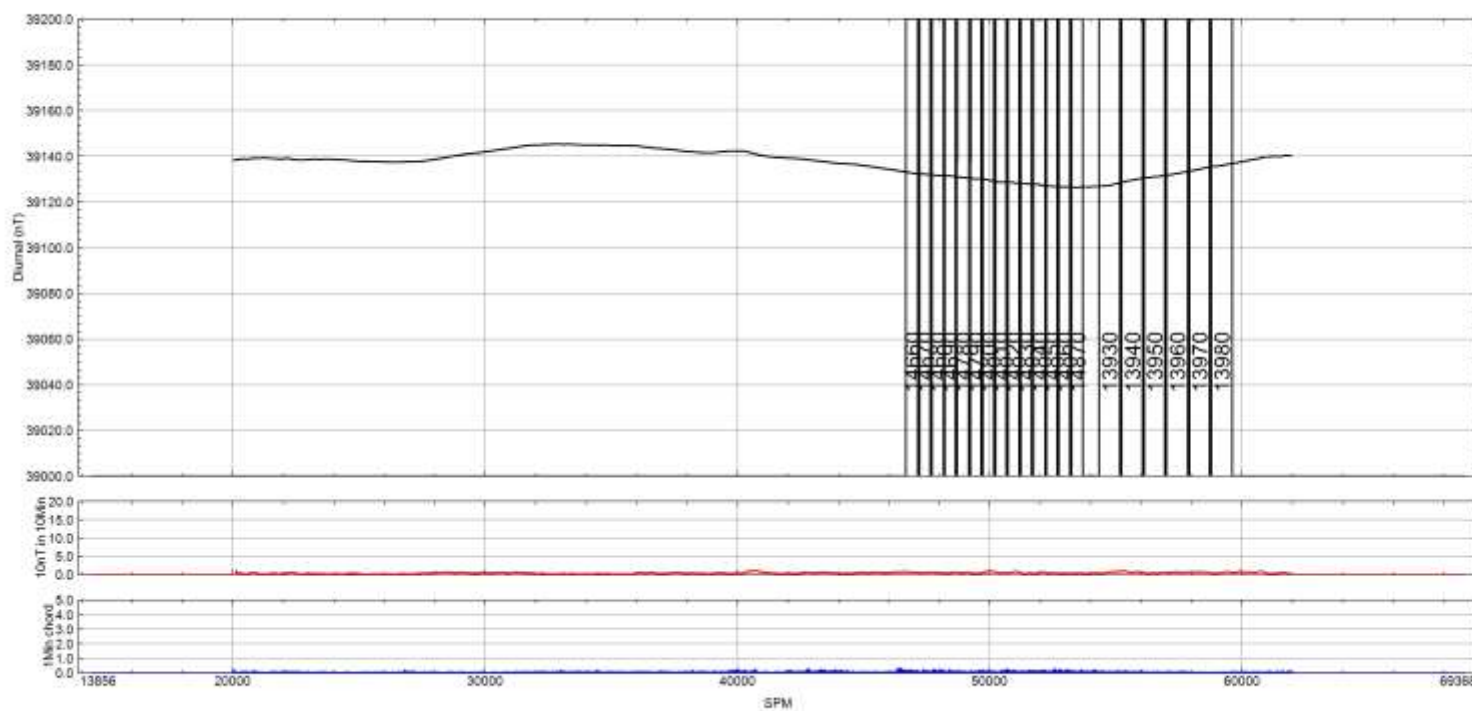
DIURNAL DURING F151, 2021/07/18



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2021/07/18

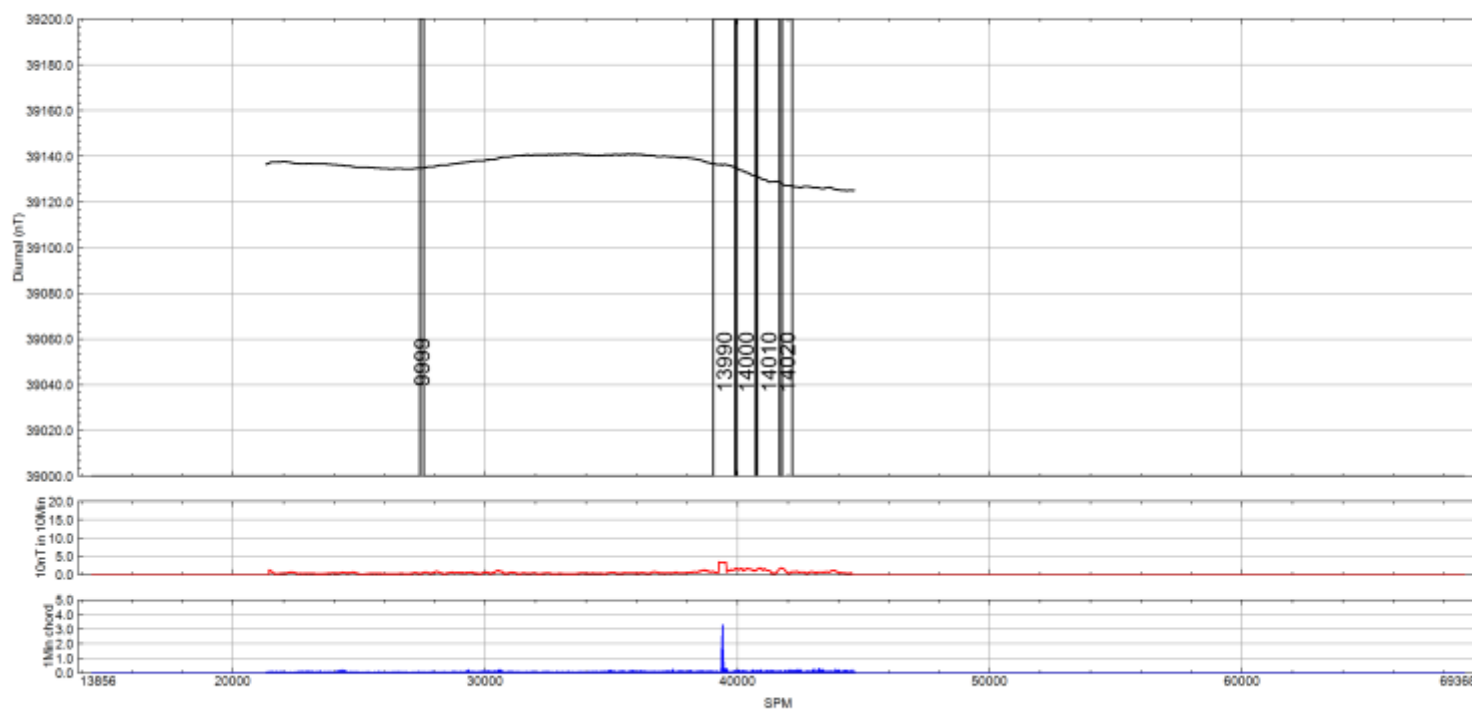
DIURNAL DURING F152, 2021/07/18



database: c:\obj\2585 gsnsw_ga_cobar_mag\spec 210130 processing\workspace\Diurnal.gdb linegroup: DF152

2021/07/18

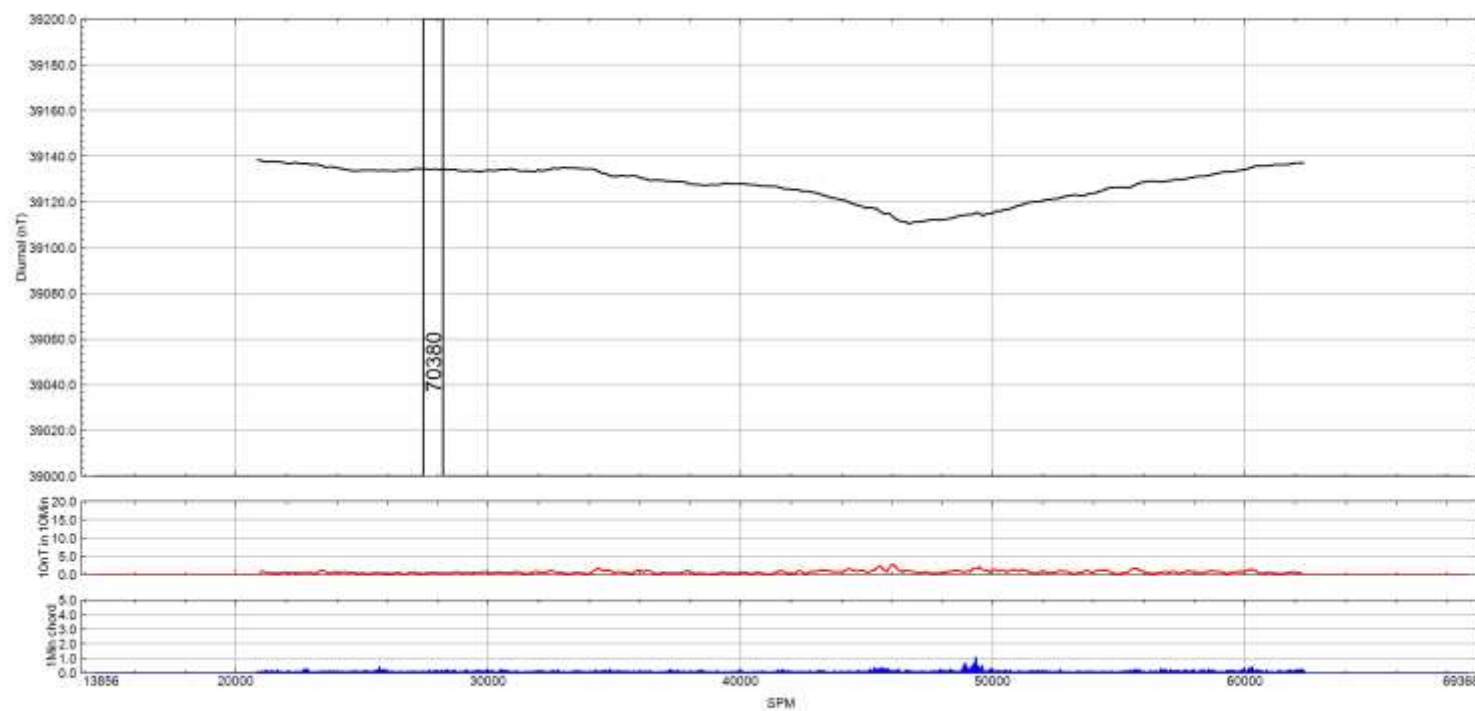
DIURNAL DURING F154, 2021/07/20



database: c:\jobs\2585_gsnsw_ga_cobar_magspec_210130_processing\workspace\Diurnal.gdb linegroup: DF154

2021/07/20

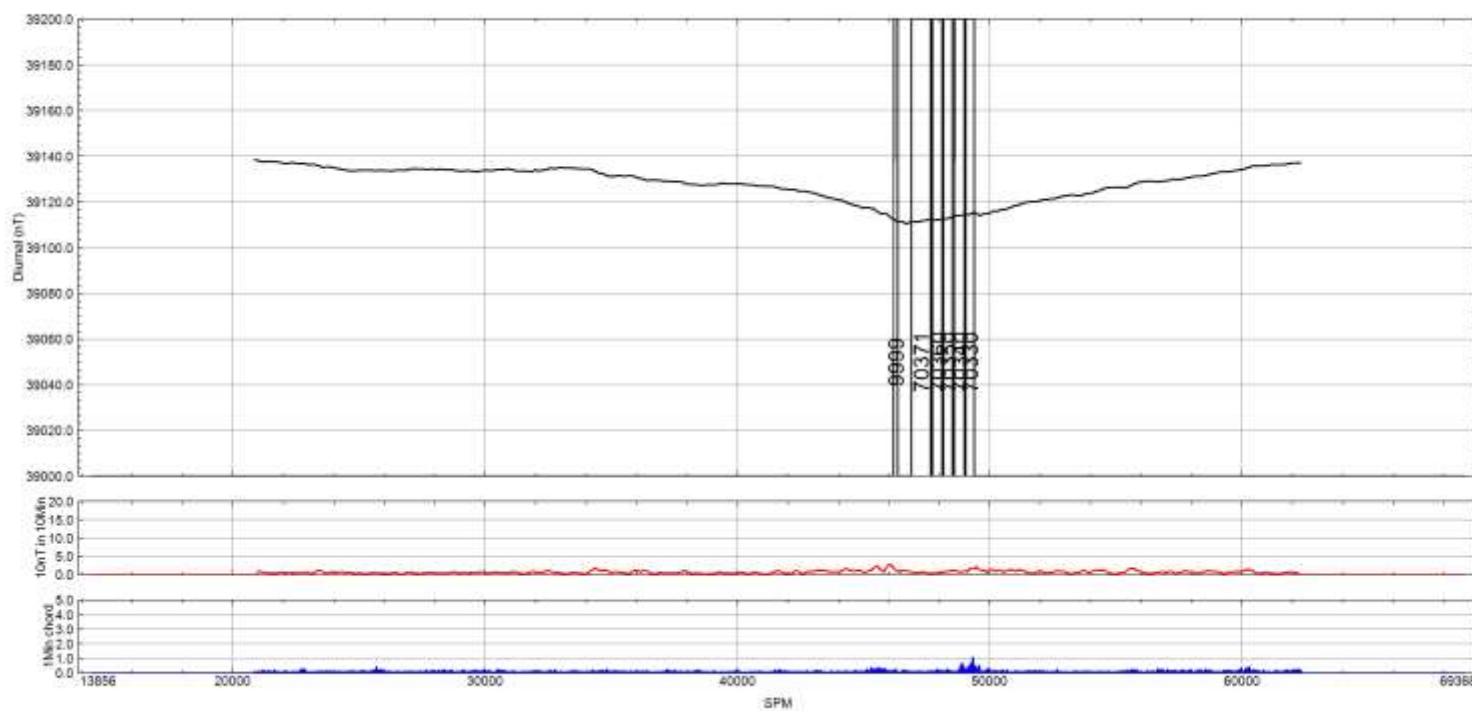
DIURNAL DURING F155, 2021/07/21



database: c:\obj\2585\gsnsw_ga_cobar_mag\spec 210130\processing\workspace\Diurnal.gdb linegroup: DF155

2021/07/21

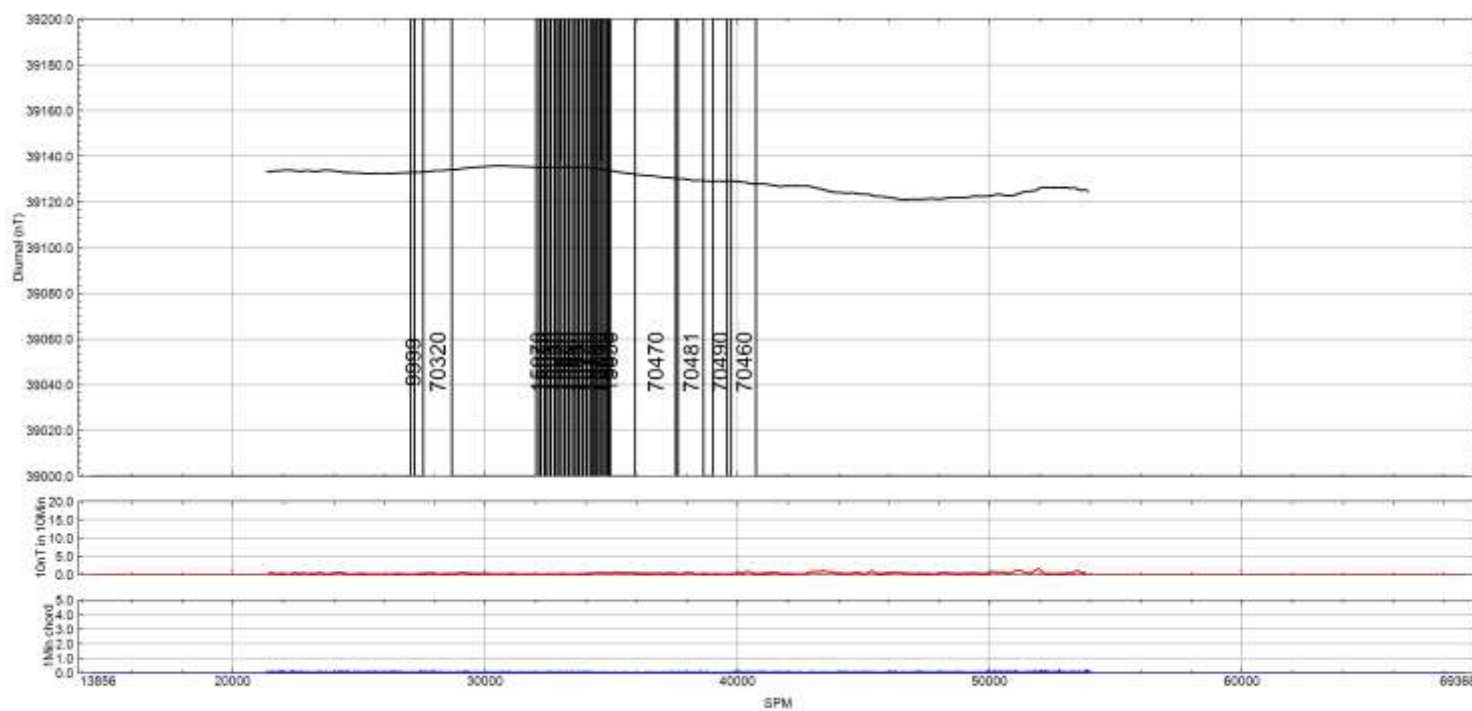
DIURNAL DURING F156, 2021/07/21



database: c:\obj\2585 gsnsw_ga_cobar_mag\spec 210130 processing\workspace\Diurnal.gdb imagegroup: DF156

2021/07/21

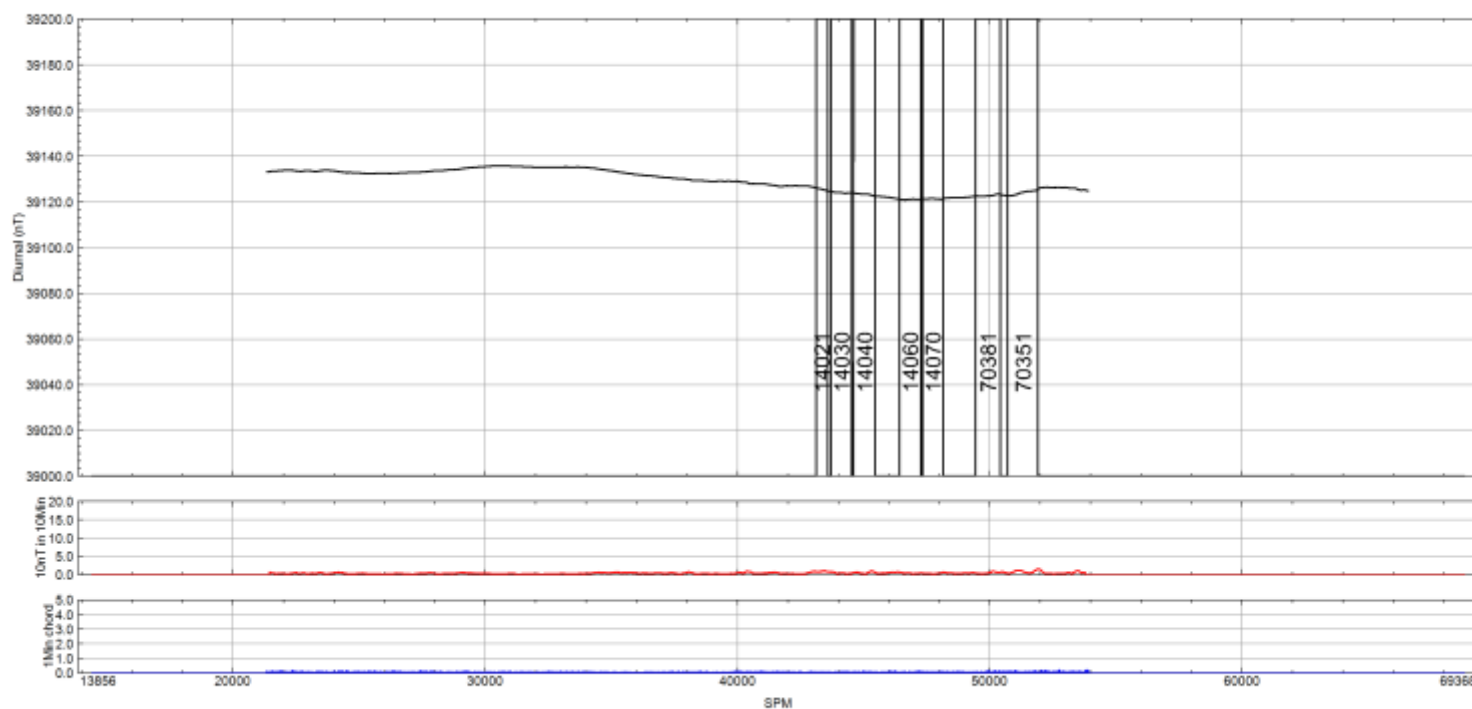
DIURNAL DURING F157, 2021/07/22



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec 210130\processing\workspace\Diurnal.gdb linegroup: DF157

2021/07/22

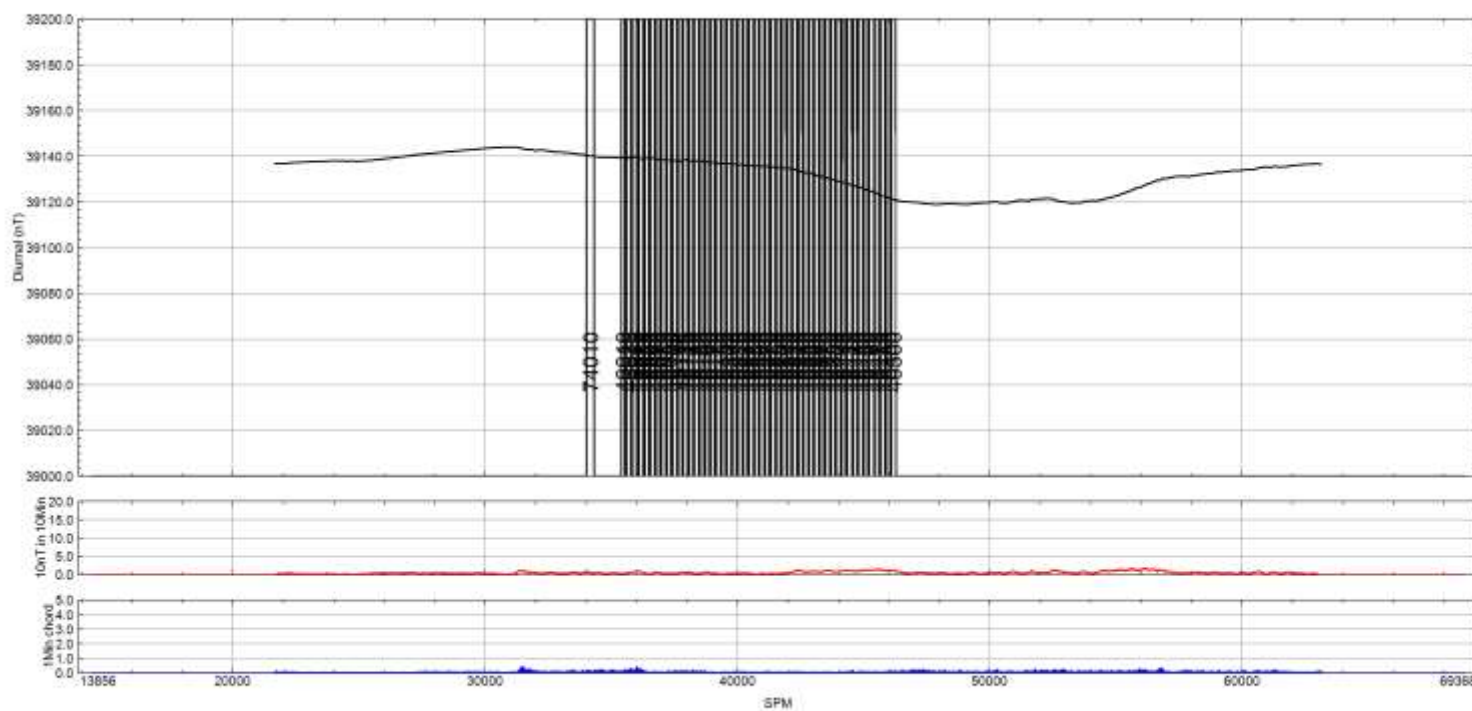
DIURNAL DURING F158, 2021/07/22



database: c:\obj\2585 gsnsw ga cobar mapspec 210130 processing\workspace\Diurnal.gdb linegroup: DF158

2021/07/22

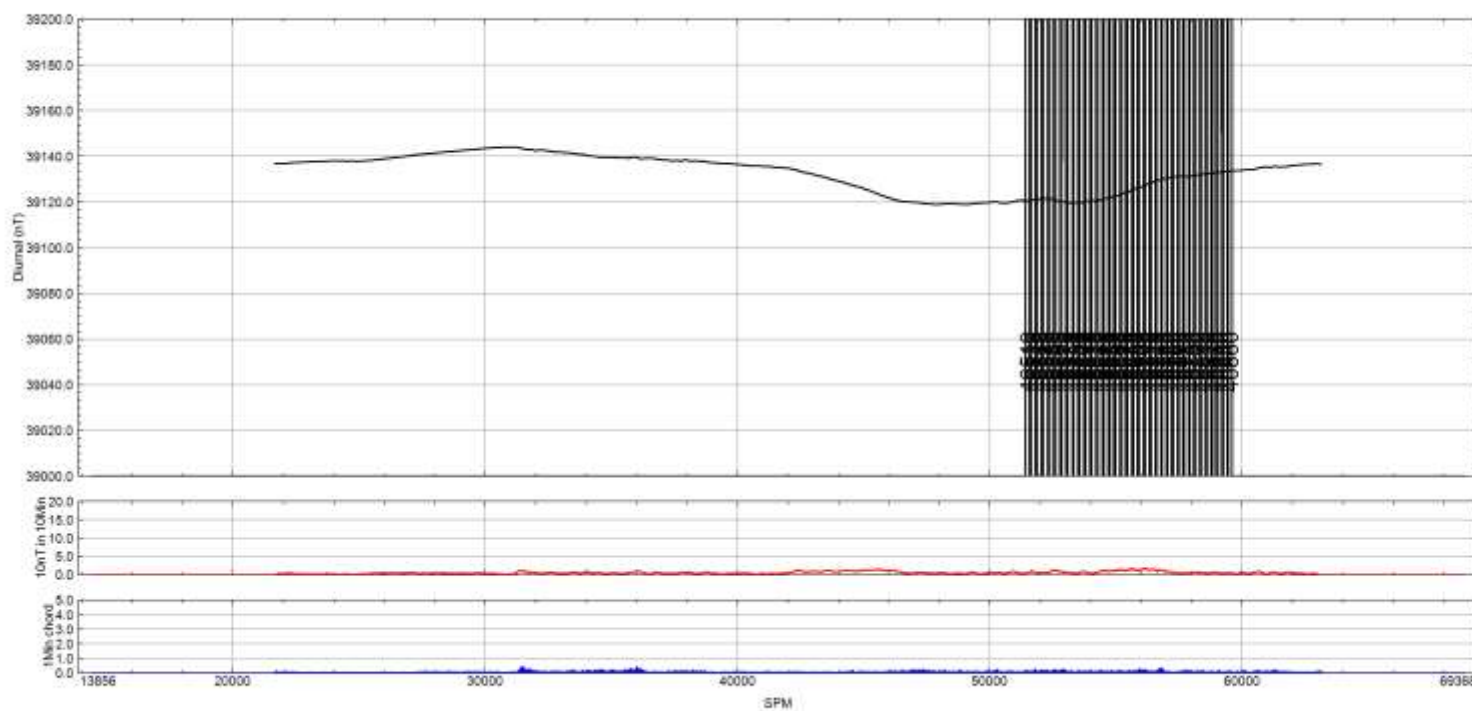
DIURNAL DURING F159, 2021/07/24



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec\210130\processing\workspace\Diurnal.gdb linegroup: DF159

2021/07/24

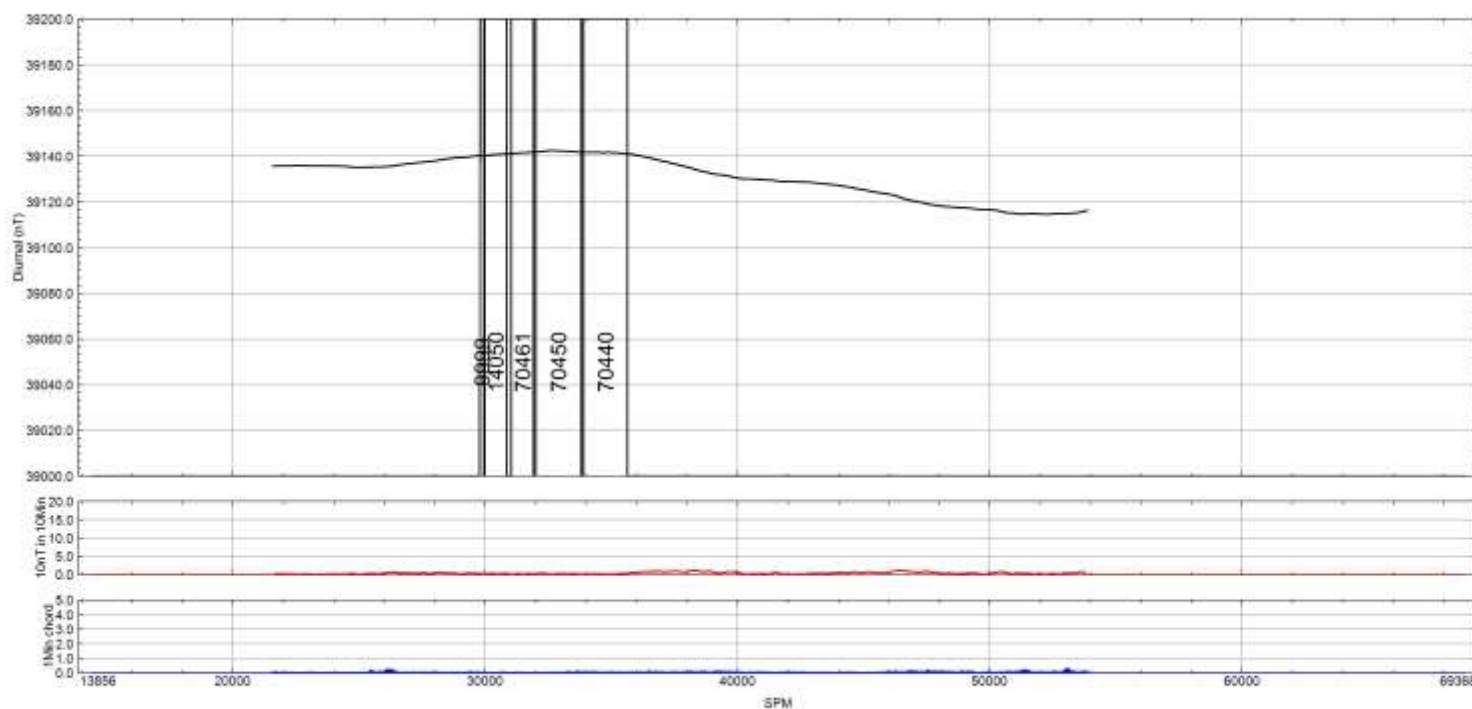
DIURNAL DURING F160, 2021/07/24



database: c:\obj\2585\gsnsw_ga_cobar_mag\spec 210130\processing\workspace\Diurnal.gdb linegroup: DF160

2021/07/24

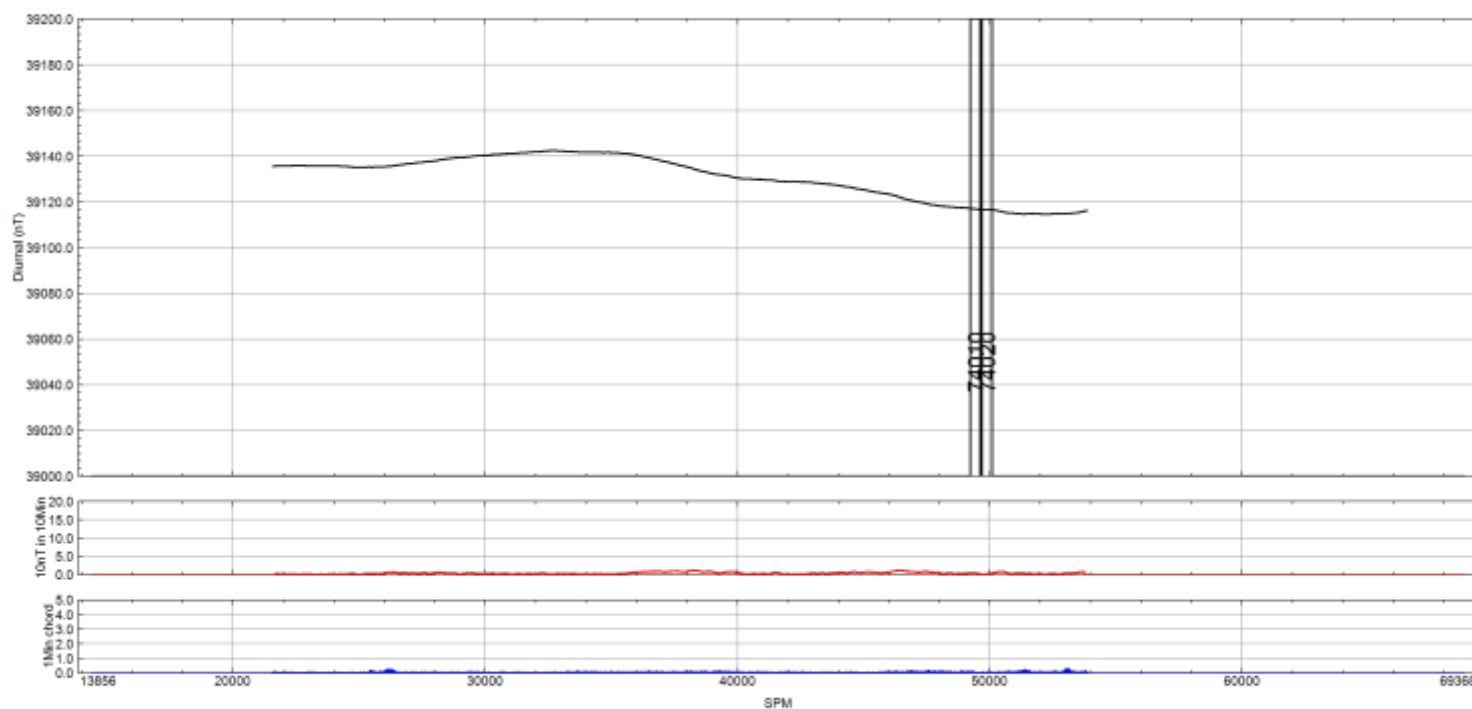
DIURNAL DURING F161, 2021/07/25



database: c:\00612585 gsnsw_ga_cobar_mag\spec 210130 processing\workspace\Diurnal.gdb linegroup: DF161

2021/07/25

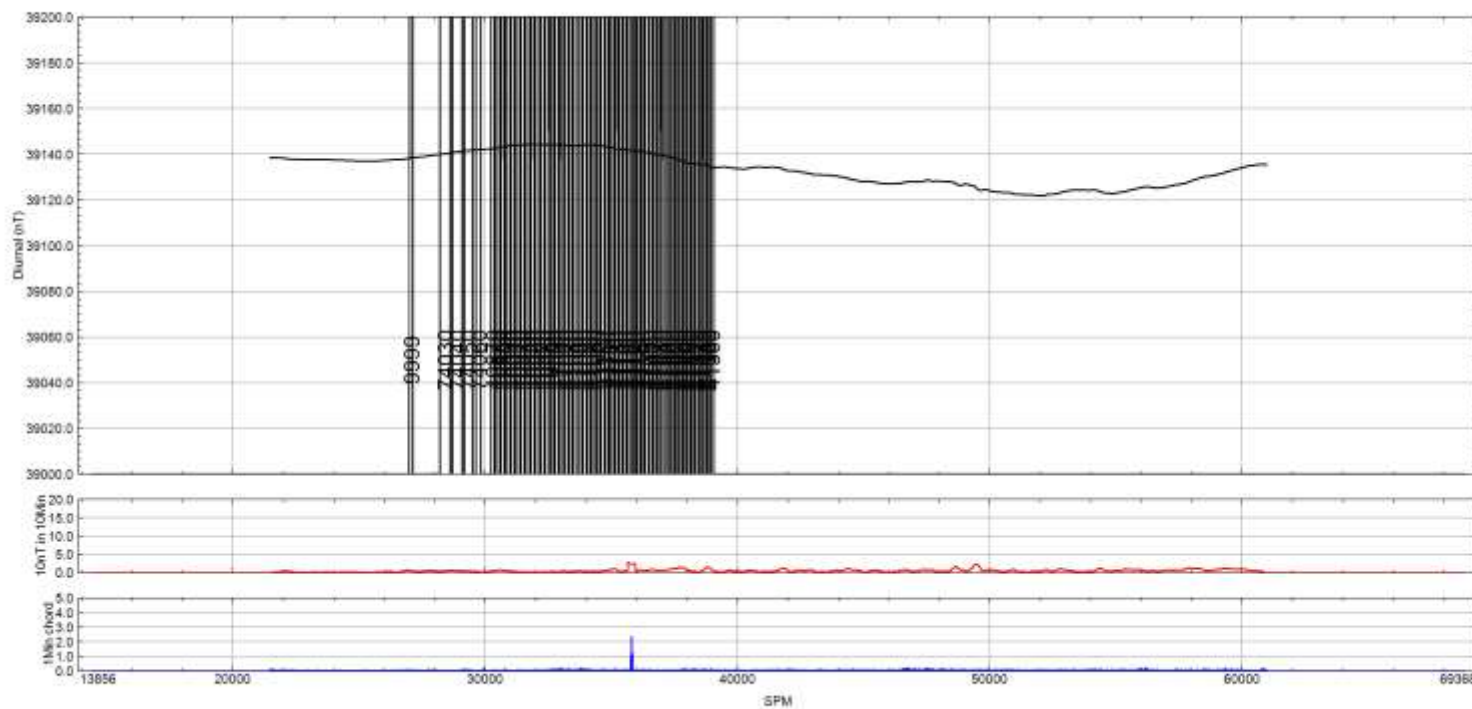
DIURNAL DURING F162, 2021/07/25



database: c:\jobs\2585_gsnsw_ga_cobar_mag\spec 210130 processing\workspace\Diurnal.gdb linegroup: DF162

2021/07/25

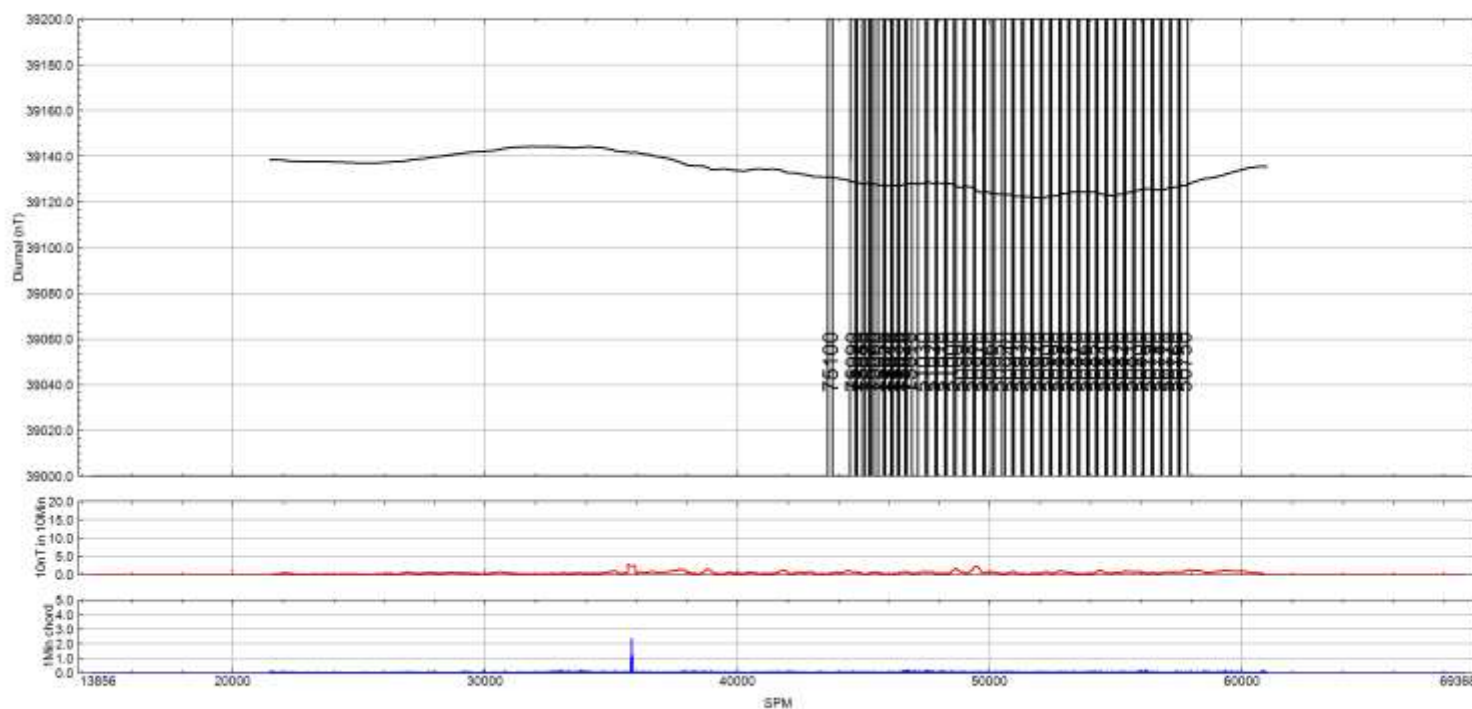
DIURNAL DURING F163, 2021/07/26



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec\210130\processing\workspace\Diurnal.gdb imagegroup: DF163

2021/07/26

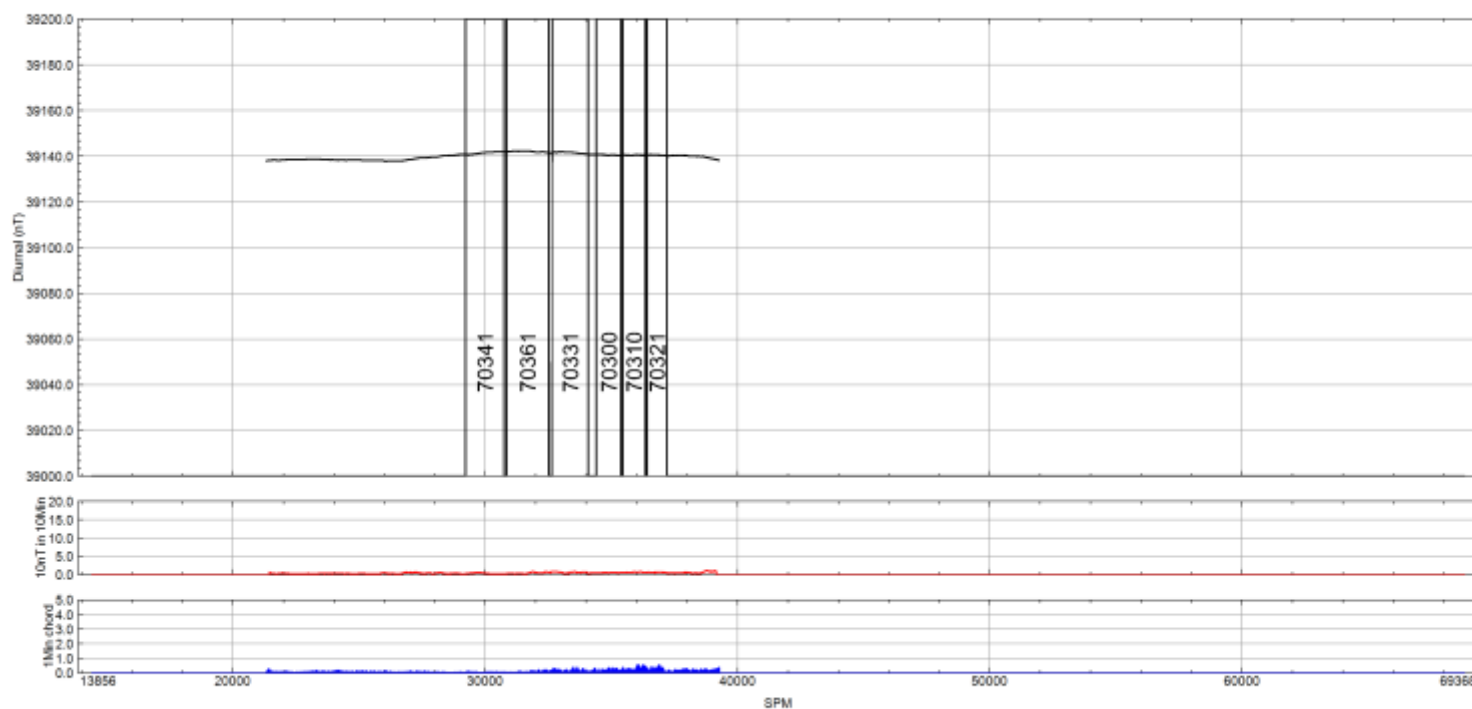
DIURNAL DURING F164, 2021/07/26



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec 210130\processing\workspace\Diurnal.gdb imagegroup: DF164

2021/07/26

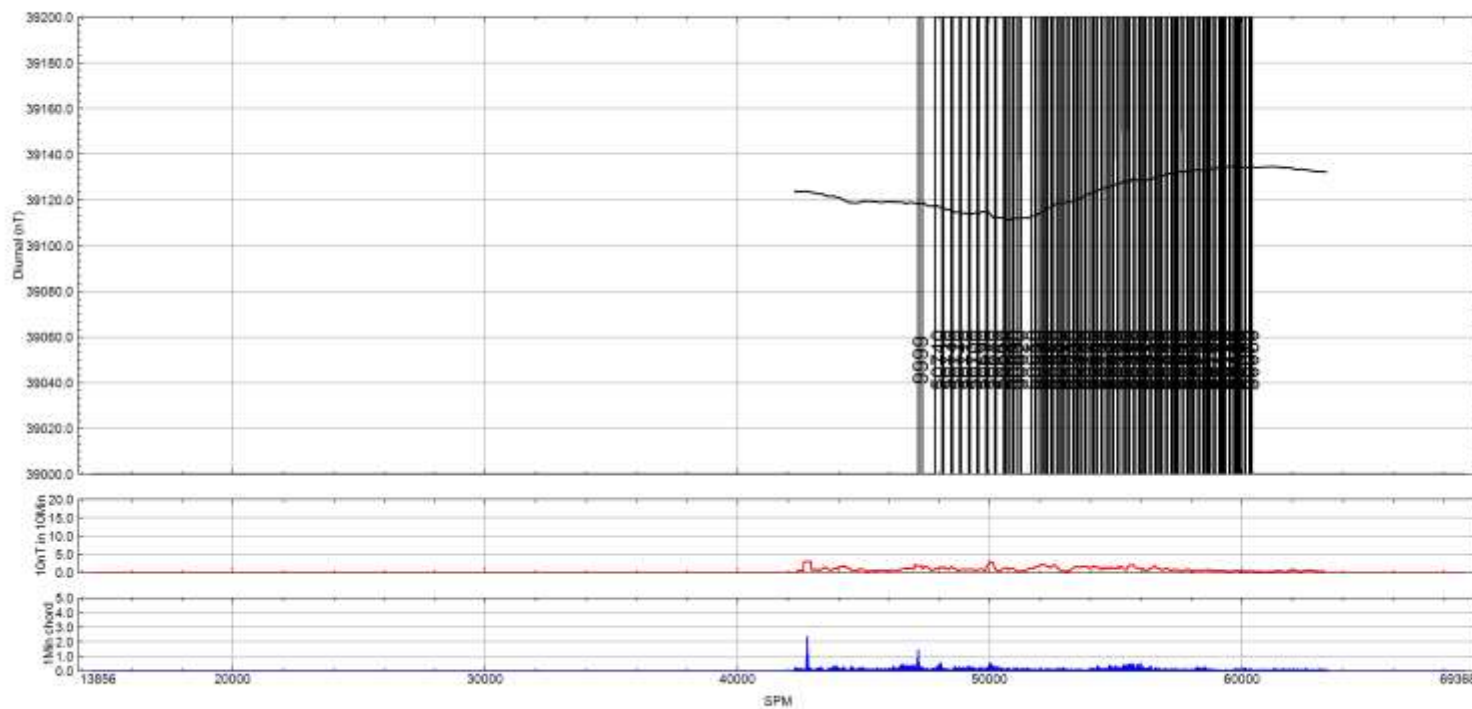
DIURNAL DURING F165, 2021/07/27



database: c:\jobs\2585 gsnsw_ga_cobar_magspec 210130 processing\workspace\Diurnal.gdb linegroup: DF165

2021/07/27

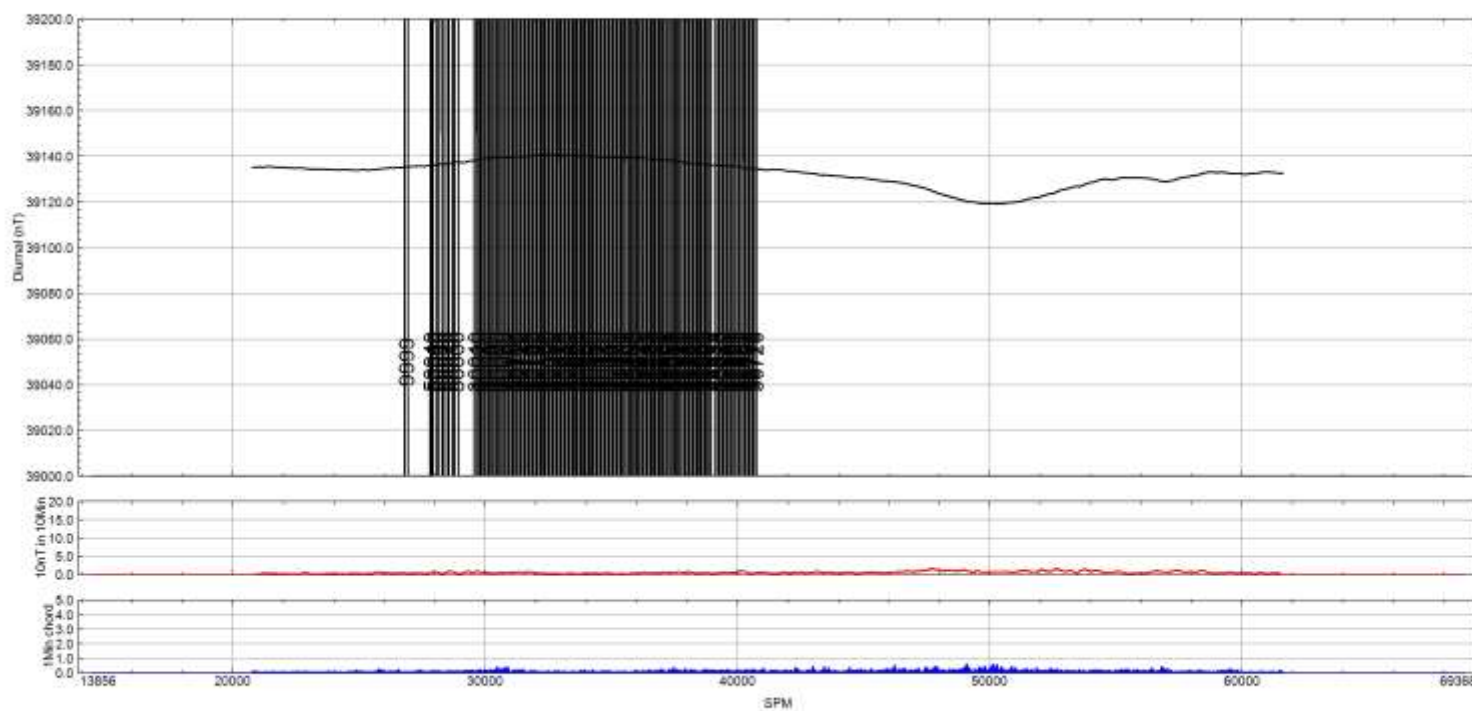
DIURNAL DURING F166, 2021/07/29



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec 210130\processing\workspace\Diurnal.gdb linegroup: DF166

2021/07/29

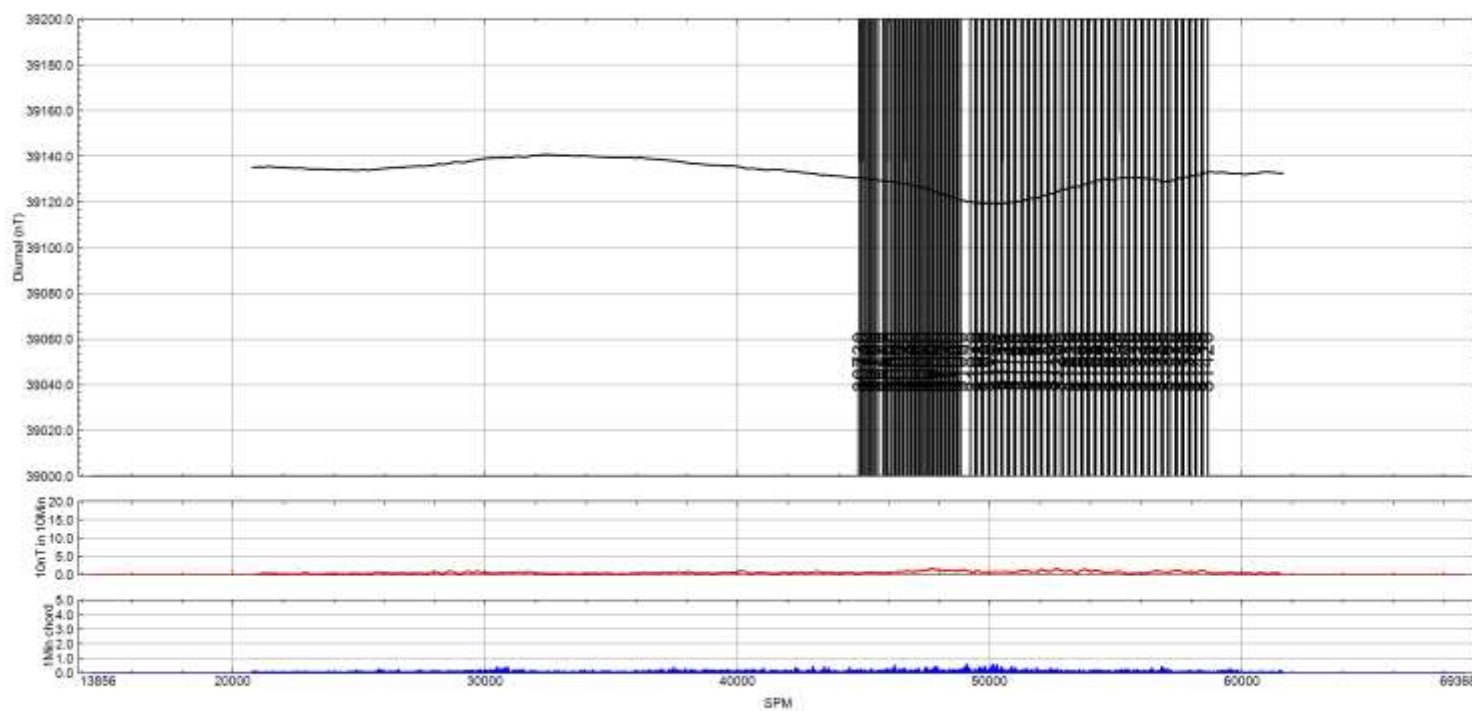
DIURNAL DURING F167, 2021/07/30



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec 210130\processing\workspace\Diurnal.gdb linegroup: DF167

2021/07/30

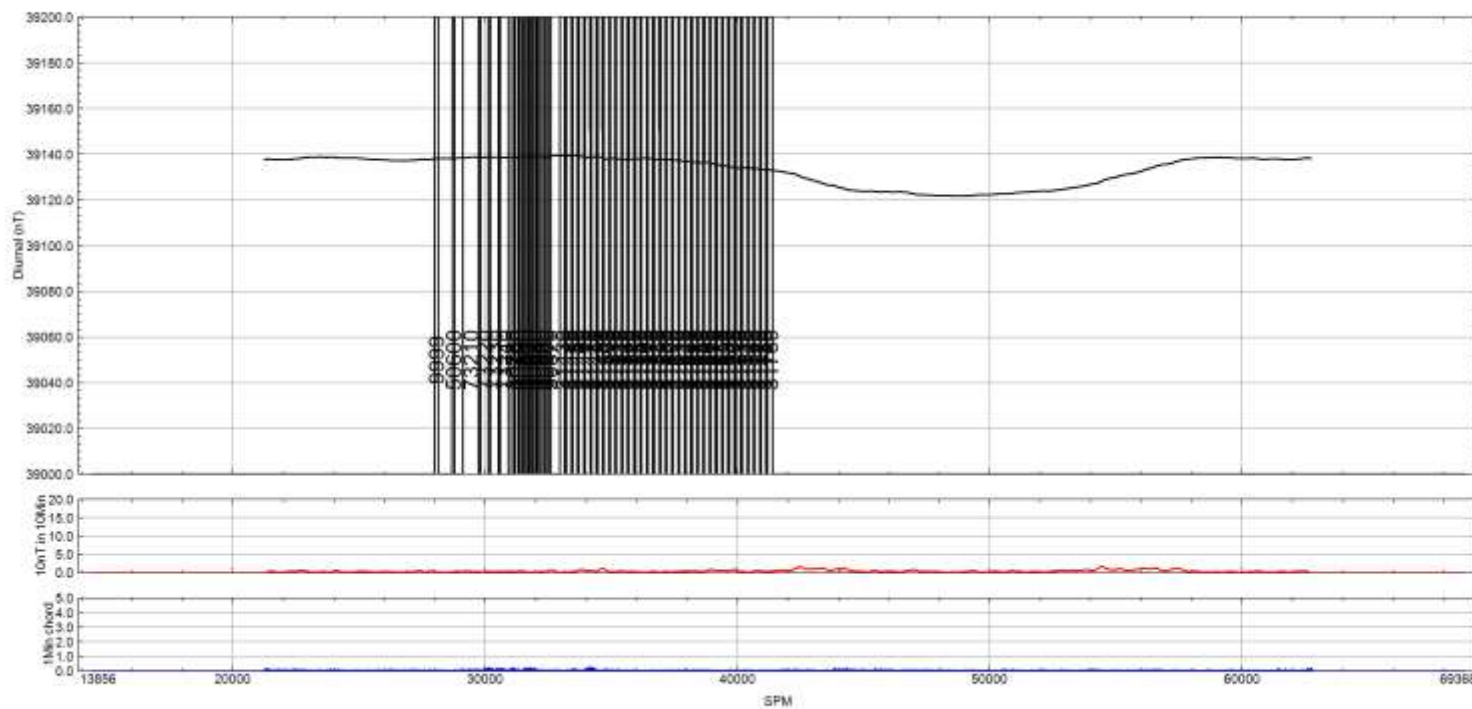
DIURNAL DURING F168, 2021/07/30



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec 210130\processing\workspace\Diurnal.gdb linegroup: DF168

2021/07/30

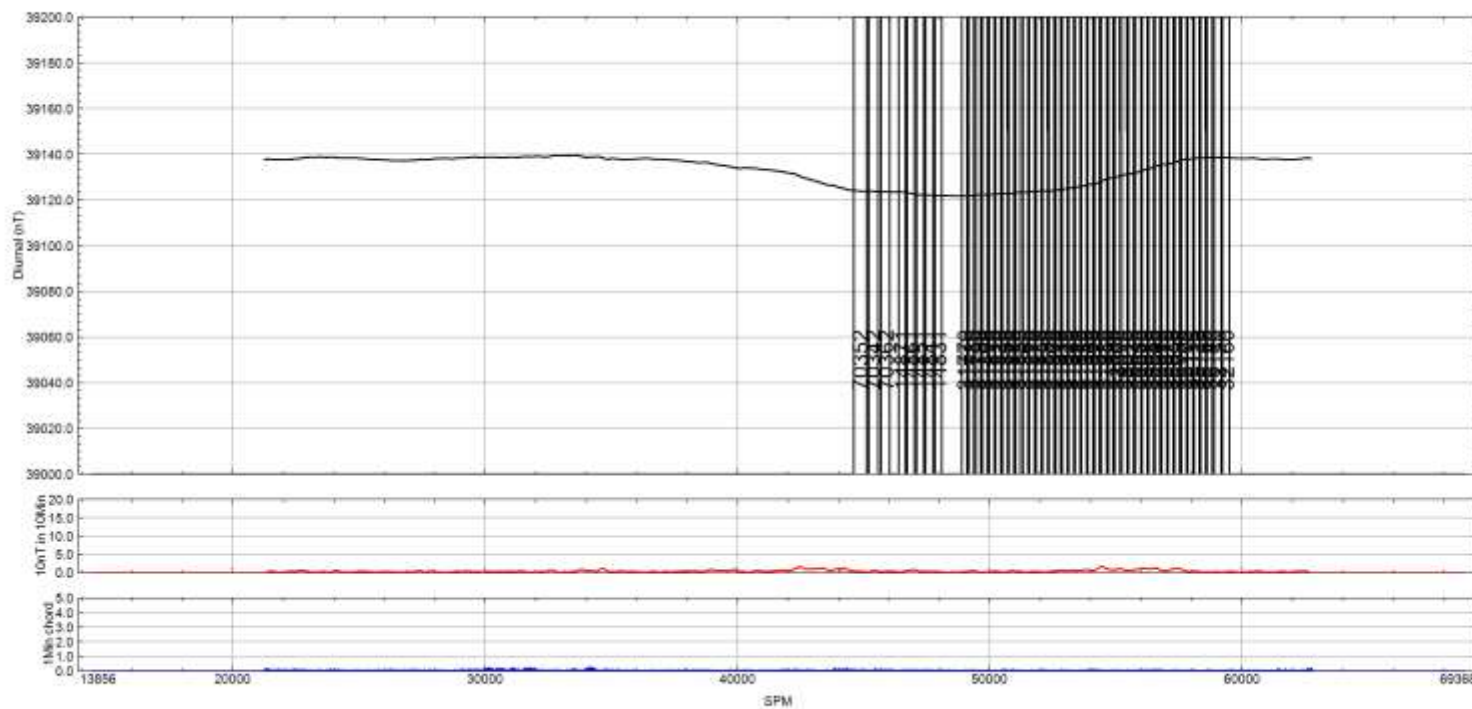
DIURNAL DURING F169, 2021/08/01



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec\210130\processing\workspace\Diurnal.gdb linegroup: DF169

2021/08/01

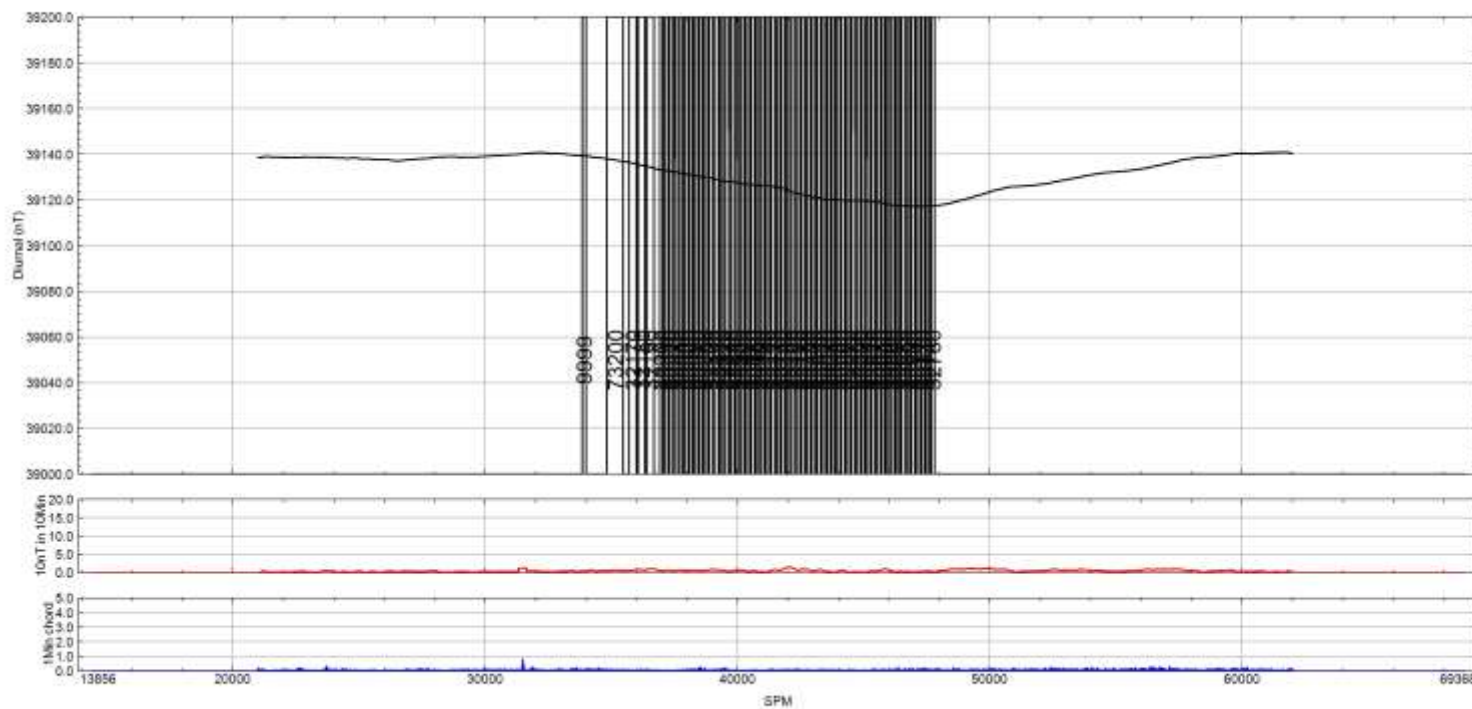
DIURNAL DURING F170, 2021/08/01



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec 210130\processing\workspace\Diurnal.gdb imagegroup: DF170

2021/08/01

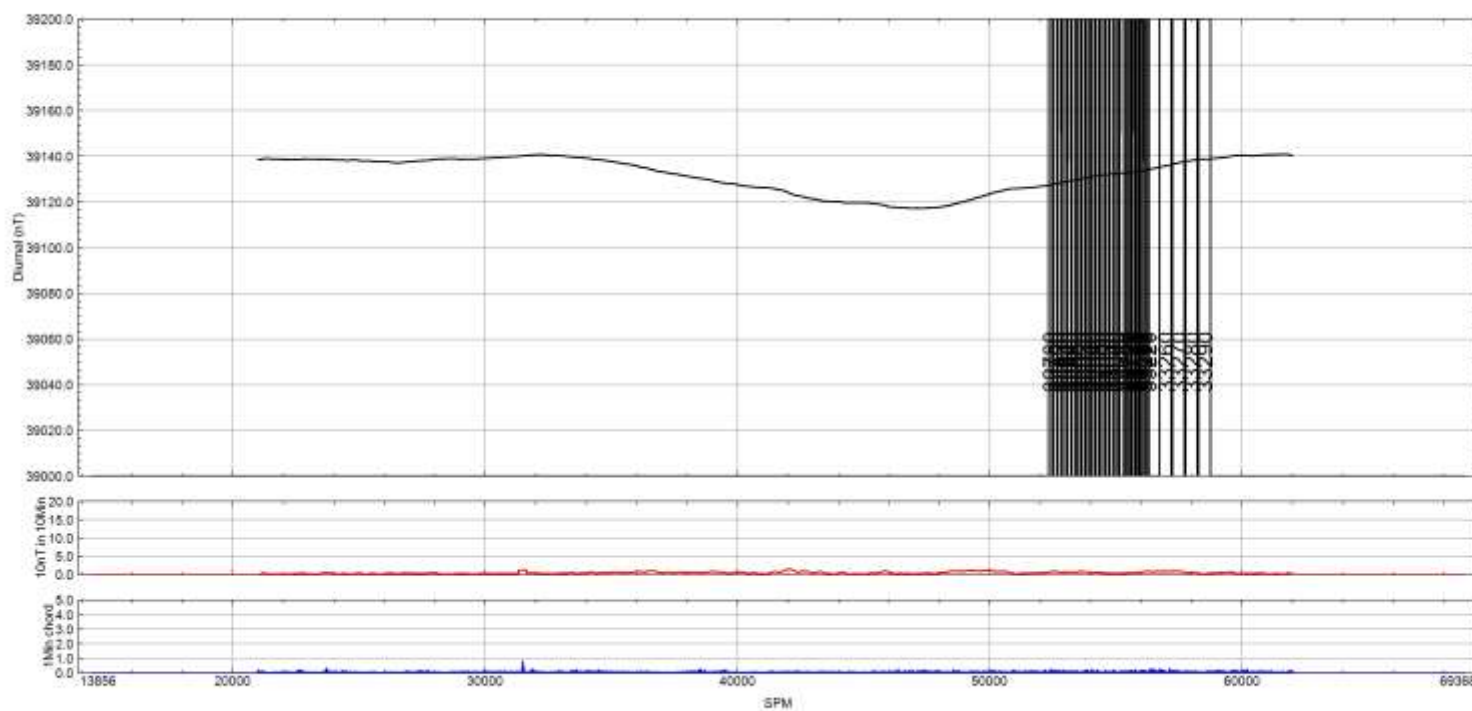
DIURNAL DURING F171, 2021/08/02



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec 210130\processing\workspace\Diurnal.gdb imagegroup: DF171

2021/08/02

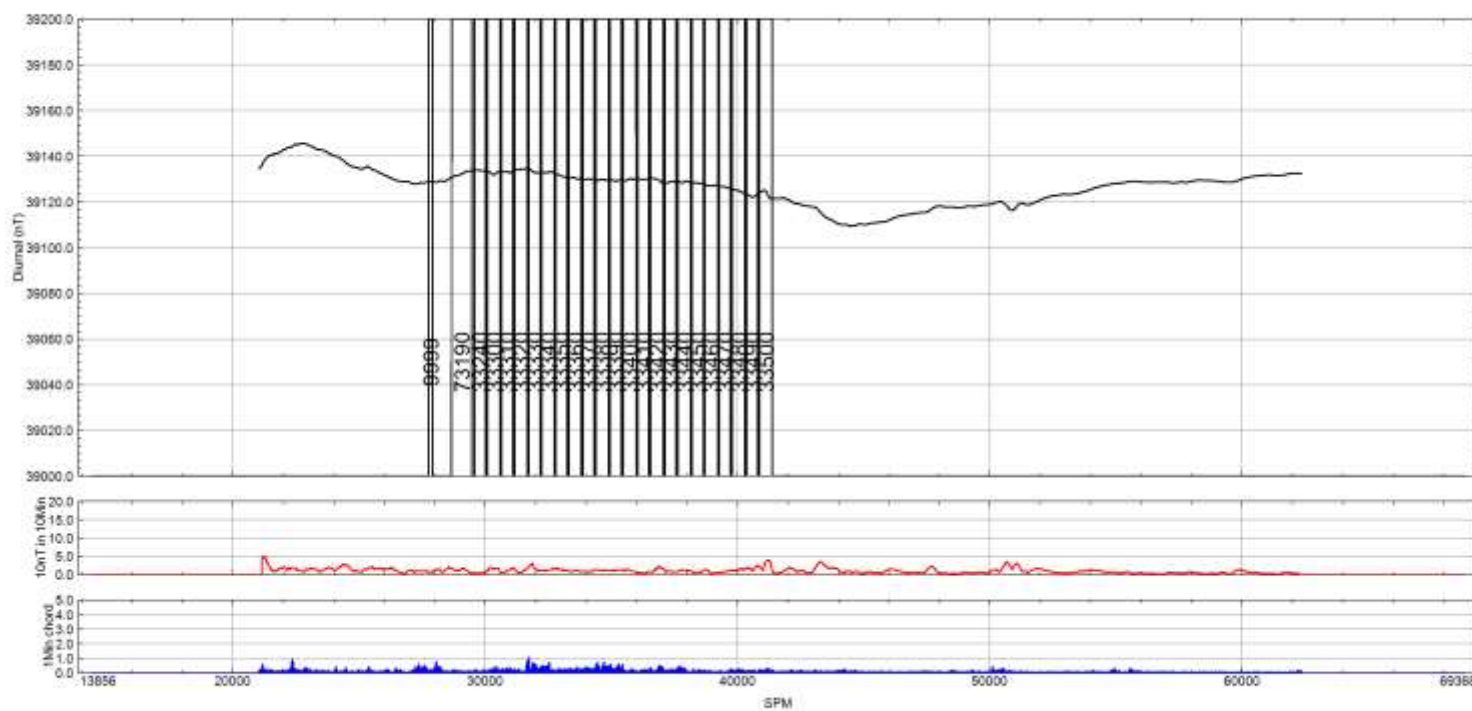
DIURNAL DURING F172, 2021/08/02



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec 210130\processing\workspace\Diurnal\gdb\img\group DF172

2021/08/02

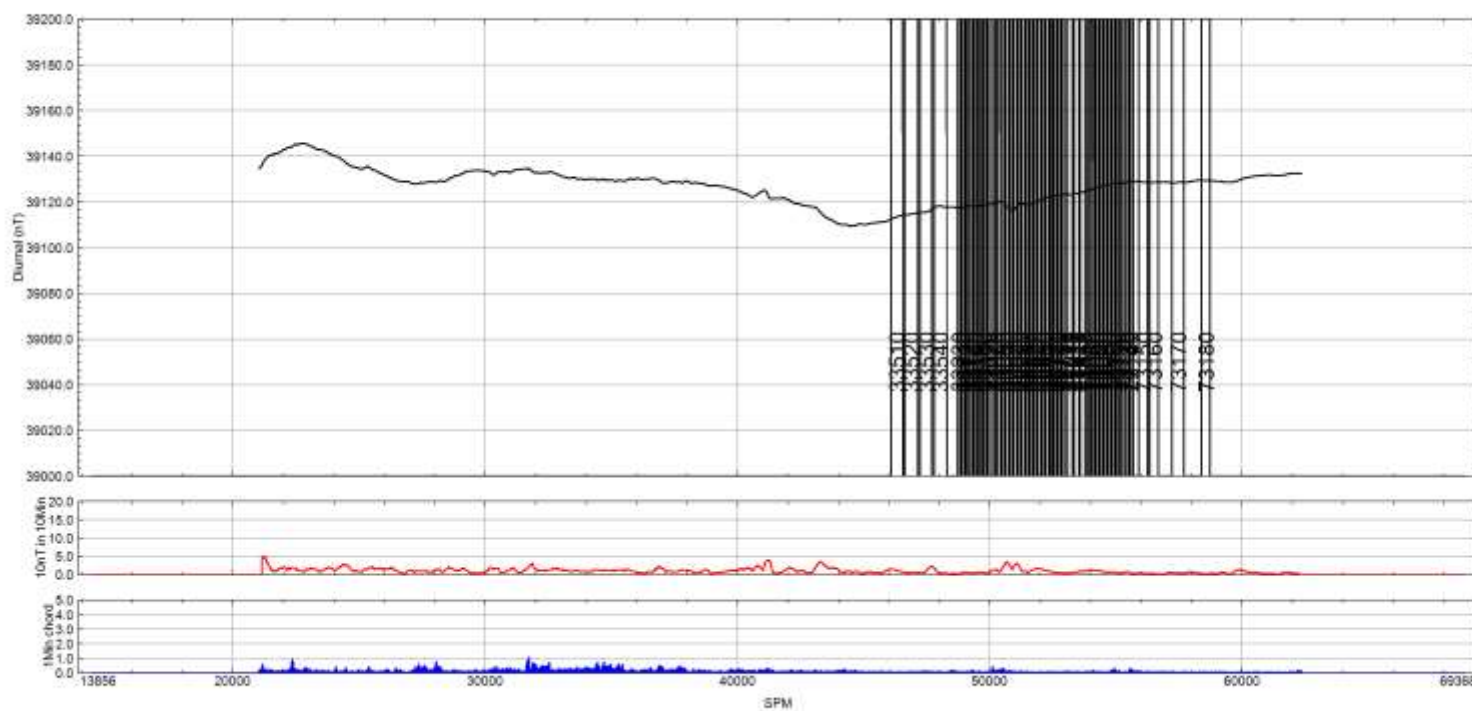
DIURNAL DURING F173, 2021/08/03



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec\210130\processing\workspace\Diurnal.gdb linegroup: DF173

2021/08/03

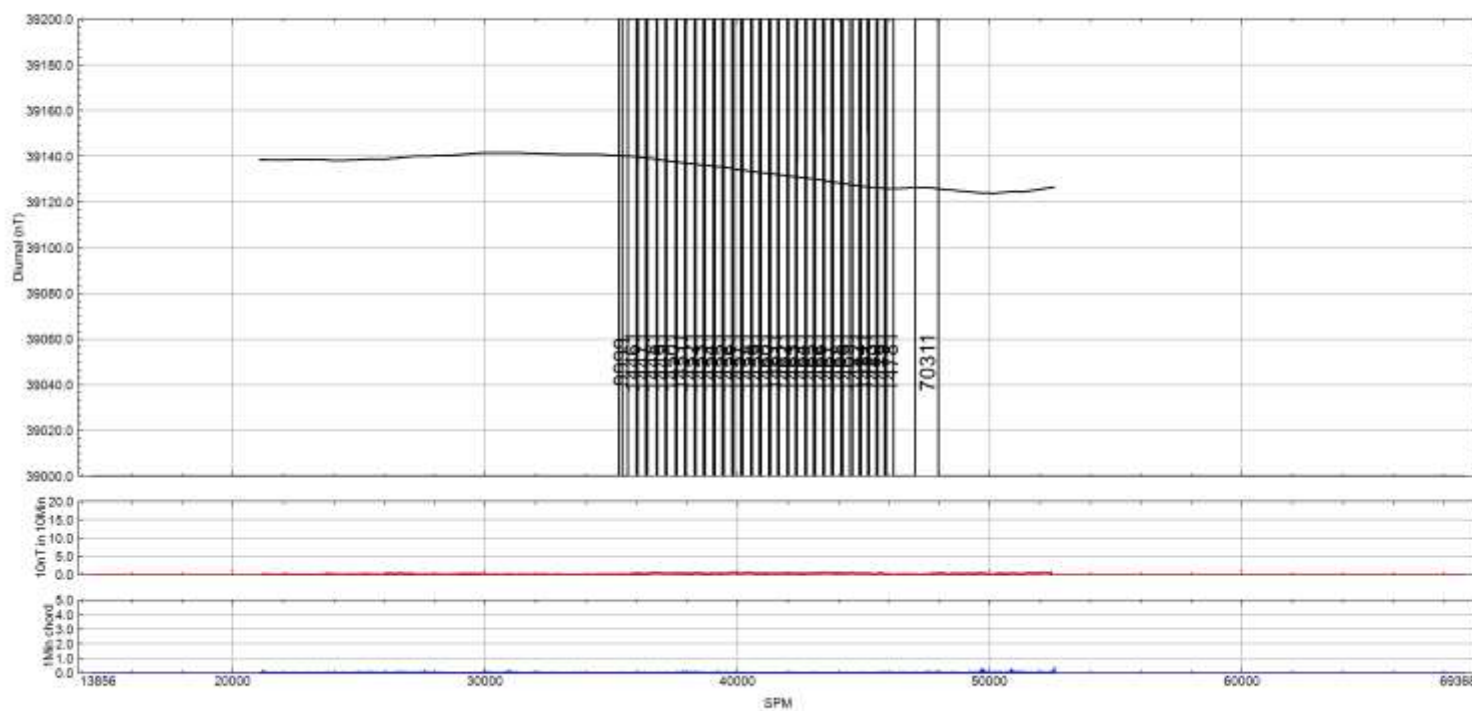
DIURNAL DURING F174, 2021/08/03



database: c:\obj\2585\gsnsw_ga\cobar_mag\spec 210130\processing\workspace\Diurnal.gdb linegroup: DF174

2021/08/03

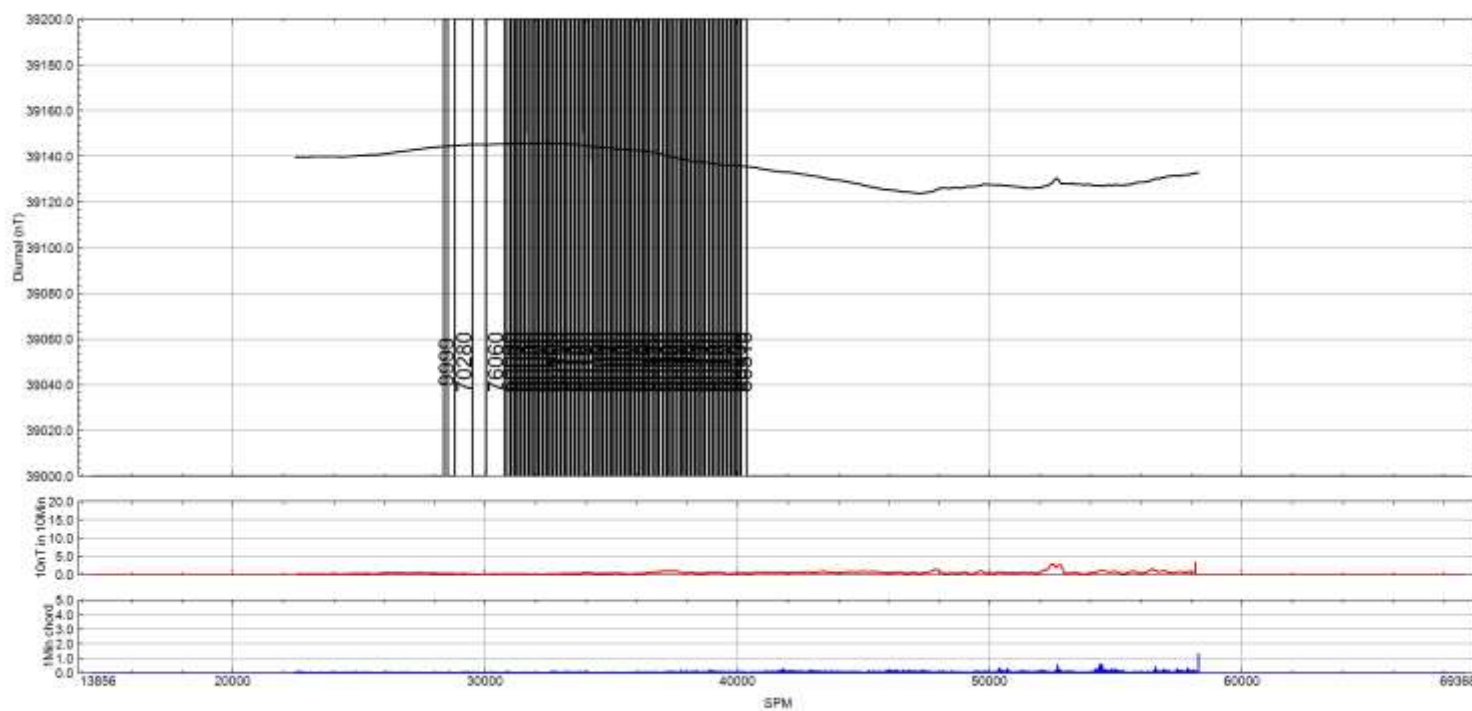
DIURNAL DURING F175, 2021/08/05



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec\210130\processing\workspace\Diurnal.gdb linegroup: DF175

2021/08/05

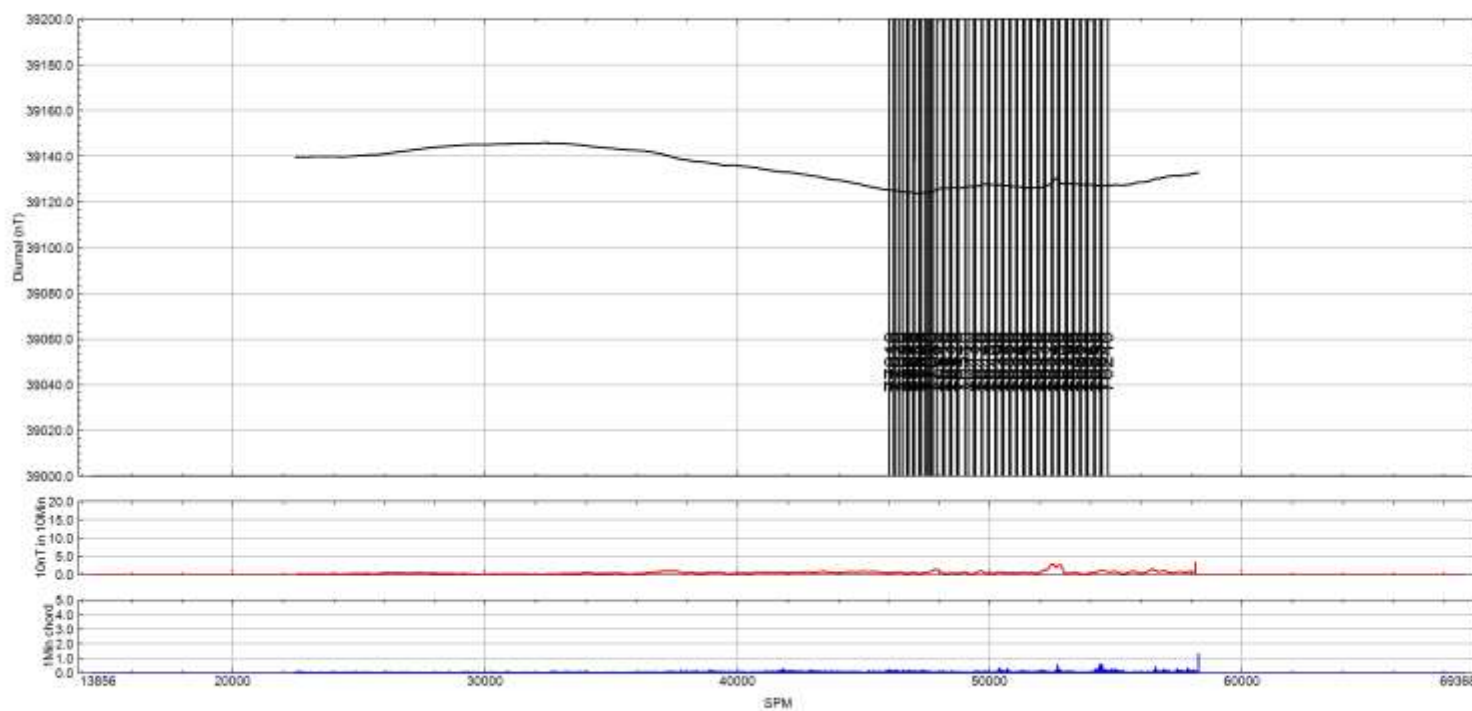
DIURNAL DURING F176, 2021/08/06



database: c:\obj\2585 gsnsw_ga cobar magspec 21030 processing\workspace\Diurnal.gdb linegroup: DF176

2021/08/06

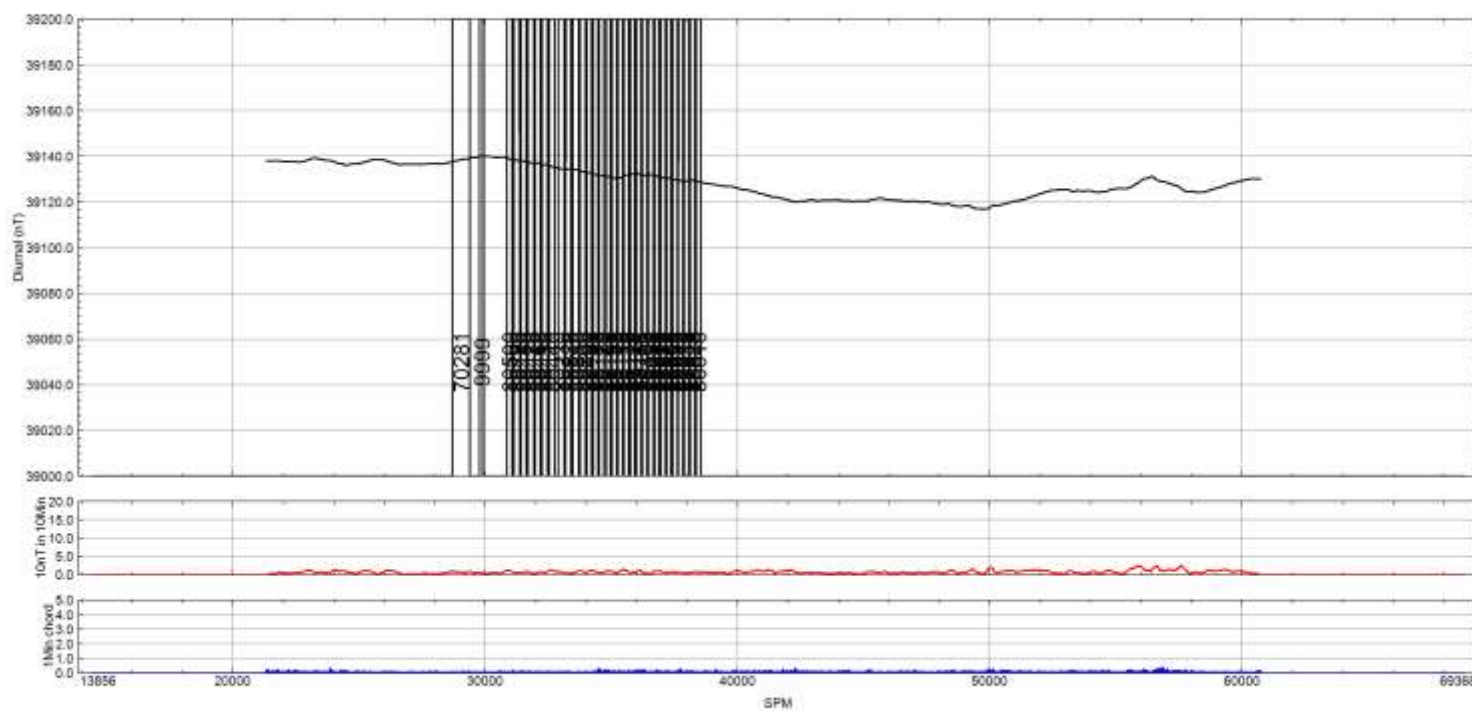
DIURNAL DURING F177, 2021/08/06



database: c:\obj\2585\gsnsw_ga\cobar_mag\spec 210130\processing\workspace\Diurnal.gdb linegroup: DF177

2021/08/06

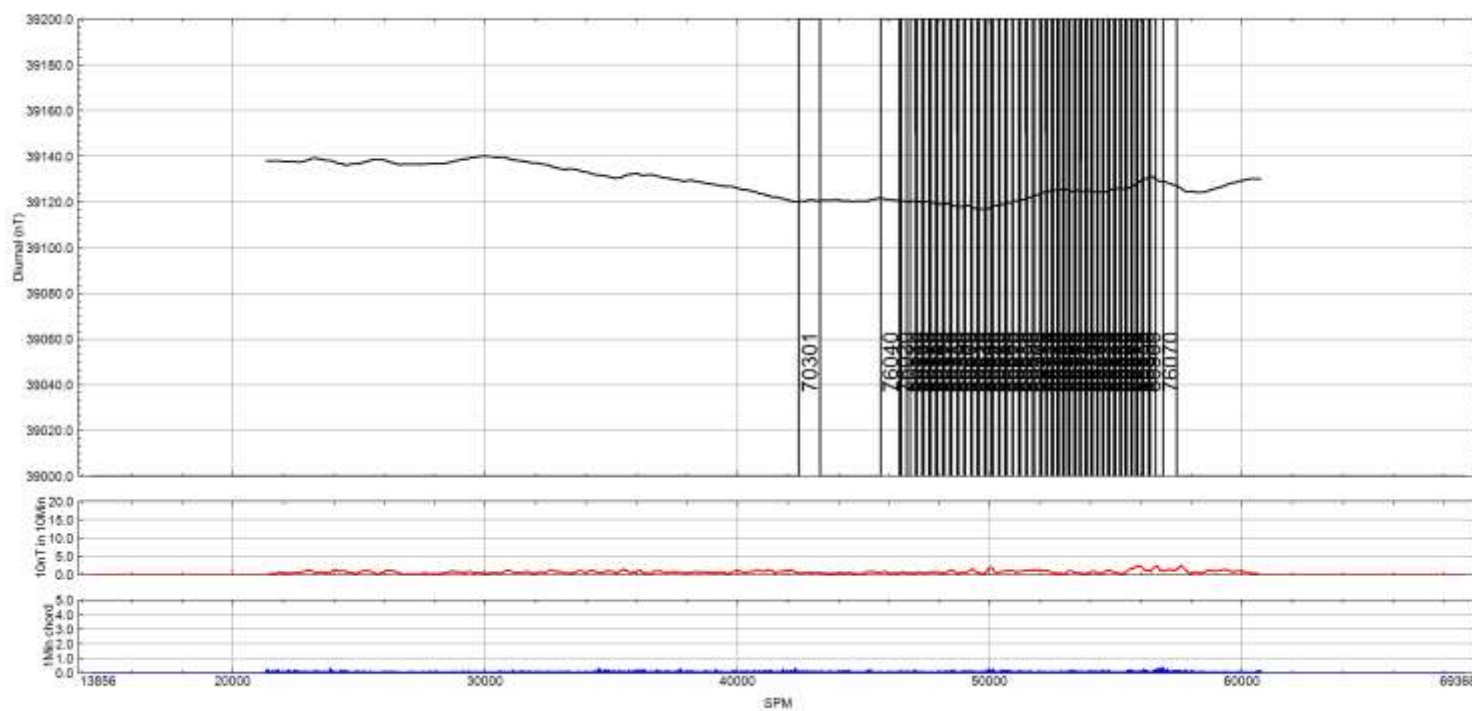
DIURNAL DURING F178, 2021/08/07



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec\210130\processing\workspace\Diurnal.gdb linegroup: DF178

2021/08/07

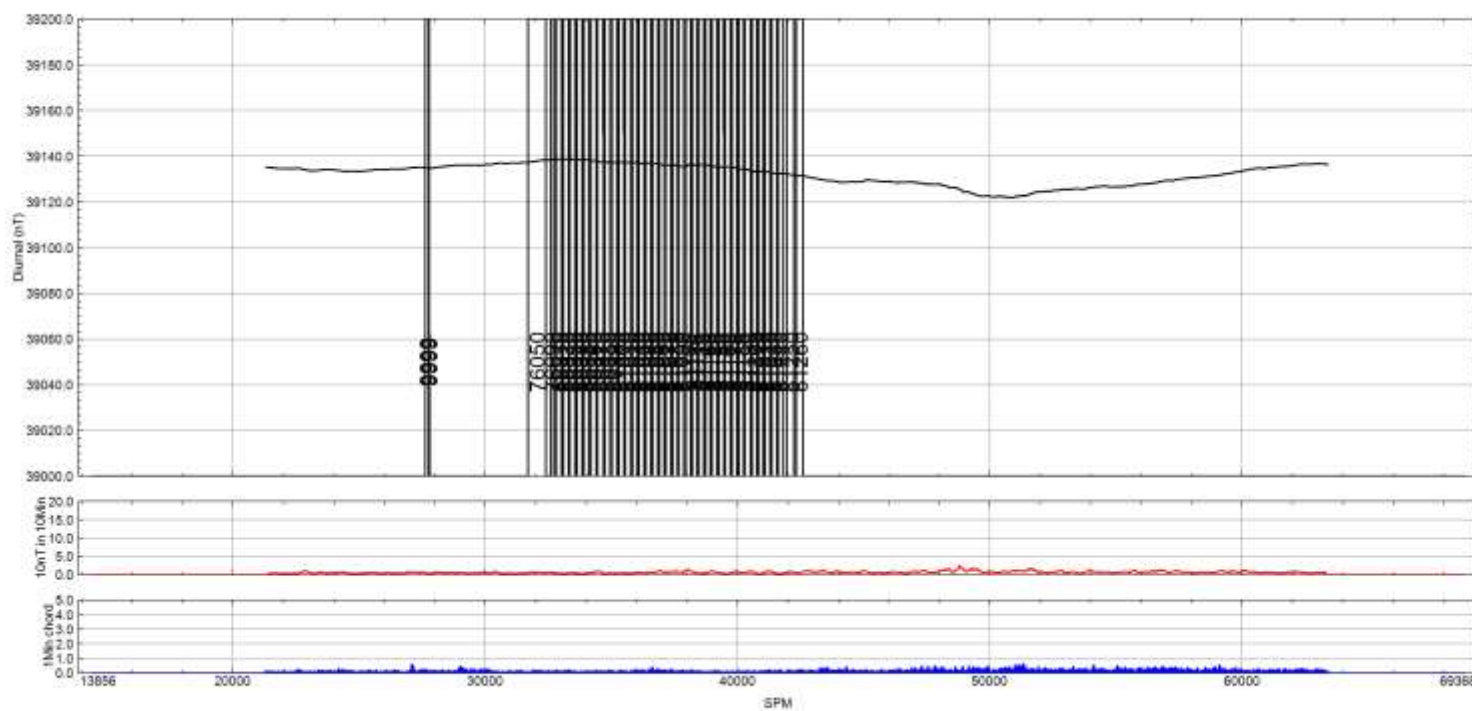
DIURNAL DURING F179, 2021/08/07



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec 210130\processing\workspace\Diurnal.gdb linegroup: DF179

2021/08/07

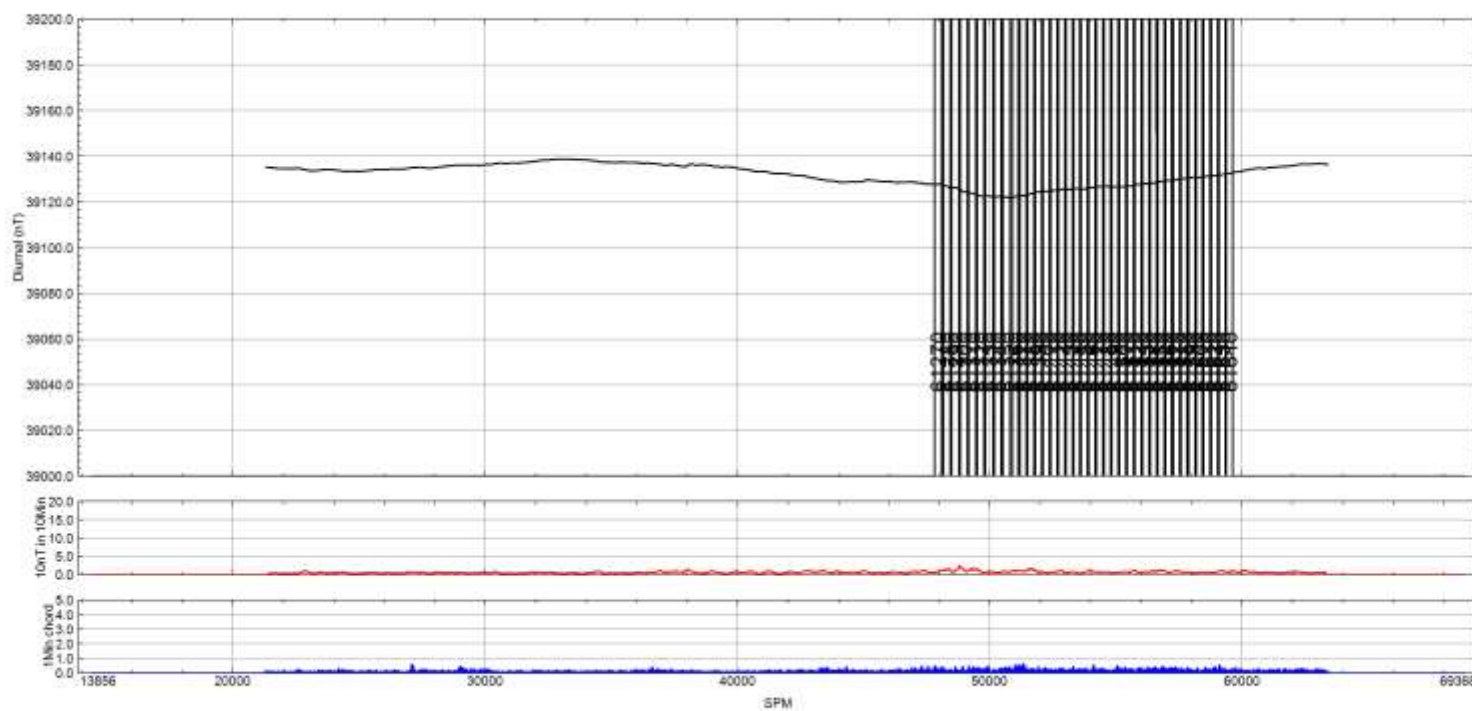
DIURNAL DURING F180, 2021/08/08



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec\210130\processing\workspace\Diurnal.gdb linegroup: DF180

2021/08/08

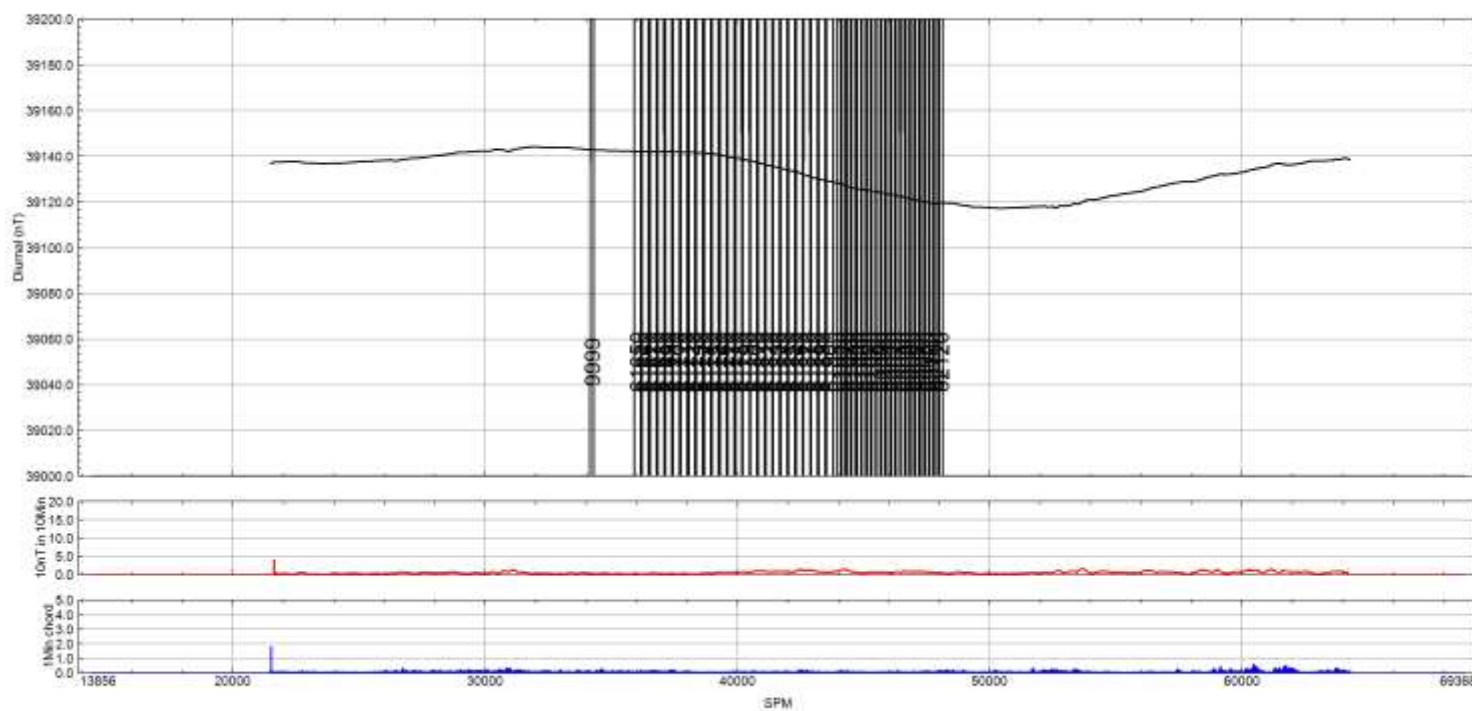
DIURNAL DURING F181, 2021/08/08



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec 210130\processing\workspace\Diurnal.gdb linegroup: DF181

2021/08/08

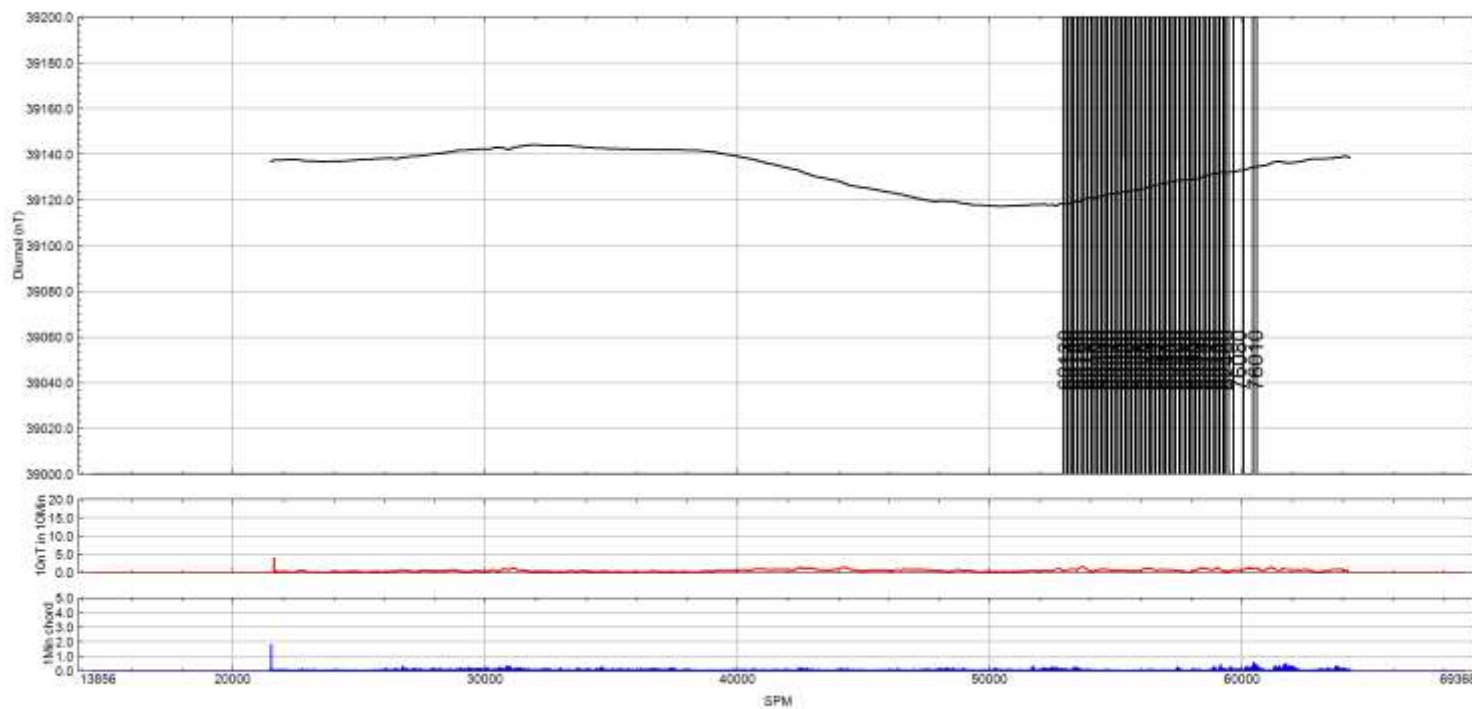
DIURNAL DURING F182, 2021/08/09



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec 210130\processing\workspace\Diurnal.gdb linegroup: DF182

2021/08/09

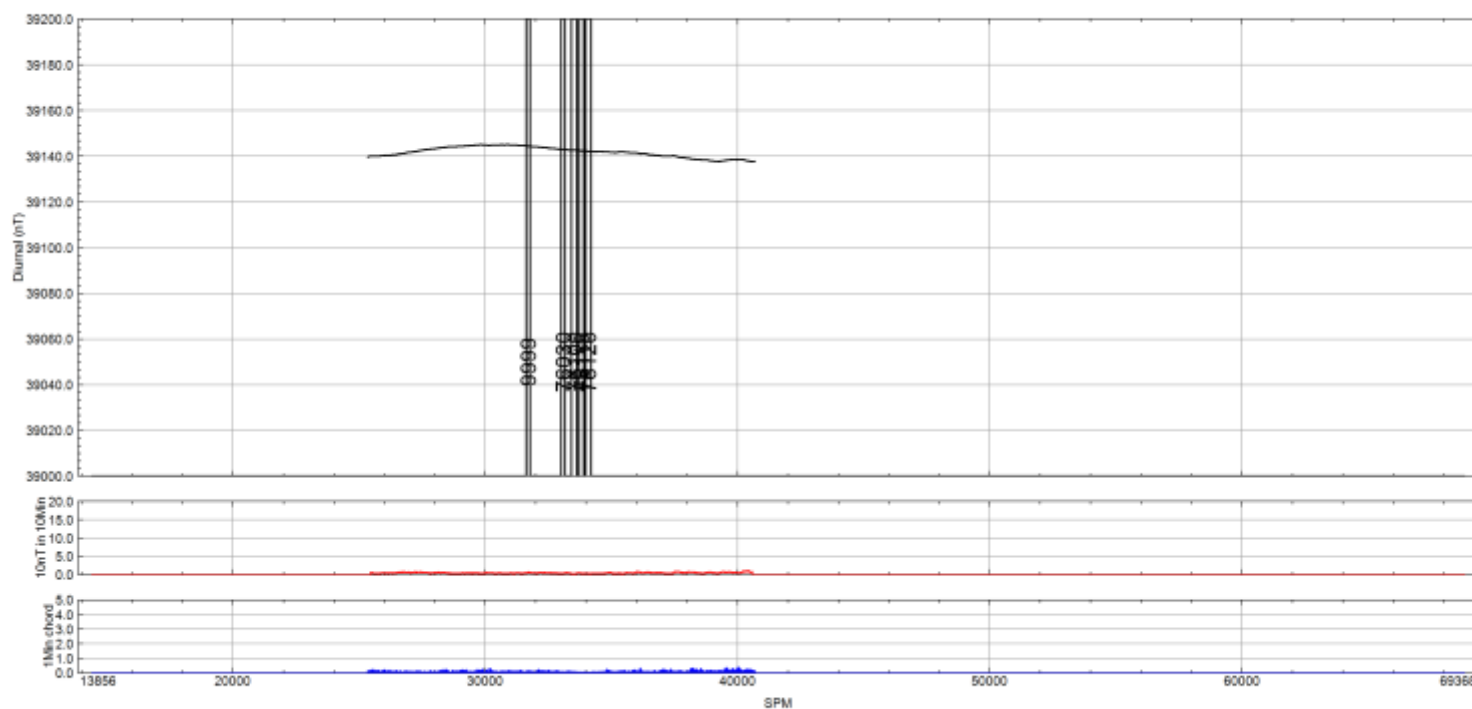
DIURNAL DURING F183, 2021/08/09



database: c:\obj\2585\gsnsw_ga\cobar\mag\spec 210130\processing\workspace\Diurnal.gdb linegroup: DF183

2021/08/09

DIURNAL DURING F184, 2021/08/10



database: c:\obol\2585\gsnsw_ga_cobar_mag\spec 210130\processing\workspace\Diurnal.gdb linegroup: DF184

2021/08/10

APPENDIX D: THORIUM BUTTON TEST

GPX Surveys Thorium Source Test	
Job Number	2585
Client	Geoscience Australia
Survey Area	Cobar
Aircraft	VH-STB
Base	Cobar, NSW
Specification	
Maximum Thorium Variation	5%

Date	Flight #	Channel	Peak Position	PHR	Raw (cps)	B/G (cps)	Normalised (cps)	Readings	Running Average	% Change
8/06/2021	101	Thorium	446.6	4.7	379.1	129.1	250.0	380	250.0	0.0
8/06/2021	101	Thorium	445.8	5.1	374.1	125.1	249.0	400	249.5	0.4
12/06/2021	102	Thorium	445.1	5.2	384.0	131.0	253.0	200	250.6	1.4
12/06/2021	102	Thorium	446.1	5.0	382.0	130.0	252.0	201	251.0	0.5
13/06/2021	103	Thorium	445.8	5.1	385.3	130.2	255.1	202	251.8	1.6
13/06/2021	104	Thorium	446.2	5.0	381.6	130.7	250.9	200	251.7	0.4
14/06/2021	105	Thorium	446.2	5.2	379.0	131.3	247.7	201	251.1	1.6
14/06/2021	106	Thorium	446.1	5.1	387.0	132.4	254.5	205	251.5	1.4
15/06/2021	107	Thorium	446.3	5.2	382.8	129.1	253.7	202	251.8	0.9
15/06/2021	108	Thorium	445.3	5.1	378.0	128.0	250.0	200	251.6	0.7
16/06/2021	109	Thorium	446.2	5.2	379.8	130.2	249.5	201	251.4	0.8
16/06/2021	110	Thorium	445.2	5.1	382.8	131.0	251.8	207	251.4	0.1
17/06/2021	111	Thorium	446.2	5.2	382.8	131.3	251.5	201	251.4	0.0
17/06/2021	112	Thorium	445.6	5.2	381.9	131.1	250.8	204	251.4	0.3

19/06/2021	113	Thorium	446.2	5.2	384.4	129.5	254.9	201	251.6	1.4
19/06/2021	114	Thorium	445.8	5.1	383.4	131.1	252.3	200	251.7	0.3
20/06/2021	115	Thorium	446.2	5.2	381.7	130.3	251.4	201	251.6	0.1
20/06/2021	116	Thorium	445.8	5.1	383.3	132.0	251.3	199	251.6	0.2
21/06/2021	117	Thorium	445.9	5.2	377.4	130.6	246.8	201	251.4	1.9
21/06/2021	118	Thorium	445.6	5.1	382.5	129.5	253.0	200	251.5	0.6
22/06/2021	119	Thorium	446.7	5.2	380.6	130.6	250.0	201	251.4	0.6
22/06/2021	120	Thorium	445.5	5.1	385.5	130.2	255.3	201	251.6	1.6
25/06/2021	121	Thorium	446.9	5.2	380.4	131.1	249.3	202	251.5	0.9
26/06/2021	122	Thorium	445.6	5.2	383.0	130.5	252.6	201	251.5	0.4
26/06/2021	123	Thorium	445.5	5.1	380.4	130.1	250.3	207	251.5	0.5
27/06/2021	124	Thorium	445.7	5.1	379.1	129.2	249.9	201	251.4	0.6
28/06/2021	125	Thorium	446.1	5.2	379.4	130.2	249.3	202	251.3	0.9
28/06/2021	126	Thorium	445.4	5.1	377.7	130.1	247.6	200	251.2	1.5
29/06/2021	128	Thorium	445.2	5.1	380.7	130.0	250.7	201	251.0	0.1
29/06/2021	128	Thorium	445.2	5.1	380.7	130.0	250.7	201	251.0	0.1
30/06/2021	129	Thorium	446.1	5.2	380.4	131.5	248.9	201	251.0	0.8
30/06/2021	130	Thorium	445.4	5.1	376.7	129.1	247.6	200	250.8	1.3
2/07/2021	131	Thorium	445.8	5.2	376.5	128.1	248.4	200	250.8	1.0
2/07/2021	131	Thorium	445.6	5.1	382.1	130.4	251.6	200	250.8	0.3
3/07/2021	132	Thorium	445.4	5.2	381.4	129.0	252.4	201	250.8	0.6
3/07/2021	133	Thorium	445.1	5.0	380.9	129.8	251.1	200	250.8	0.1
4/07/2021	134	Thorium	445.8	5.1	381.7	128.9	252.8	212	250.9	0.8
4/07/2021	135	Thorium	445.2	5.1	387.1	128.8	258.3	200	251.1	2.9
5/07/2021	136	Thorium	445.4	5.2	383.3	128.2	255.2	201	251.2	1.6
5/07/2021	137	Thorium	445.2	5.1	387.3	132.6	254.8	209	251.3	1.4
6/07/2021	138	Thorium	445.0	5.2	379.5	128.2	251.4	201	251.3	0.0

6/07/2021	139	Thorium	445.6	5.1	382.9	130.7	252.2	201	251.3	0.4
7/07/2021	140	Thorium	445.1	5.2	378.2	128.5	249.7	204	251.3	0.7
7/07/2021	140	Thorium	445.9	5.1	384.6	132.8	251.9	201	251.3	0.2
10/07/2021	141	Thorium	446.1	5.1	376.4	121.6	254.9	201	251.4	1.4
10/07/2021	141	Thorium	446.2	5.1	381.1	130.5	250.6	201	251.4	0.3
11/07/2021	142	Thorium	445.4	5.2	376.3	128.4	247.9	201	251.3	1.4
11/07/2021	143	Thorium	445.3	5.1	383.9	130.1	253.8	199	251.3	1.0
12/07/2021	144	Thorium	445.8	5.1	382.4	129.7	252.8	200	251.4	0.6
12/07/2021	145	Thorium	445.9	5.2	380.1	130.1	250.1	200	251.3	0.5
13/07/2021	146	Thorium	445.4	5.2	379.5	130.2	249.3	201	251.3	0.8
13/07/2021	147	Thorium	445.1	5.1	382.4	131.0	251.4	200	251.3	0.0
15/07/2021	148	Thorium	445.8	5.1	368.7	121.1	247.6	203	251.2	1.5
15/07/2021	149	Thorium	445.7	5.2	381.3	131.1	250.2	202	251.2	0.4
16/07/2021	150	Thorium	446.5	5.1	384.7	132.4	252.4	202	251.2	0.5
16/07/2021	150	Thorium	446.2	5.1	387.7	133.8	253.9	205	251.3	1.1
18/07/2021	151	Thorium	445.7	5.2	376.5	121.4	255.2	200	251.3	1.6
18/07/2021	152	Thorium	446.1	5.2	387.0	135.7	251.4	201	251.3	0.0
19/07/2021	153	Thorium	445.6	5.1	382.1	131.8	250.2	200	251.3	0.4
19/07/2021	153	Thorium	445.6	5.1	388.3	134.1	254.1	207	251.4	1.1
20/07/2021	154	Thorium	445.3	5.2	384.6	130.7	253.9	201	251.4	1.0
20/07/2021	154	Thorium	446.3	5.2	391.1	133.6	257.5	208	251.5	2.4
21/07/2021	155	Thorium	446.0	5.1	380.1	128.4	251.6	201	251.5	0.0
21/07/2021	156	Thorium	445.9	5.1	381.7	132.8	248.9	200	251.5	1.0
22/07/2021	157	Thorium	446.0	5.1	382.8	130.2	252.5	200	251.5	0.4
22/07/2021	158	Thorium	445.4	5.2	383.9	132.0	251.9	201	251.5	0.1
24/07/2021	159	Thorium	446.6	5.1	382.6	130.6	252.0	199	251.5	0.2
24/07/2021	160	Thorium	446.1	5.0	388.2	130.8	257.4	200	251.6	2.3

25/07/2021	161	Thorium	445.6	5.1	378.3	127.7	250.6	202	251.6	0.4
25/07/2021	162	Thorium	446.1	5.1	383.8	130.0	253.9	201	251.6	0.9
26/07/2021	163	Thorium	445.2	5.2	378.9	128.3	250.6	201	251.6	0.4
26/07/2021	164	Thorium	445.4	5.1	383.6	132.5	251.1	198	251.6	0.2
27/07/2021	165	Thorium	446.0	5.1	377.5	127.3	250.2	201	251.6	0.5
29/07/2021	166	Thorium	446.5	5.2	356.4	112.0	244.4	205	251.5	2.8
30/07/2021	167	Thorium	445.5	5.2	378.1	129.8	248.4	201	251.4	1.2
30/07/2021	168	Thorium	445.6	5.1	382.5	130.3	252.2	200	251.4	0.3
1/08/2021	169	Thorium	445.7	5.1	355.9	111.1	244.8	213	251.4	2.6
1/08/2021	170	Thorium	446.0	5.1	386.2	131.6	254.7	200	251.4	1.3
2/08/2021	171	Thorium	445.7	5.2	382.8	129.0	253.9	201	251.4	1.0
2/08/2021	172	Thorium	445.5	5.2	388.2	131.8	256.4	200	251.5	2.0
3/08/2021	173	Thorium	446.2	5.2	382.9	128.9	254.0	201	251.5	1.0
3/08/2021	174	Thorium	446.1	5.1	386.8	132.3	254.5	199	251.6	1.2
5/08/2021	175	Thorium	445.6	5.2	385.1	128.9	256.2	201	251.6	1.8
6/08/2021	176	Thorium	445.9	5.1	381.9	129.3	252.6	201	251.6	0.4
6/08/2021	177	Thorium	446.1	5.2	385.4	132.8	252.6	201	251.6	0.4
7/08/2021	178	Thorium	445.5	5.2	379.2	128.8	250.4	231	251.6	0.5
7/08/2021	179	Thorium	445.8	5.1	385.3	130.2	255.2	202	251.7	1.4
8/08/2021	180	Thorium	446.1	5.2	381.7	129.0	252.7	201	251.7	0.4
8/08/2021	181	Thorium	445.4	5.2	380.5	128.9	251.6	250	251.7	0.0
9/08/2021	182	Thorium	446.5	5.1	381.9	130.8	251.1	201	251.7	0.2
9/08/2021	183	Thorium	445.8	5.2	382.9	130.5	252.4	201	251.7	0.3
10/08/2021	184	Thorium	446.0	5.1	385.9	129.8	256.1	200	251.7	1.8
10/08/2021	184	Thorium	446.0	5.2	392.7	135.1	257.6	217	251.8	2.3

APPENDIX E: GROUND CALIBRATION POSITION CHECK

GPX Surveys	
Aircraft GPS Position Check	
Job Number	2585
Client	Geoscience Australia
Survey Area	Cobar
Aircraft	VH-STB
Base	Cobar, NSW

Date	Flight #	Pre/Post	Easting (m)	Northing (m)	GPS Height (m)
8/06/2021	101	Pre	385948.8	6510354.0	219.8
8/06/2021	101	Post	385948.5	6510353.2	220.7
12/06/2021	102	Pre	385948.2	6510353.4	220.8
12/06/2021	102	Post	385948.3	6510353.4	220.8
13/06/2021	103	Pre	385948.9	6510354.1	220.4
13/06/2021	104	Post	385948.9	6510354.0	220.5
14/06/2021	105	Pre	385948.2	6510353.7	219.8
14/06/2021	106	Post	385949.1	6510353.2	220.9
15/06/2021	107	Pre	385947.9	6510352.9	220.9
15/06/2021	108	Post	385949.3	6510353.4	220.4
16/06/2021	109	PRE	385948.4	6510353.5	220.2
16/06/2021	110	Post	385949.3	6510352.7	220.3
17/06/2021	111	Pre	385948.6	6510353.1	220.1
17/06/2021	112	Post	385949.4	6510353.7	220.6
19/06/2021	113	Pre	385948.5	6510353.8	220.6
19/06/2021	114	Post	385948.8	6510352.8	220.8

20/06/2021	115	Pre	385948.1	6510353.0	220.0
20/06/2021	116	Post	385949.3	6510353.1	221.0
21/06/2021	117	Pre	385948.6	6510352.9	219.8
21/06/2021	118	Post	385949.0	6510352.5	220.7
21/06/2021	119	Pre	385948.2	6510353.0	220.4
22/06/2021	119	Pre	385948.2	6510353.0	220.4
22/06/2021	120	Post	385948.8	6510353.2	221.4
25/06/2021	121	Pre	385949.3	6510353.8	220.5
26/06/2021	122	Pre	385948.2	6510353.2	220.8
26/06/2021	123	Post	385949.2	6510353.2	221.4
27/06/2021	124	Pre	385948.6	6510353.5	221.4
28/06/2021	125	Pre	385948.3	6510353.5	221.0
28/06/2021	126	Post	385949.2	6510353.1	221.8
29/06/2021	128	Post	385948.8	6510353.5	221.1
30/06/2021	129	Pre	385948.4	6510353.4	220.1
30/06/2021	130	Post	385949.4	6510353.3	221.9
2/07/2021	131	Pre	385948.0	6510353.4	220.0
2/07/2021	131	Post	385949.0	6510352.2	221.9
3/07/2021	132	Pre	385948.7	6510352.5	221.0
3/07/2021	133	Post	385949.4	6510352.6	221.6
4/07/2021	134	Pre	385949.3	6510353.1	221.0
4/07/2021	135	Post	385949.3	6510353.4	221.9
5/07/2021	136	Pre	385948.8	6510353.5	220.8
5/07/2021	137	Post	385949.0	6510352.9	221.8
6/07/2021	138	Pre	385948.7	6510353.3	221.1
6/07/2021	139	Post	385949.7	6510353.1	221.6
7/07/2021	140	Pre	385949.1	6510353.8	220.5

7/07/2021	140	Post	385949.4	6510352.6	221.3
10/07/2021	141	Pre	385948.7	6510353.5	221.4
10/07/2021	141	Post	385949.1	6510353.3	221.0
11/07/2021	142	Pre	385949.0	6510353.6	221.6
11/07/2021	143	Post	385949.2	6510353.1	220.4
12/07/2021	144	Pre	385948.7	6510353.3	221.1
12/07/2021	145	Post	385949.4	6510353.3	220.9
13/07/2021	146	Pre	385949.1	6510353.4	220.6
13/07/2021	147	Post	385949.0	6510353.3	221.1
15/07/2021	148	Pre	385948.7	6510352.6	220.9
15/07/2021	149	Post	385948.7	6510352.3	221.0
16/07/2021	150	Pre	385948.1	6510353.2	221.6
16/07/2021	150	Post	385948.6	6510353.0	219.3
18/07/2021	151	Pre	385948.5	6510352.4	220.9
18/07/2021	152	Post	385949.1	6510353.1	220.4
19/07/2021	153	Pre	385948.7	6510352.4	221.5
19/07/2021	153	Post	385949.1	6510352.6	221.4
20/07/2021	154	Pre	385948.8	6510352.6	221.4
20/07/2021	154	Post	385949.2	6510353.4	221.7
21/07/2021	155	Pre	385948.7	6510353.0	221.3
21/07/2021	156	Post	385949.4	6510353.2	220.8
22/07/2021	157	Pre	385949.0	6510352.7	221.5
22/07/2021	158	Post	385949.4	6510353.4	221.6
24/07/2021	159	Pre	385948.6	6510353.2	221.5
24/07/2021	160	Post	385949.3	6510353.0	220.0
25/07/2021	161	Pre	385949.0	6510352.6	221.8
25/07/2021	162	Post	385949.6	6510352.5	221.7

26/07/2021	163	Pre	385948.9	6510353.0	221.6
26/07/2021	164	Post	385949.5	6510353.8	219.9
27/07/2021	165	Pre	385948.9	6510352.9	221.6
29/07/2021	166	Pre	385949.2	6510352.8	221.6
30/07/2021	167	Pre	385948.5	6510353.3	221.8
30/07/2021	168	Post	385949.1	6510352.9	220.2
1/08/2021	169	Pre	385948.7	6510352.7	221.7
1/08/2021	170	Post	385948.9	6510353.7	221.1
2/08/2021	171	Pre	385948.8	6510353.3	221.4
2/08/2021	172	Post	385949.2	6510353.2	221.1
3/08/2021	173	Pre	385948.7	6510352.1	221.6
3/08/2021	174	Post	385949.0	6510353.3	220.4
5/08/2021	175	Pre	385949.4	6510353.2	221.8
6/08/2021	176	Pre	385949.2	6510353.0	221.9
6/08/2021	177	Post	385949.4	6510353.0	220.6
7/08/2021	178	Pre	385949.5	6510353.0	221.1
7/08/2021	179	Post	385949.1	6510353.5	220.1
8/08/2021	180	Pre	385949.6	6510353.4	221.7
8/08/2021	181	Post	385948.2	6510353.5	221.9
9/08/2021	182	Pre	385948.5	6510352.8	221.9
9/08/2021	183	Post	385949.1	6510353.1	222.2
10/08/2021	184	Pre	385949.4	6510353.2	221.4
10/08/2021	184	Post	385948.9	6510352.2	221.0

APPENDIX F: LOW LEVEL TEST LINE RESULTS

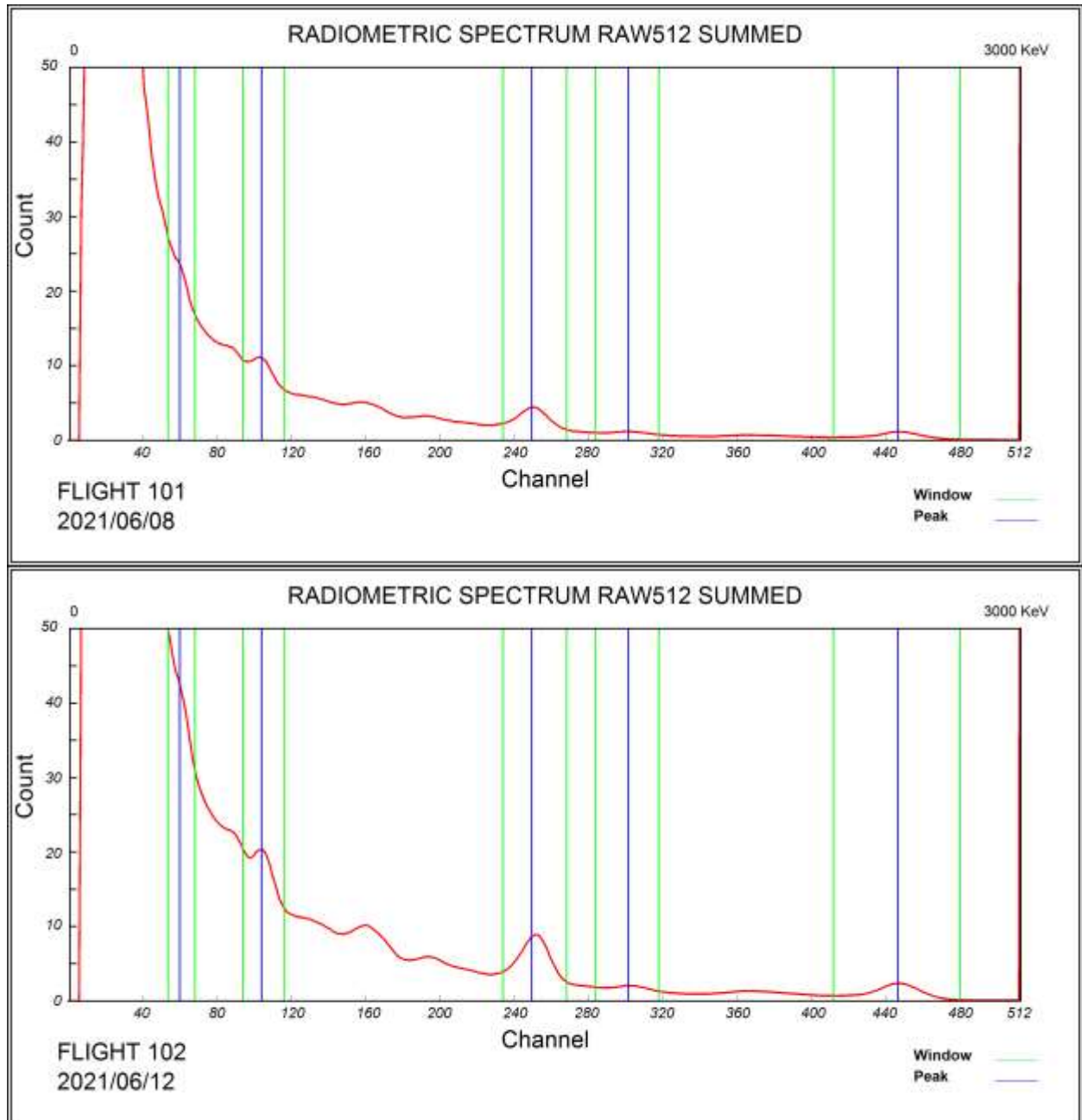
GPX Surveys	
Low Level Test Line Thorium Variation	
Job Number	2585
Client	Geoscience Australia
Survey Area	Cobar
Aircraft	VH-STB
Base	Cobar, NSW
Line Number	1111
Specification	
Maximum Thorium Variation	10%

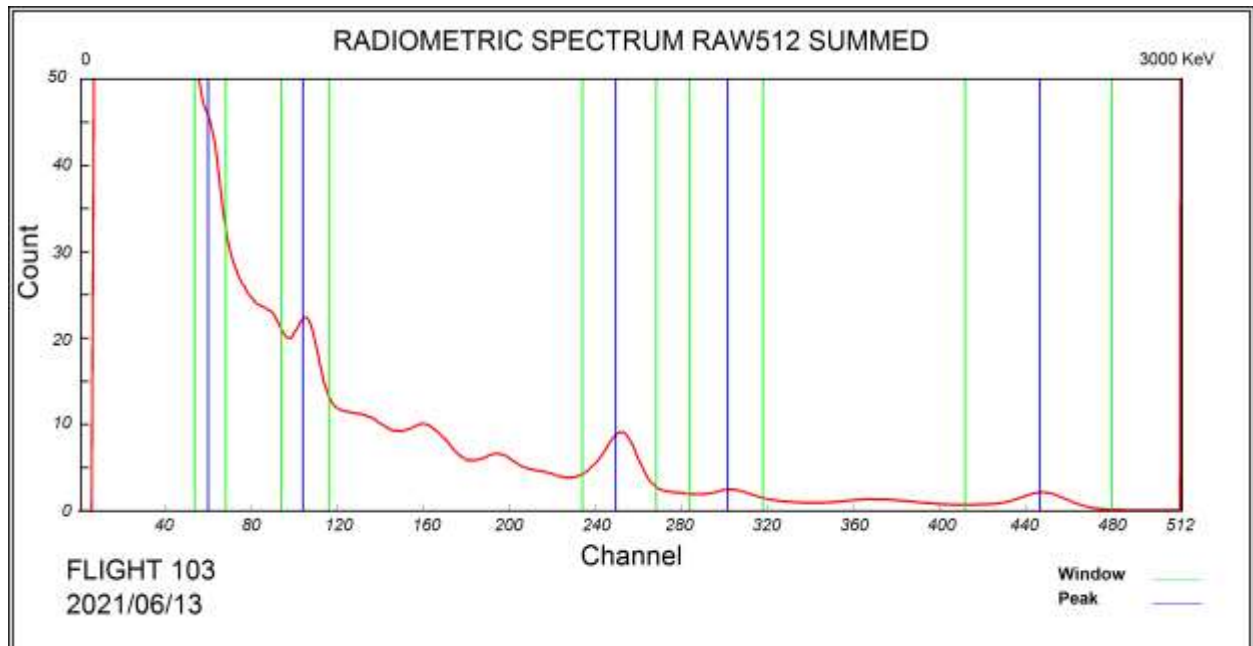
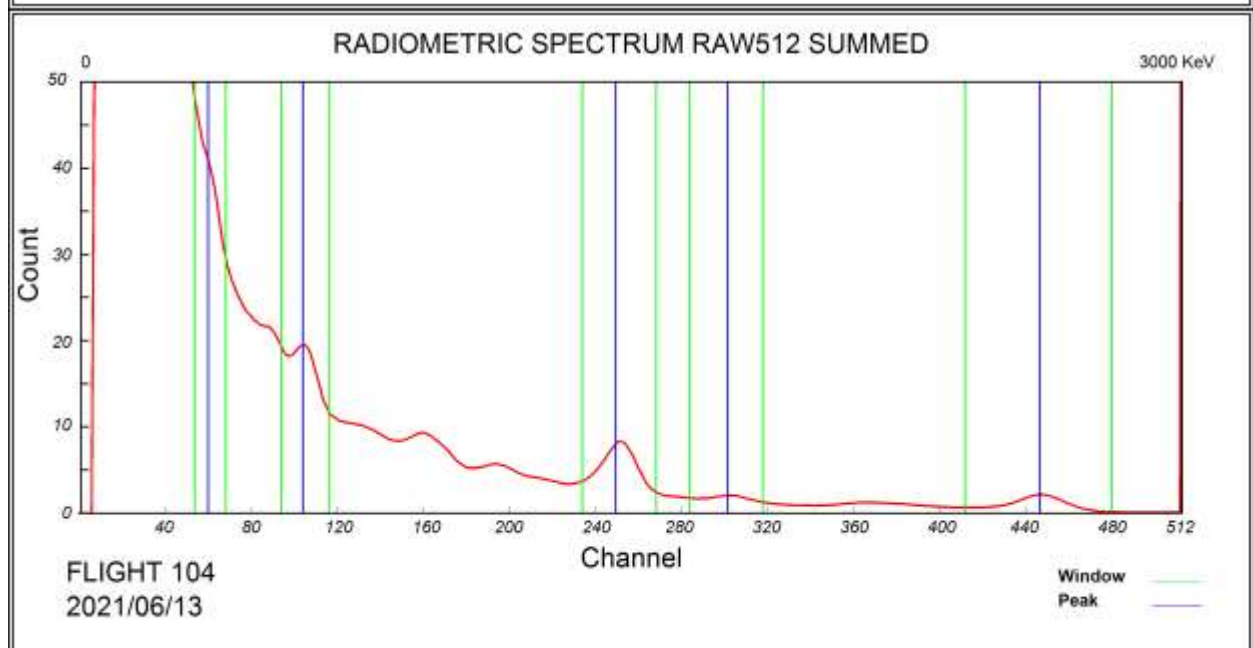
Date	Flight #	Mean TC (cps)	Mean K (cps)	Mean U (cps)	Mean Th (cps)	Running Average	% Change
8/06/2021	101	1787.0	111.1	20.0	47.3	47.3	0.0
12/06/2021	102	1757.9	103.9	23.5	46.6	47.0	1.4
13/06/2021	103	1701.6	104.0	20.9	44.7	46.2	4.8
14/06/2021	105	1738.6	103.9	24.0	44.8	45.9	3.0
15/06/2021	107	1750.2	104.5	22.7	45.1	45.7	1.7
16/06/2021	109	1758.4	103.8	23.8	44.8	45.5	2.0
17/06/2021	111	1694.6	101.4	21.7	45.2	45.5	0.7
19/06/2021	113	1651.6	103.0	16.0	45.4	45.5	0.2
20/06/2021	115	1665.8	99.6	20.9	45.3	45.5	0.4
21/06/2021	117	1626.4	102.8	16.5	45.4	45.5	0.2
22/06/2021	119	1637.9	102.4	16.1	45.2	45.4	0.5
25/06/2021	121	1642.3	98.2	18.8	43.8	45.3	3.5

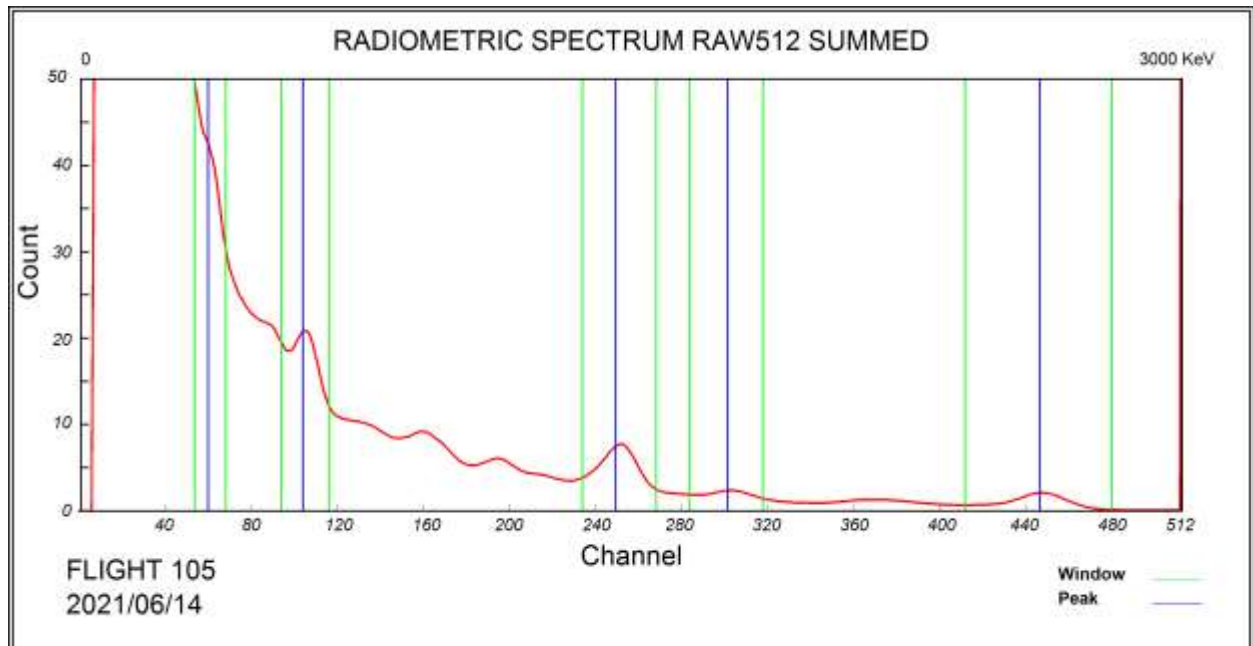
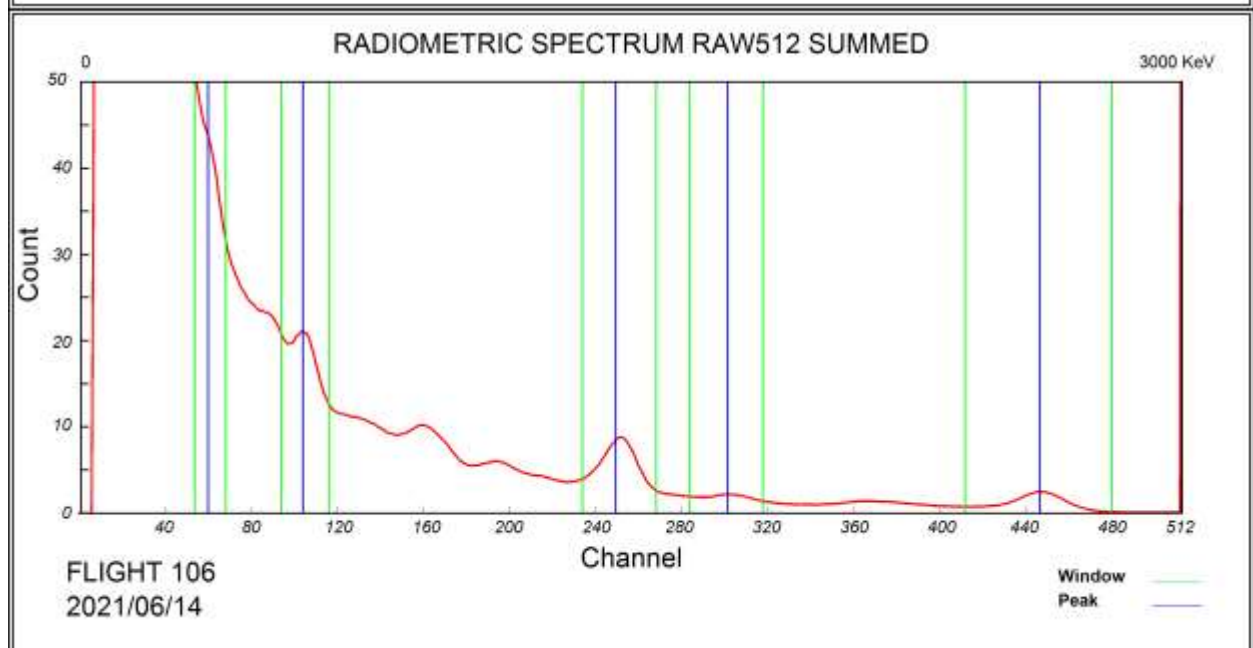
26/06/2021	122	1653.9	99.4	20.2	44.6	45.3	1.5
27/06/2021	124	1606.5	101.4	17.1	43.8	45.2	3.1
28/06/2021	125	1737.0	101.7	24.2	45.4	45.2	0.6
29/06/2021	127	1638.5	102.1	14.8	46.7	45.3	3.4
30/06/2021	129	1699.6	104.3	19.9	46.4	45.3	2.5
2/07/2021	131	1628.4	100.7	18.9	44.2	45.3	2.5
3/07/2021	132	1700.5	102.4	24.4	42.9	45.1	5.2
4/07/2021	134	1700.8	104.0	22.0	44.9	45.1	0.6
5/07/2021	136	1726.2	101.4	23.9	45.8	45.2	1.4
6/07/2021	138	1821.9	106.4	27.9	45.5	45.2	0.8
7/07/2021	140	1729.8	109.7	18.4	47.1	45.3	4.3
10/07/2021	141	1759.3	105.8	23.4	46.1	45.3	1.9
11/07/2021	142	1766.9	104.2	25.6	44.1	45.2	2.7
12/07/2021	145	1723.6	111.4	16.4	45.3	45.2	0.2
13/07/2021	146	1825.2	112.0	20.9	48.1	45.4	6.3
15/07/2021	148	1812.1	111.3	22.0	47.6	45.4	5.1
18/07/2021	151	1755.1	110.4	20.0	47.0	45.5	3.4
20/07/2021	154	1731.8	106.7	20.4	47.4	45.6	4.1
21/07/2021	156	1733.0	110.3	19.5	45.8	45.6	0.6
22/07/2021	157	1751.8	108.4	21.5	47.4	45.6	4.1
24/07/2021	159	1755.0	105.2	23.2	45.4	45.6	0.4
25/07/2021	161	1630.3	104.7	15.1	45.3	45.6	0.7
26/07/2021	163	1706.5	104.5	19.6	45.1	45.6	1.2
27/07/2021	165	1697.3	104.8	19.3	45.3	45.6	0.7
29/07/2021	166	1655.6	101.8	16.8	43.7	45.5	4.1
30/07/2021	167	1698.9	109.6	16.0	48.3	45.6	6.2
1/08/2021	169	1873.8	111.0	21.5	46.8	45.6	2.6

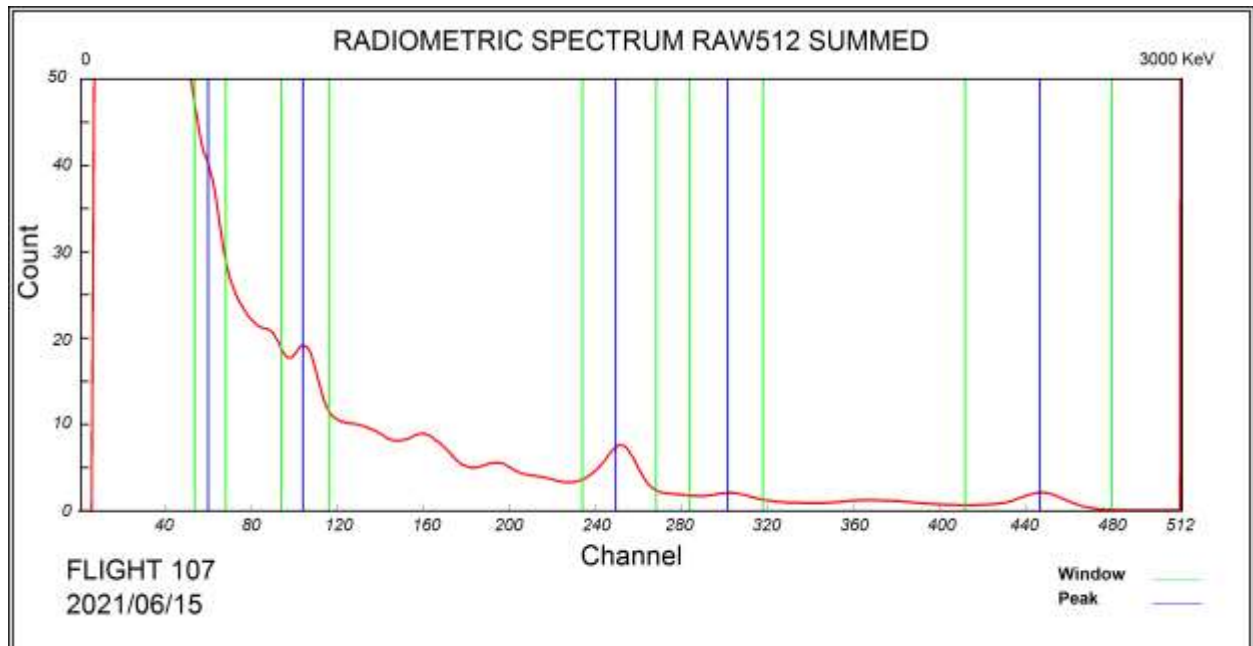
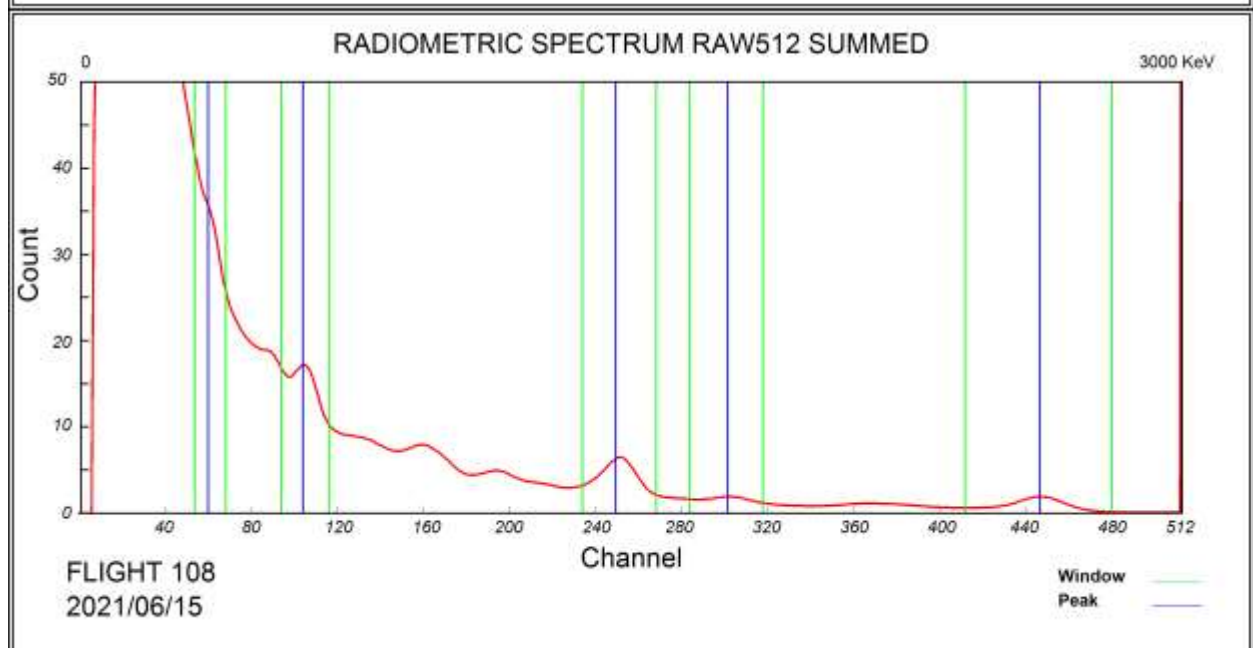
2/08/2021	171	1764.0	110.9	19.1	48.3	45.7	5.8
3/08/2021	173	1662.1	107.6	16.1	45.0	45.7	1.5
5/08/2021	175	1680.5	112.6	13.3	47.9	45.7	4.9
6/08/2021	176	1730.2	114.8	13.9	46.4	45.7	1.5
7/08/2021	178	1766.1	115.7	16.6	48.2	45.8	5.3
8/08/2021	180	1710.2	111.1	17.6	48.4	45.9	5.6
9/08/2021	182	1784.7	106.2	23.8	47.5	45.9	3.6
10/08/2021	184	1838.5	107.1	25.0	47.3	45.9	3.1

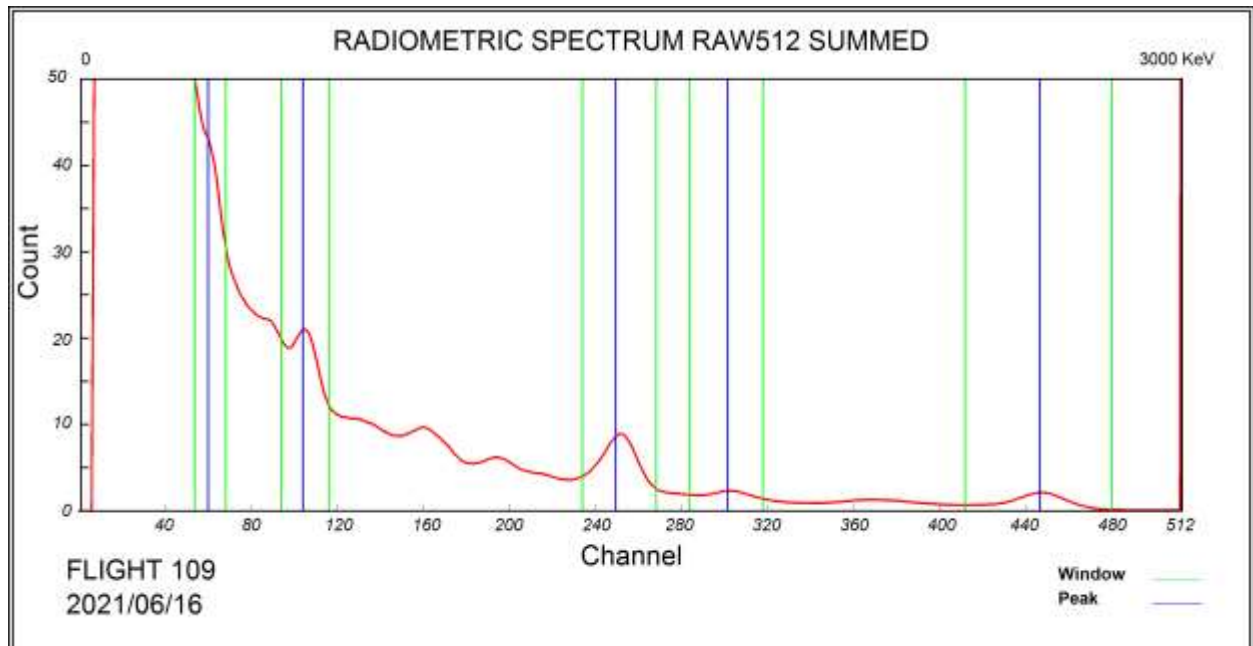
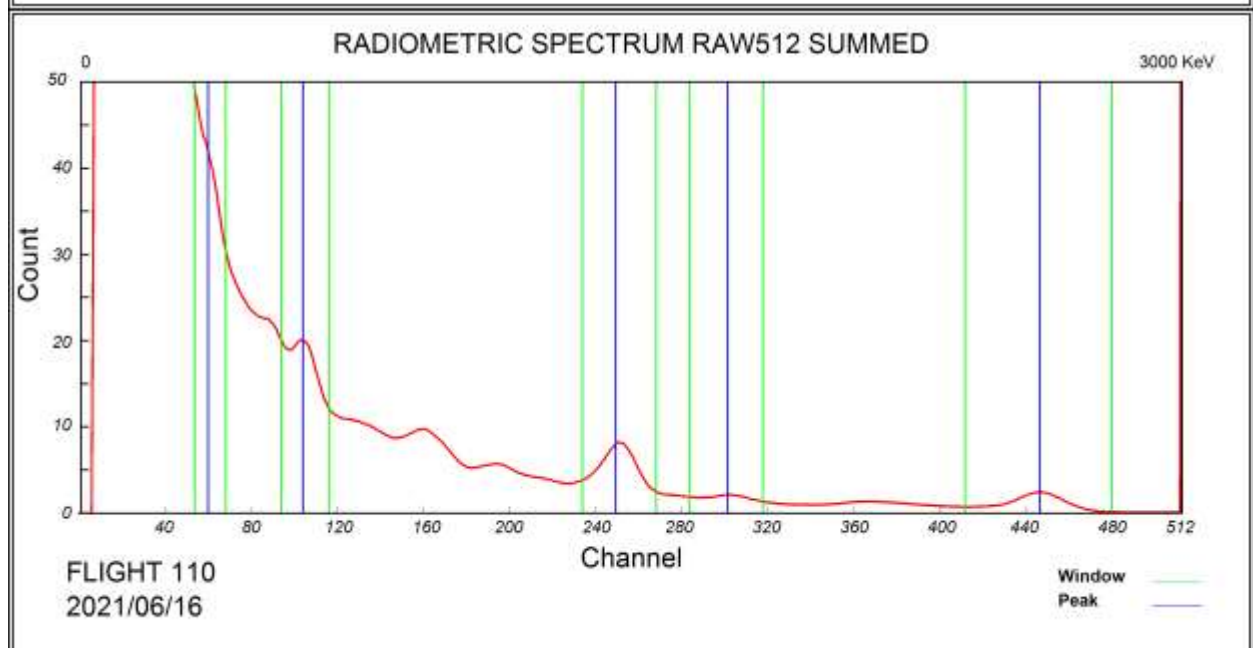
APPENDIX G: RADIOMETRIC SPECTRA PLOTS

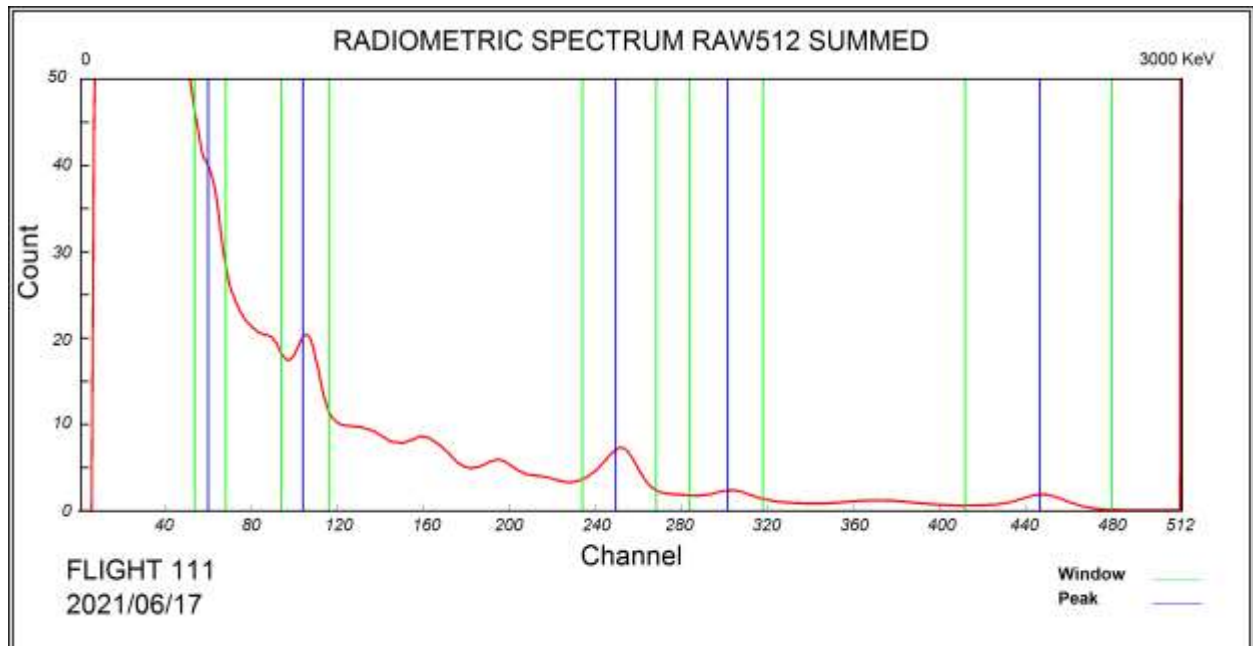
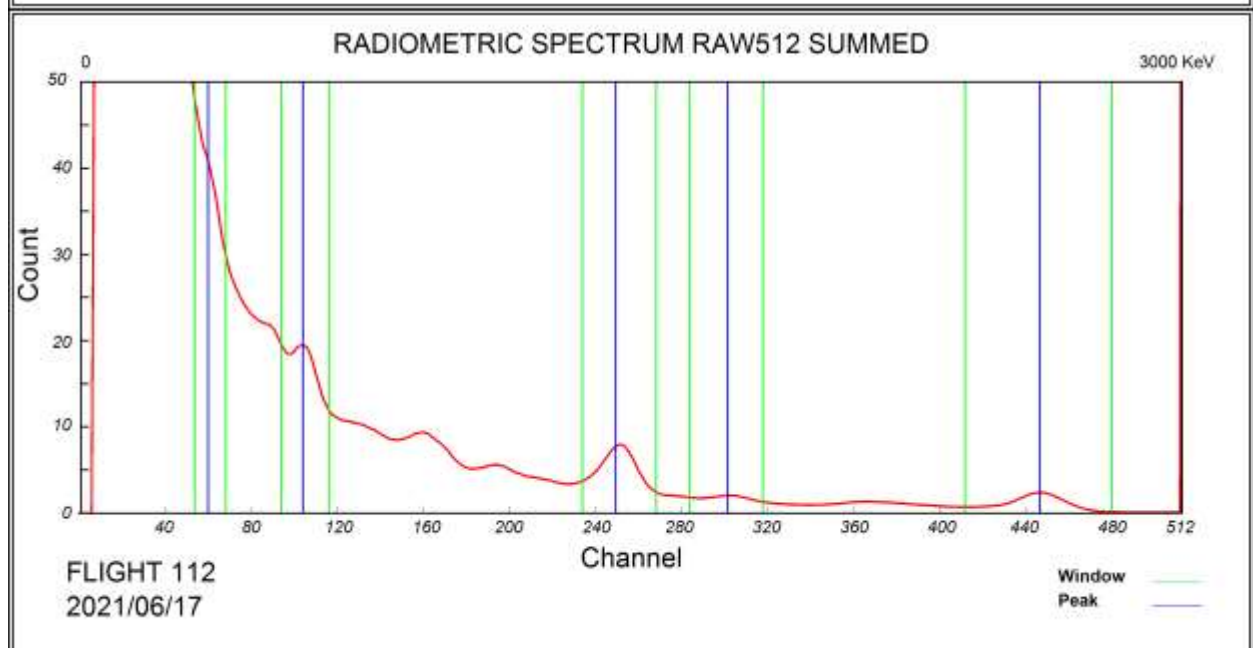


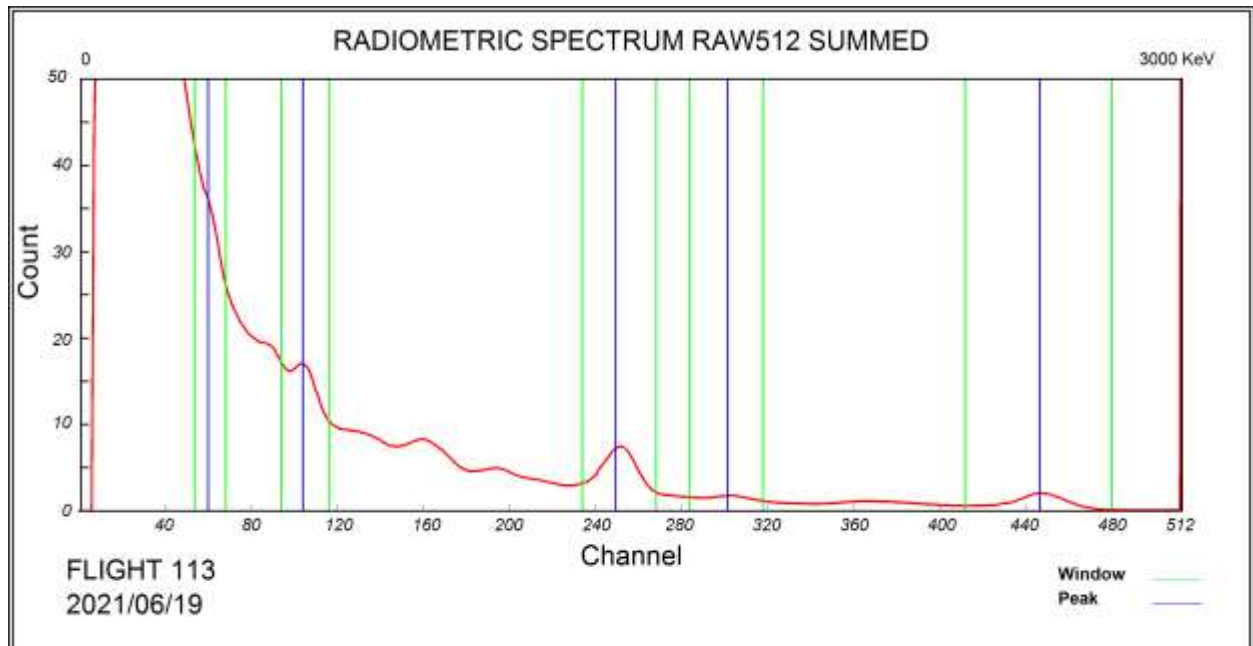
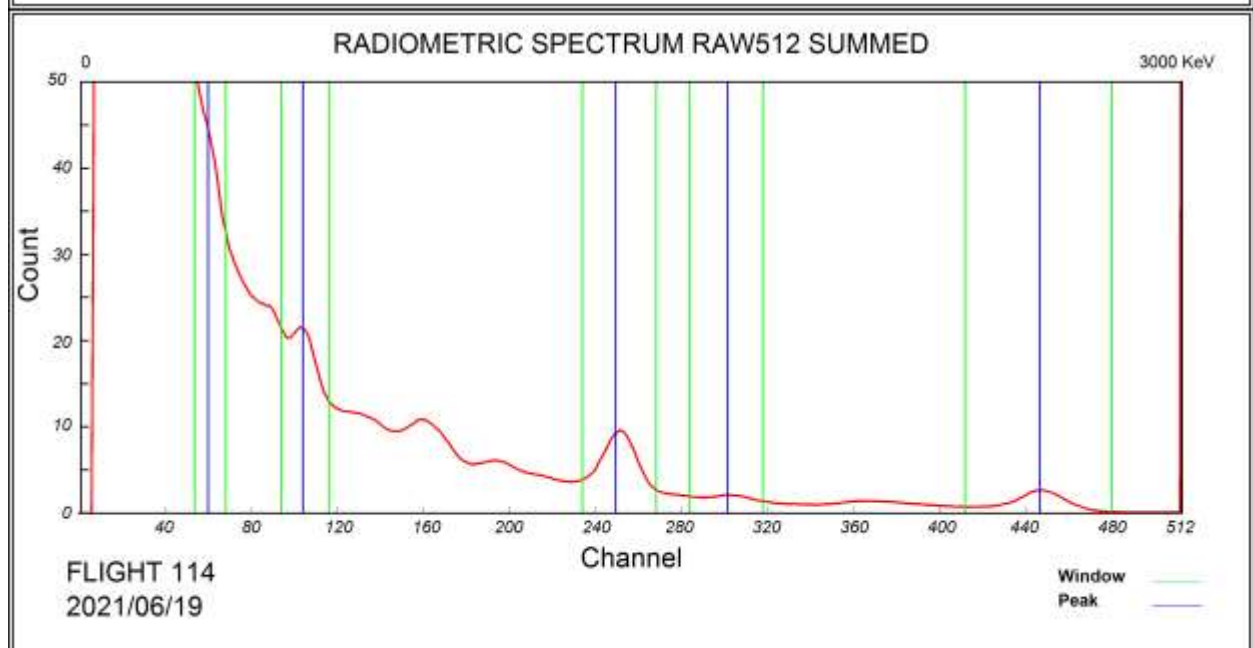


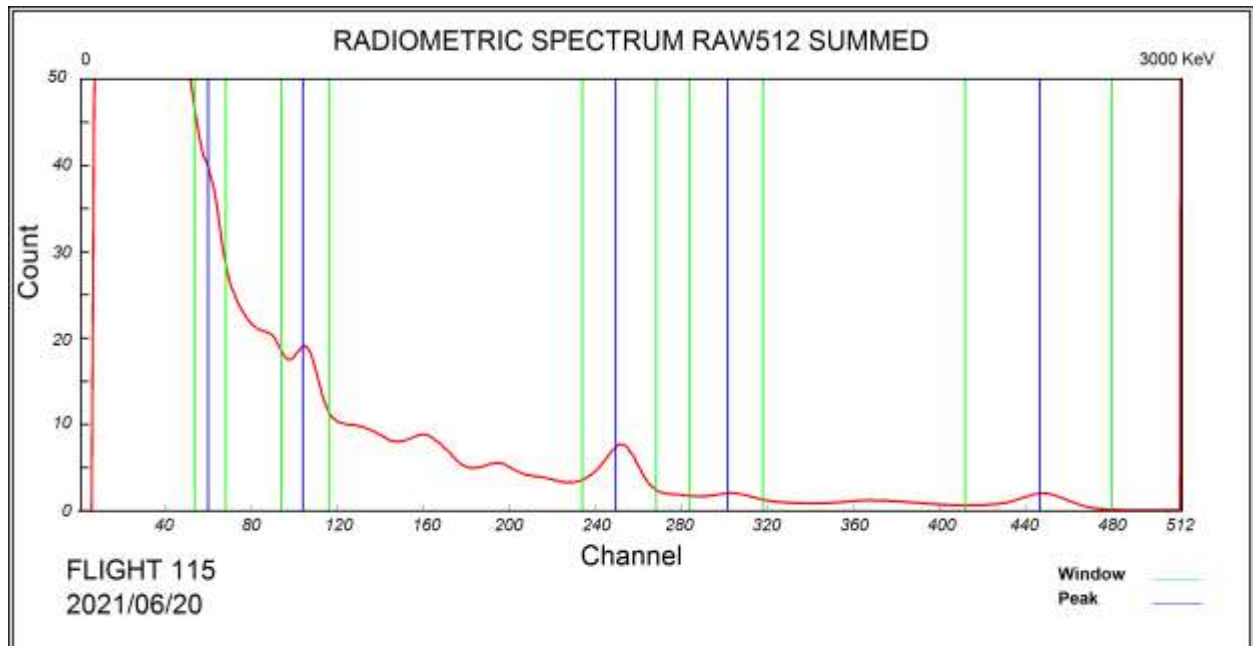
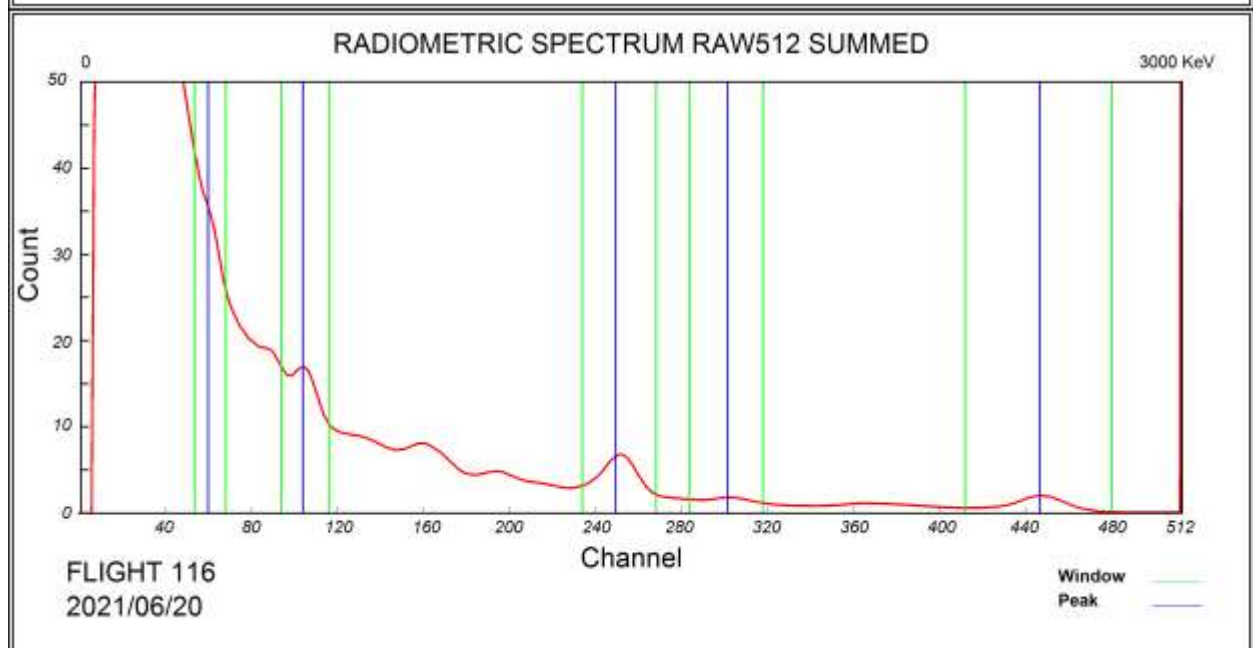


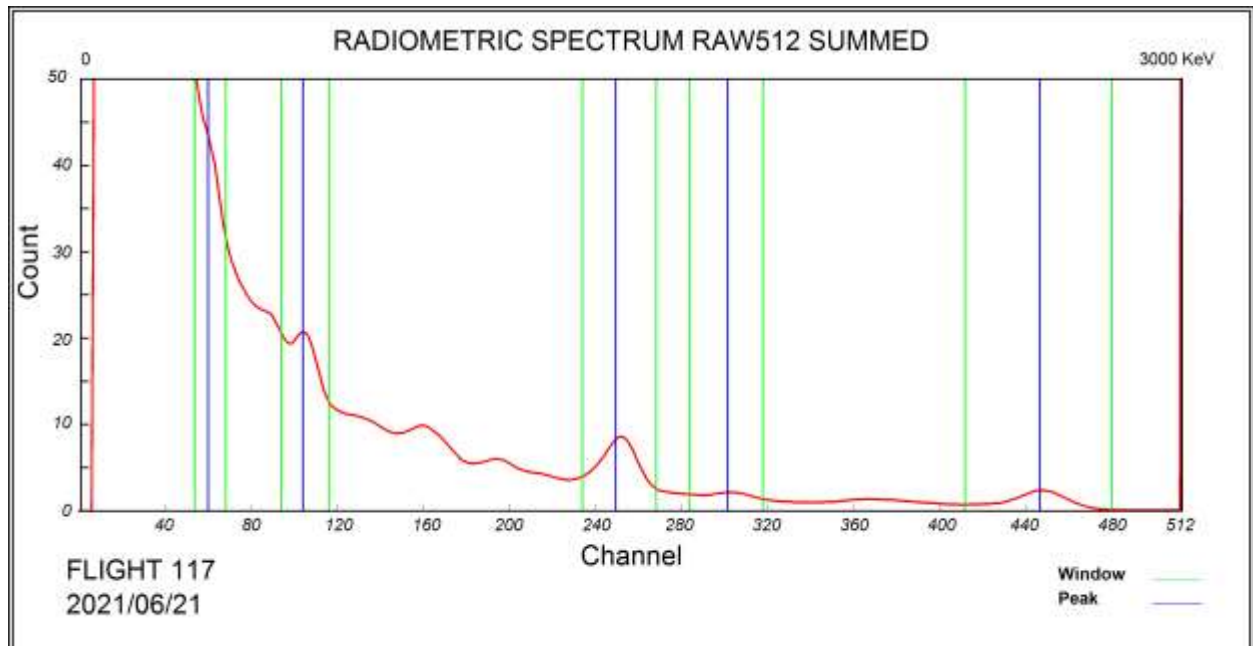
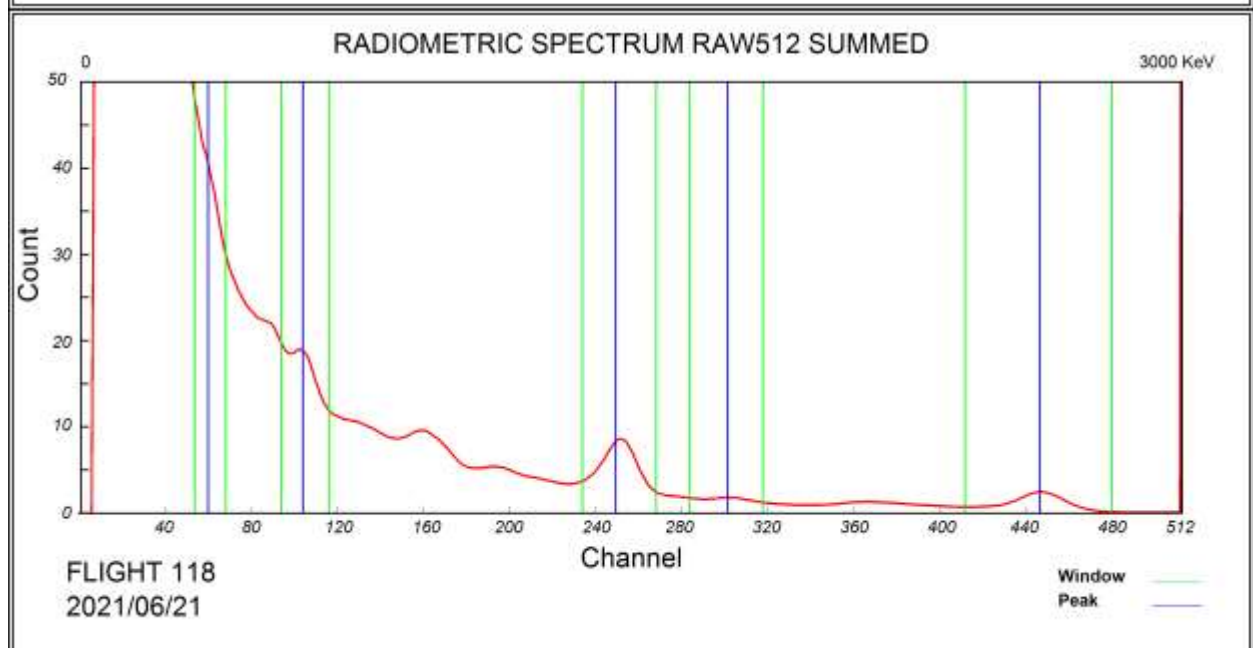


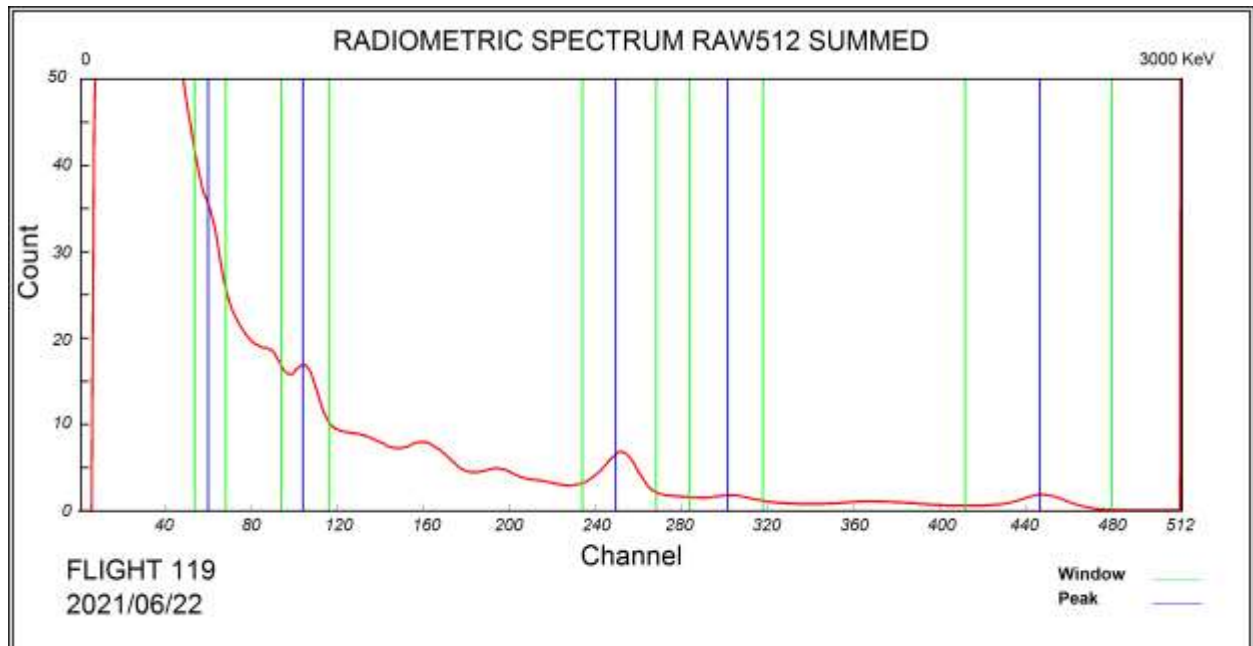
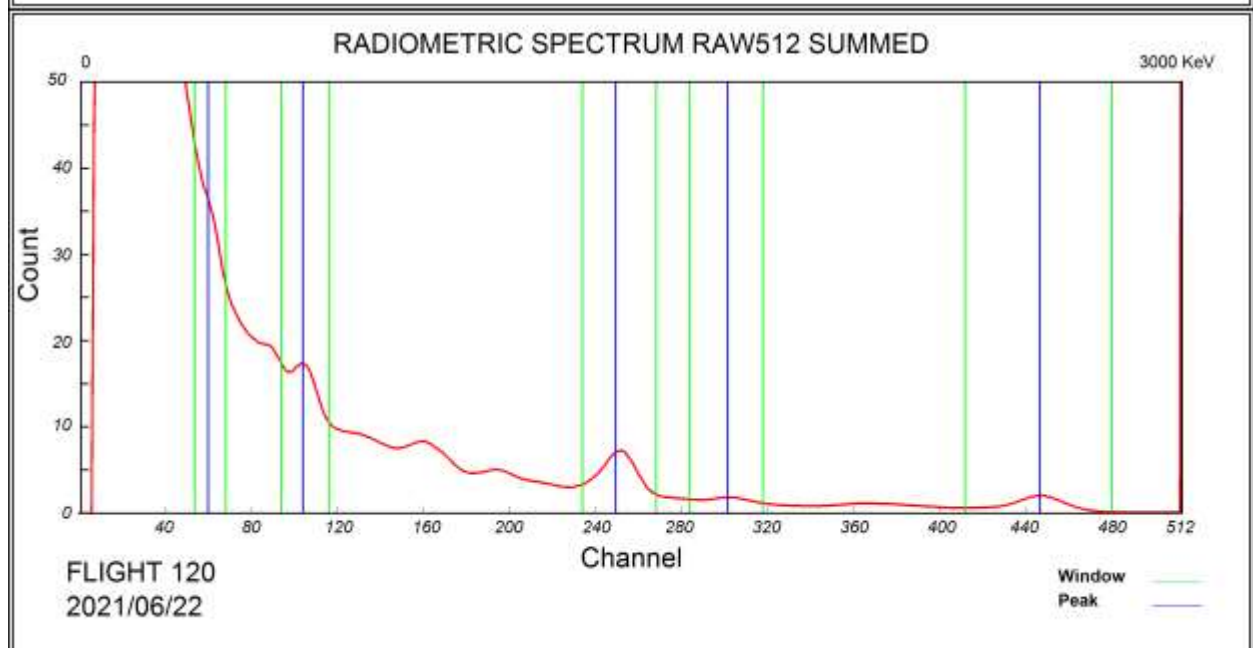


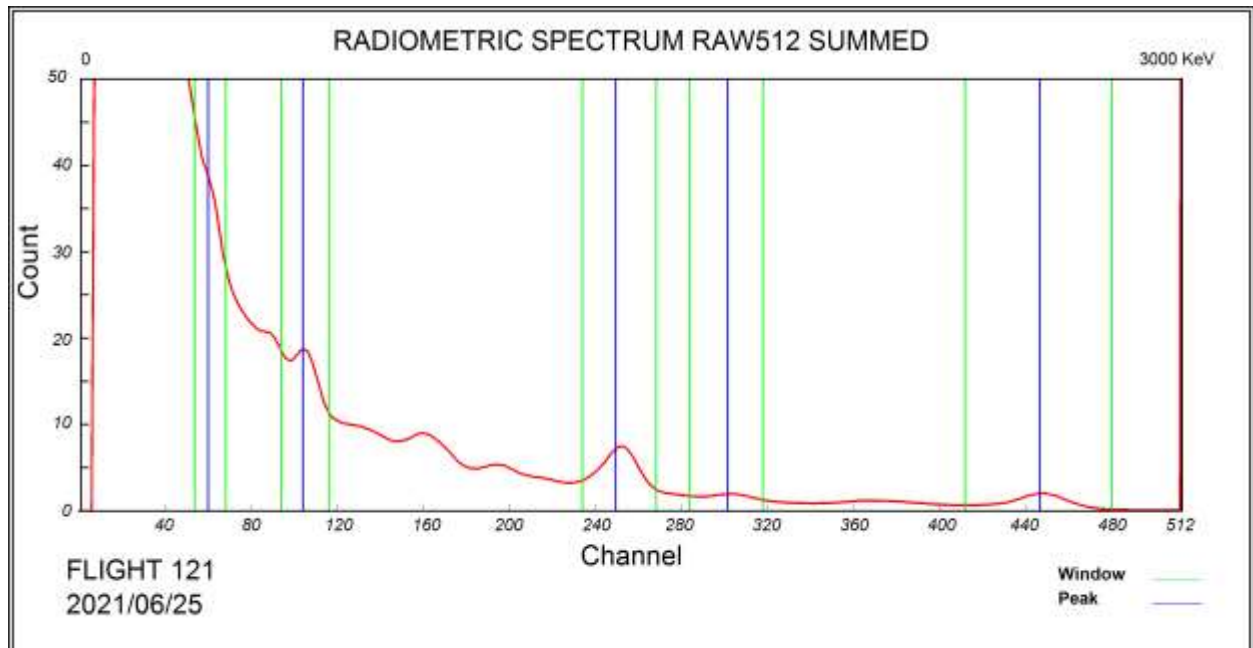
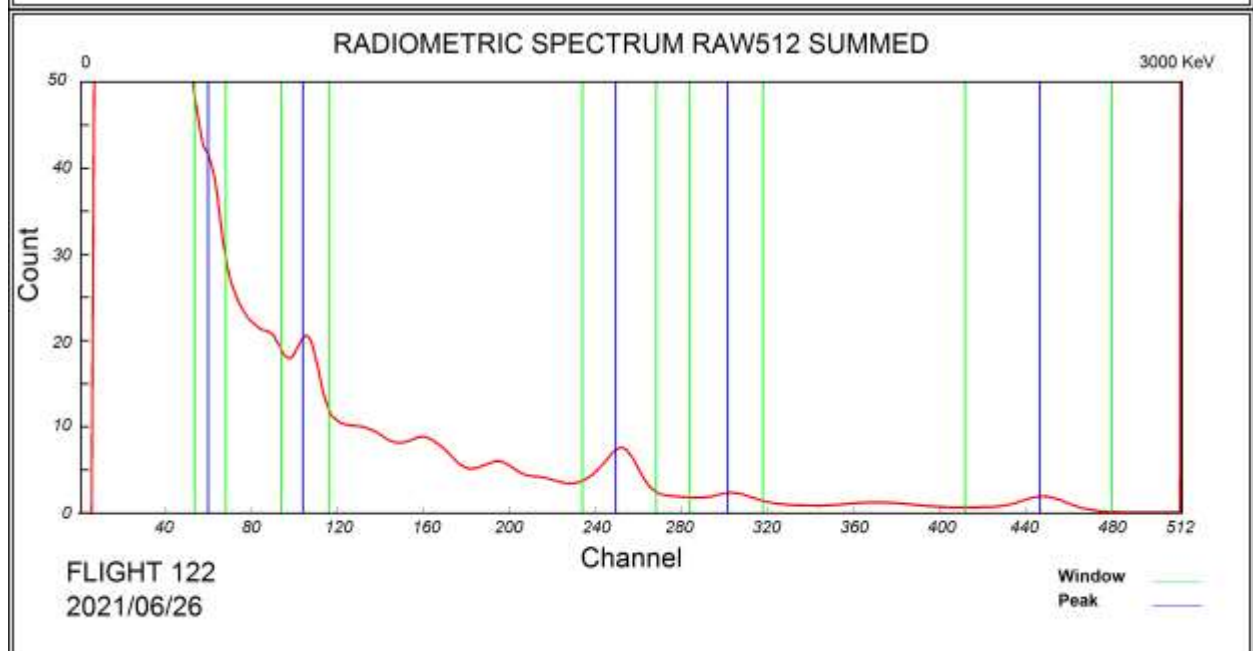


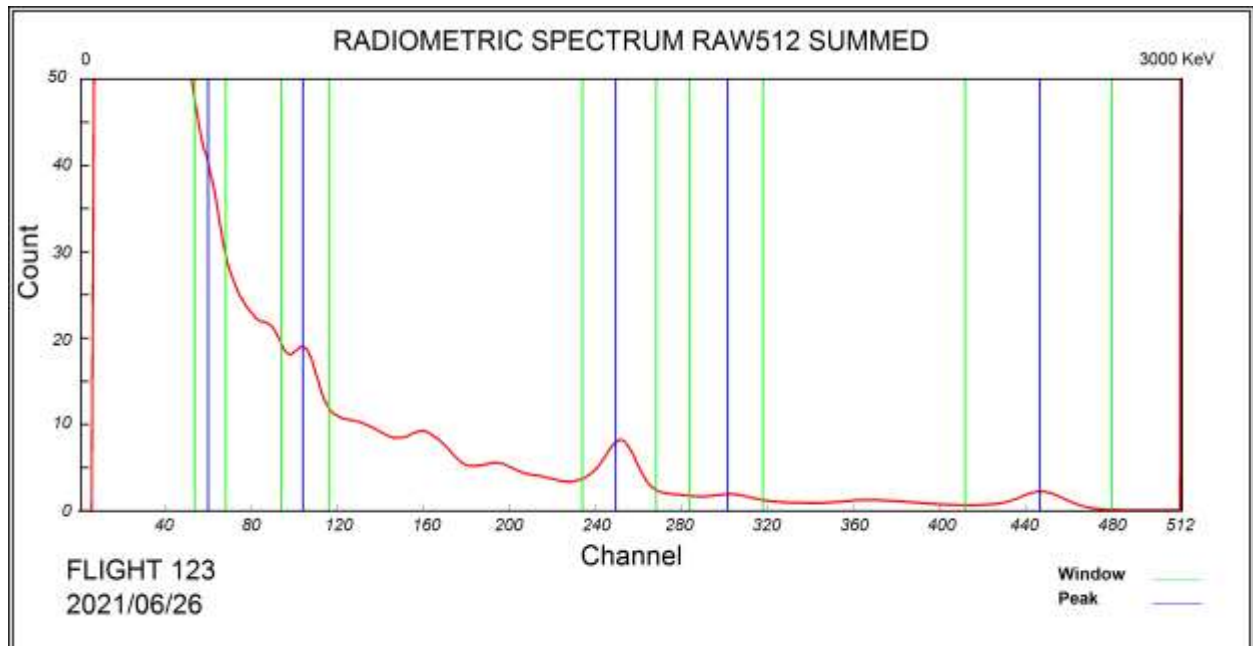
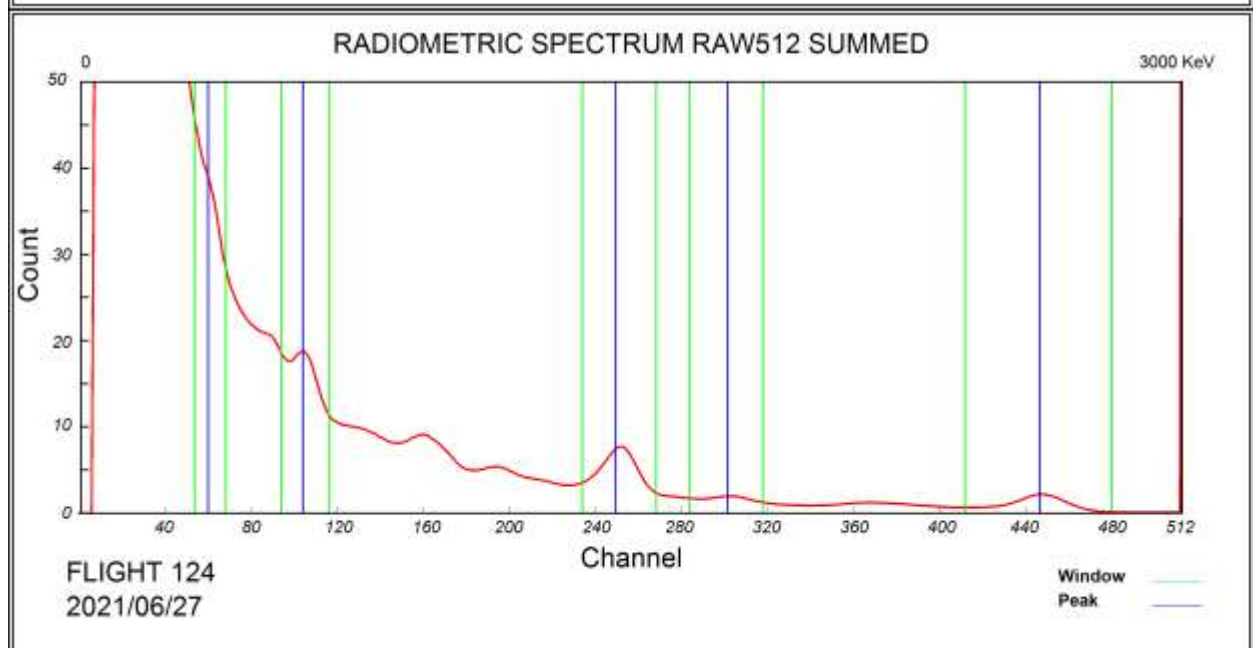


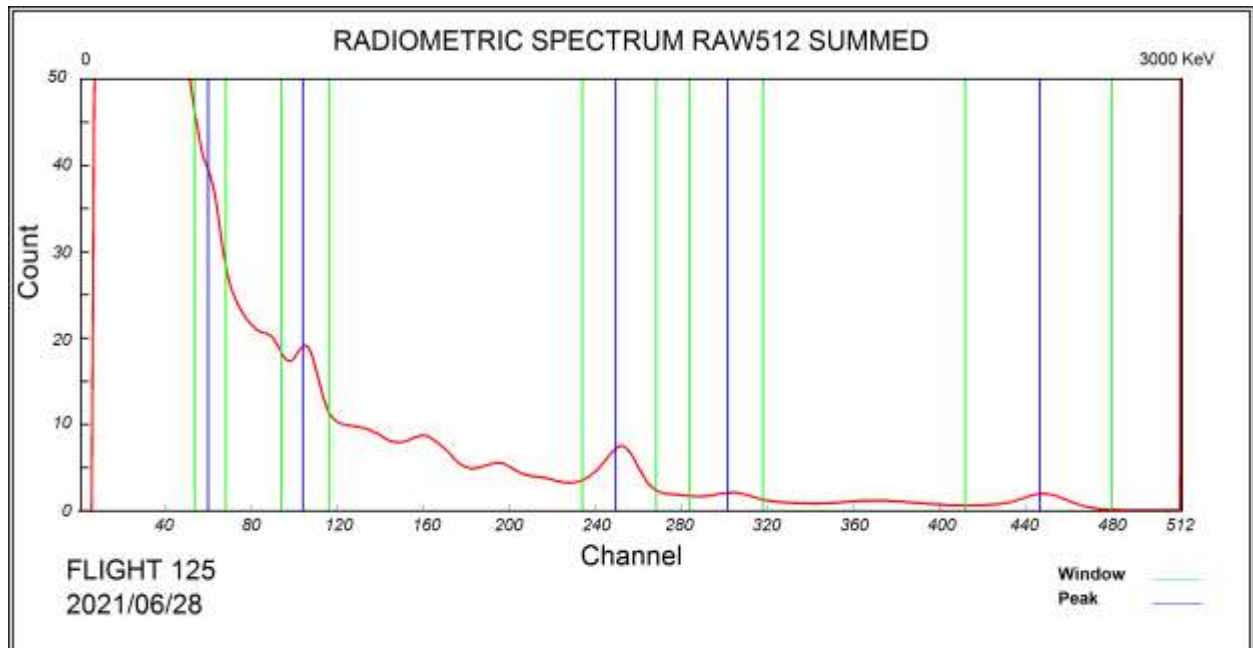
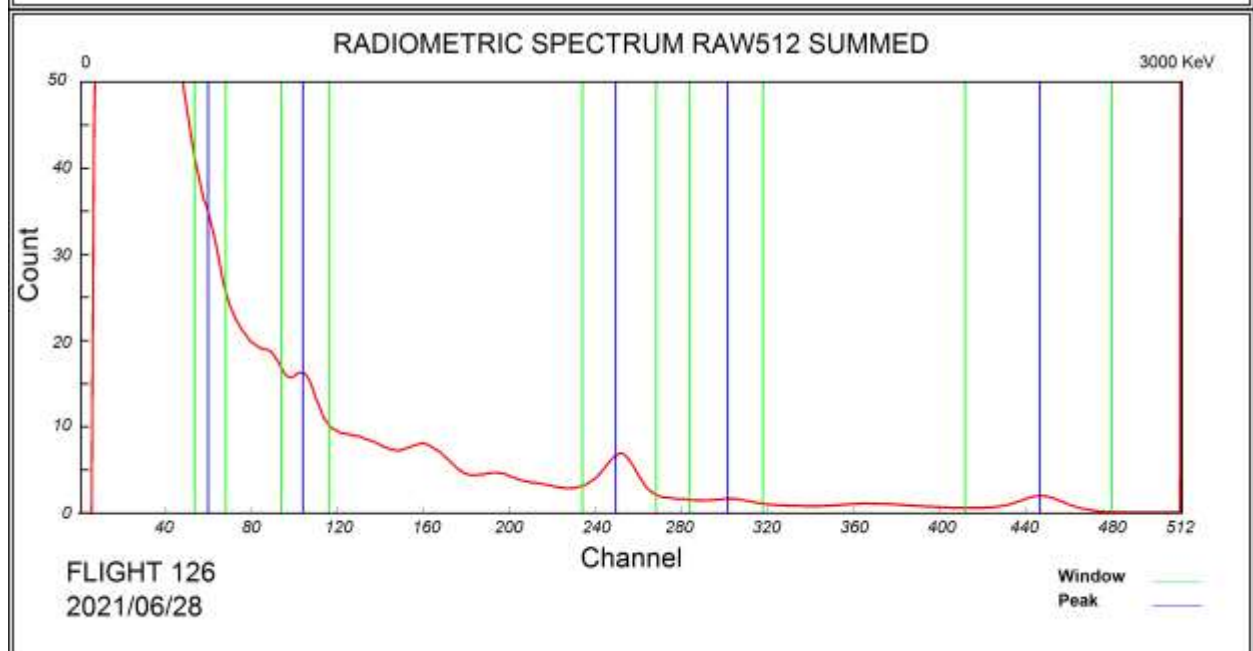


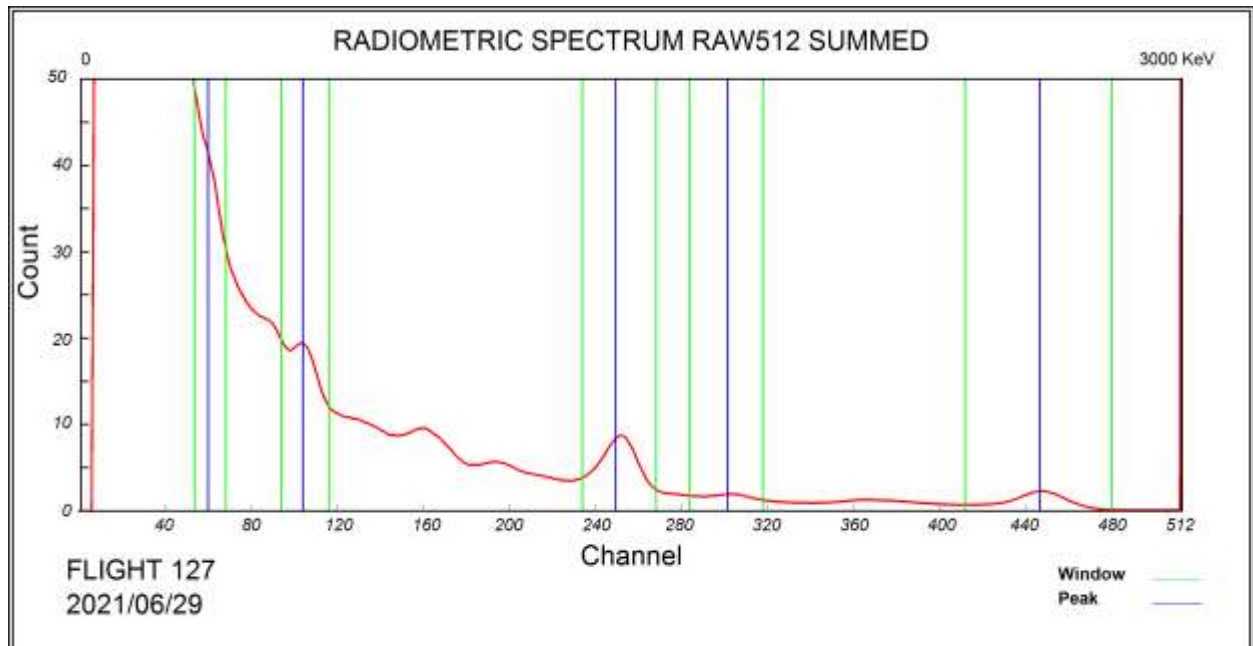
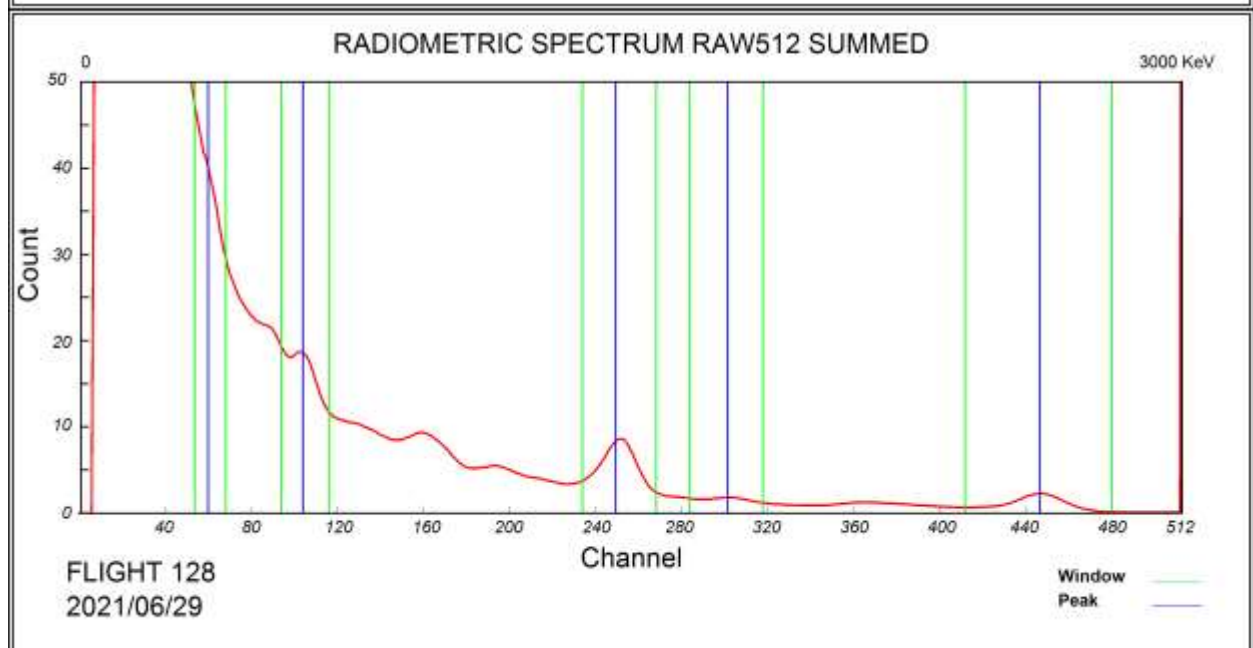


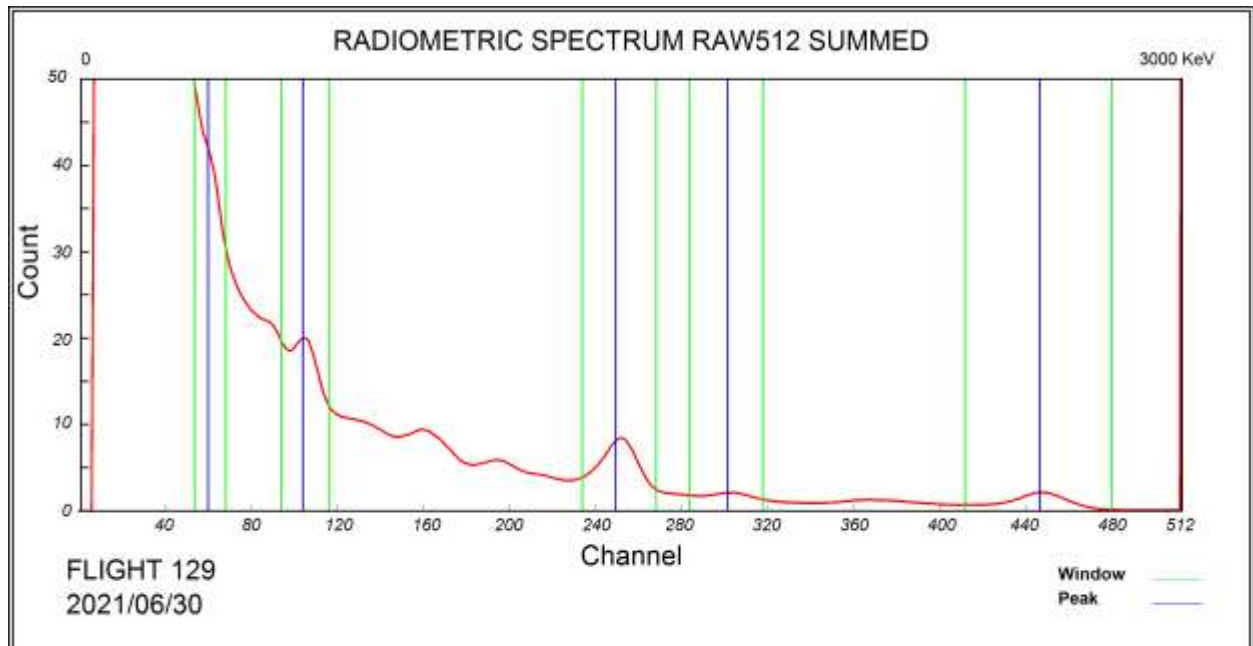
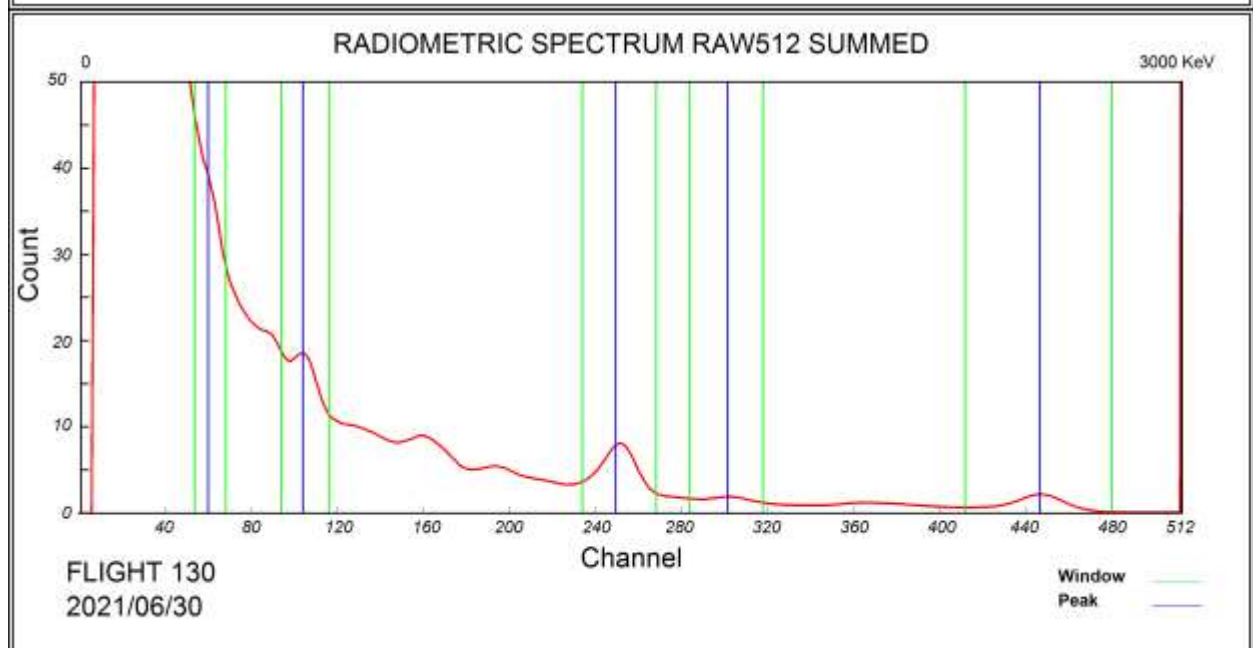


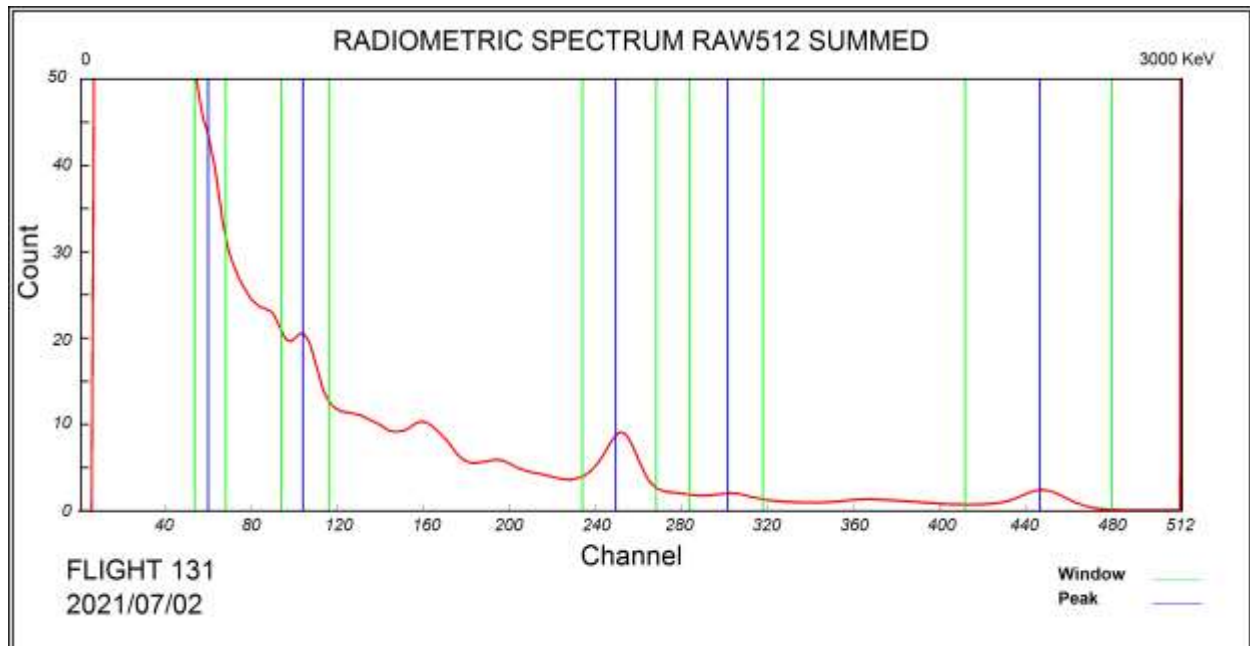
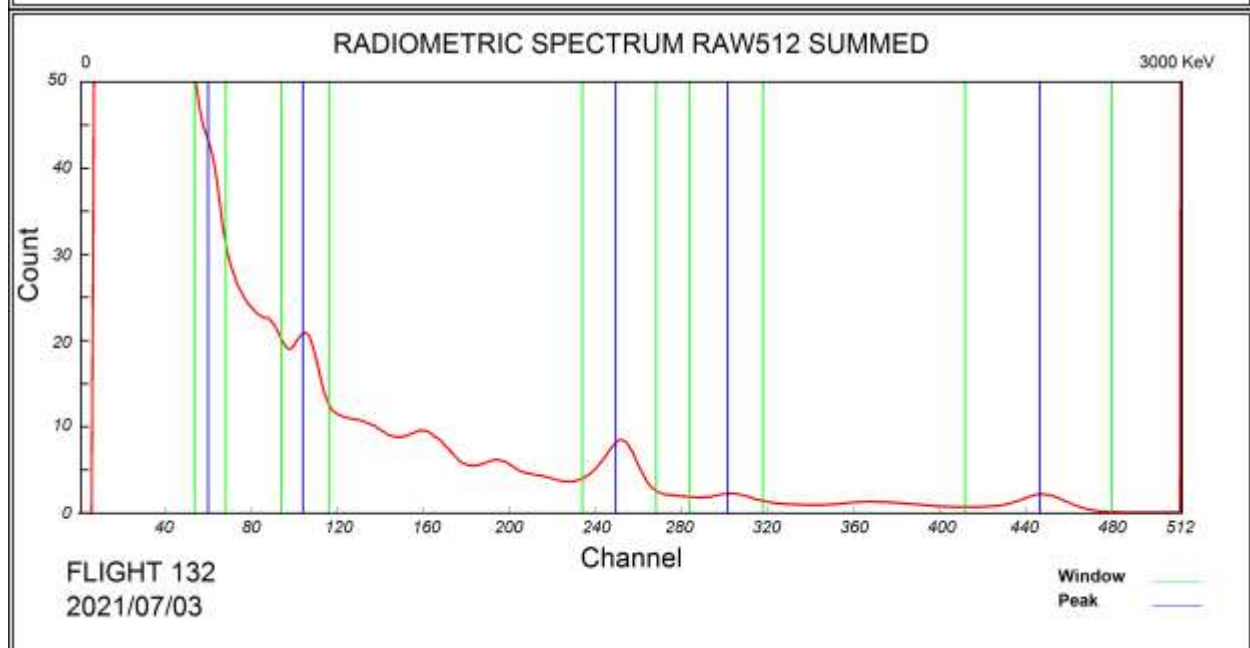


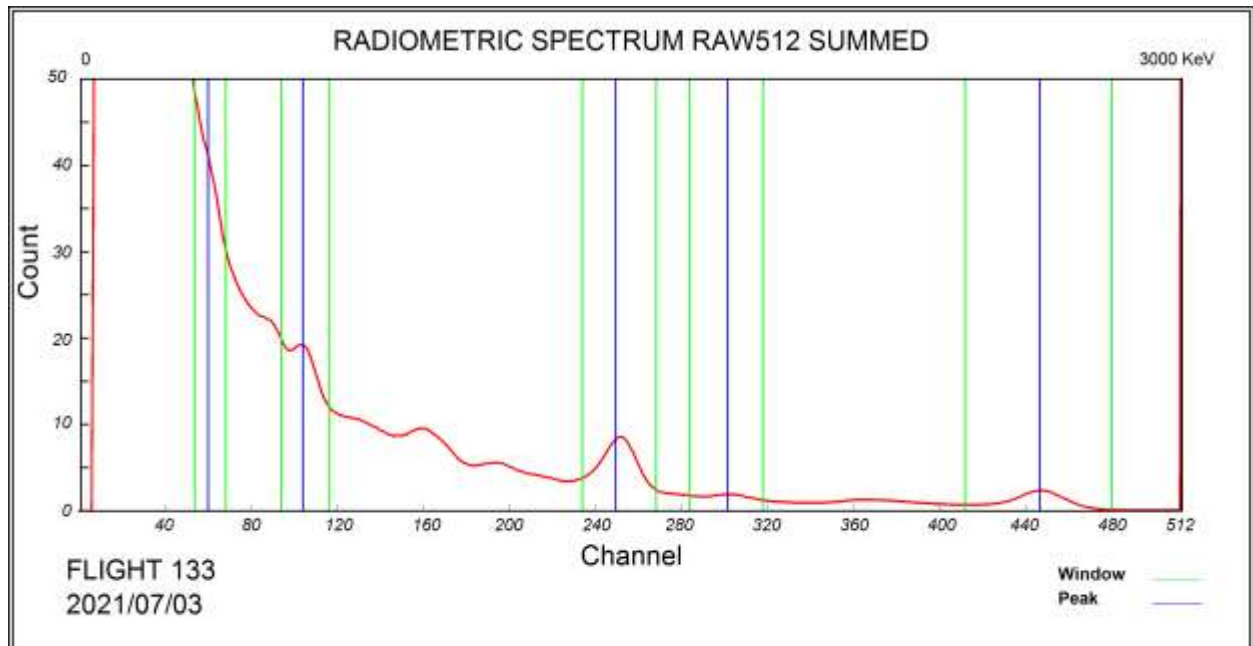
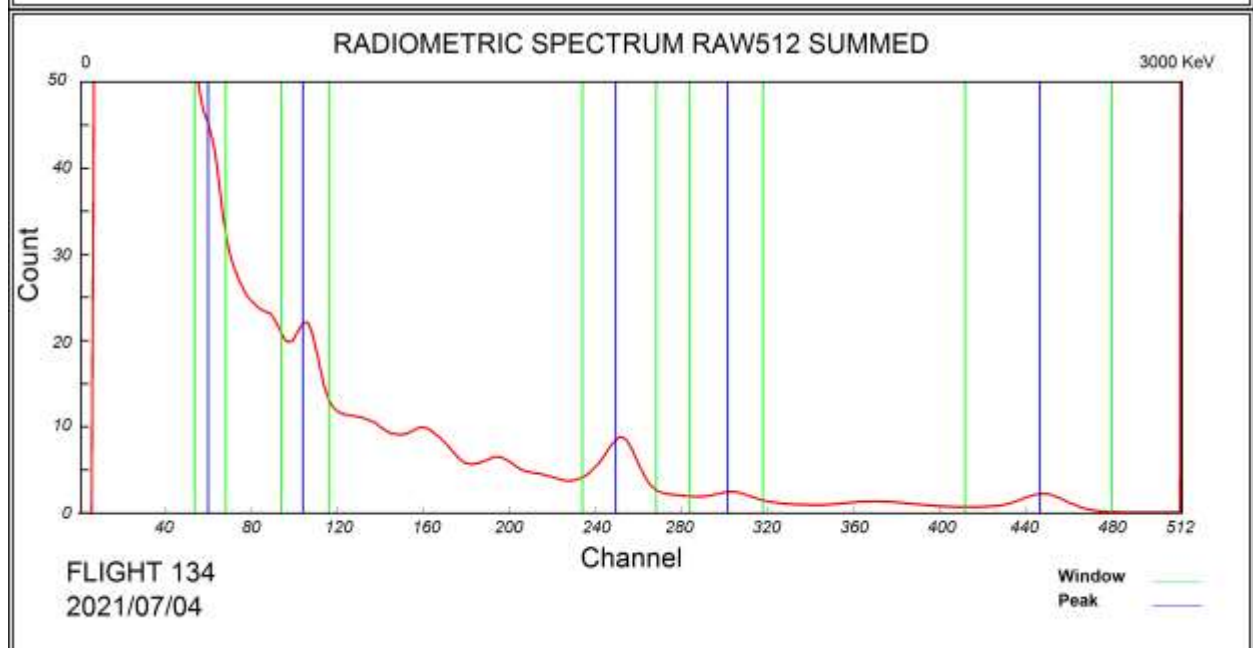


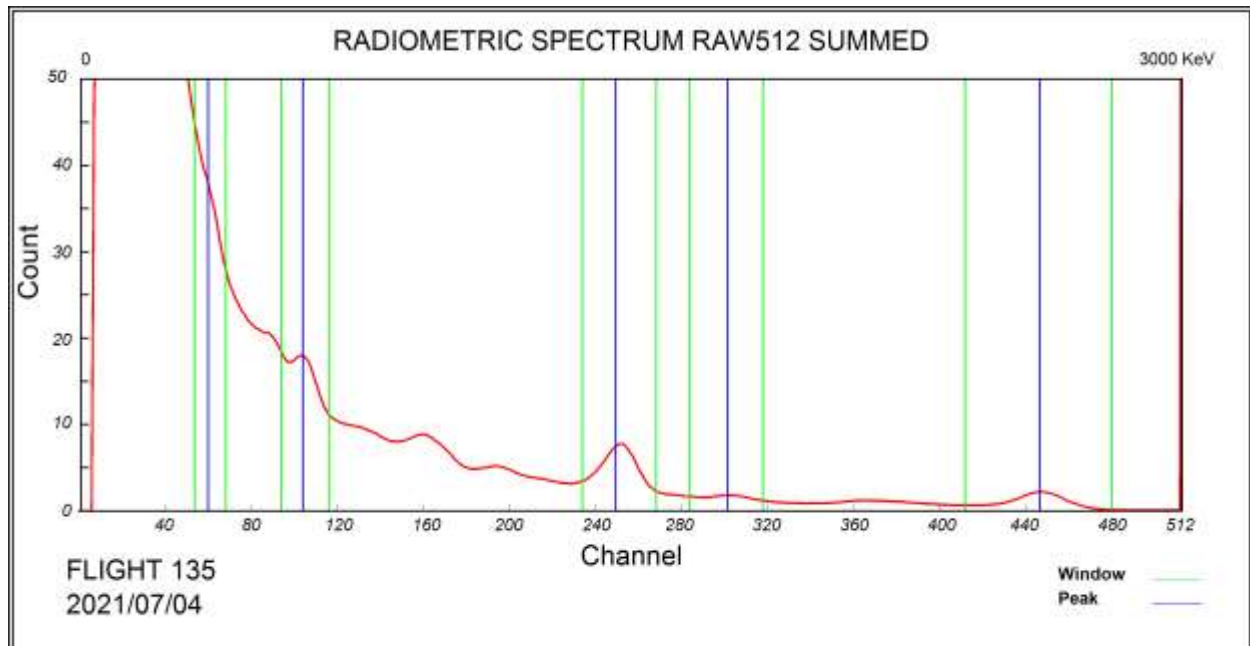
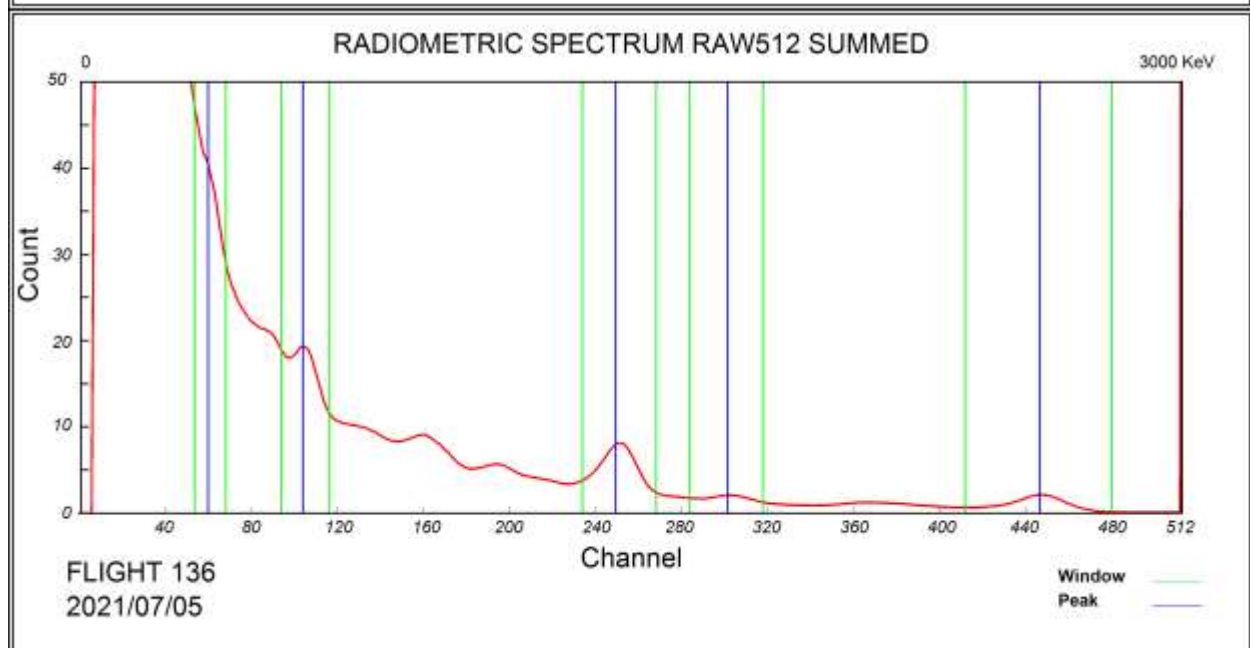


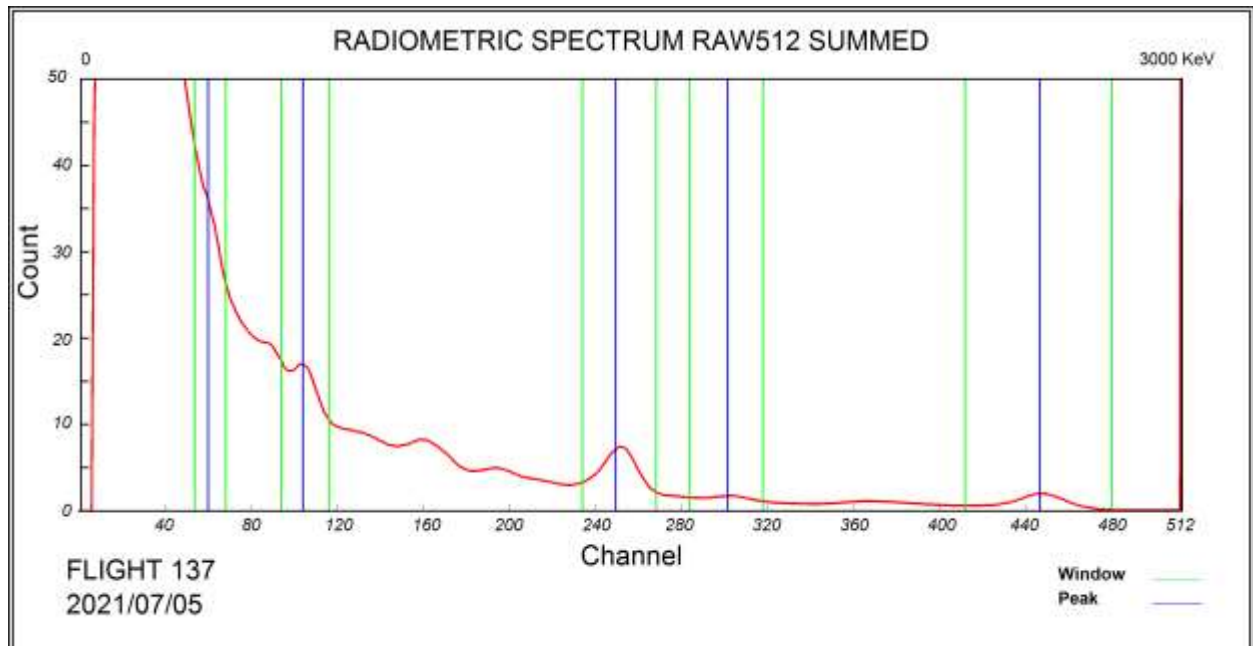
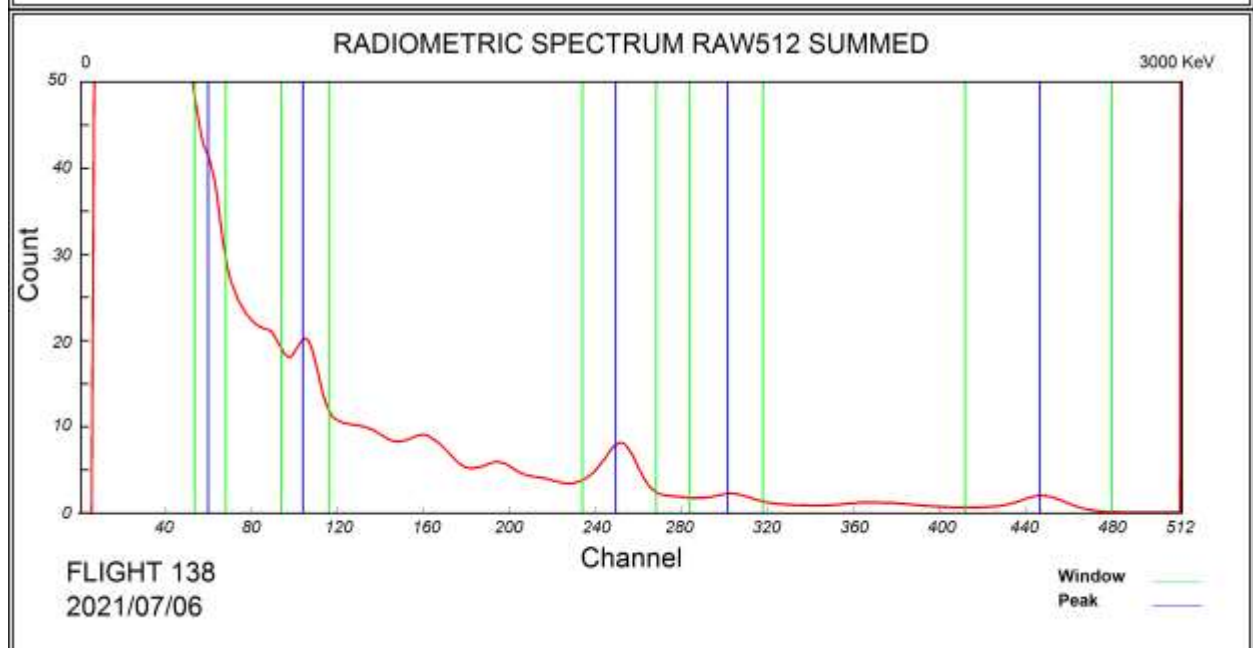


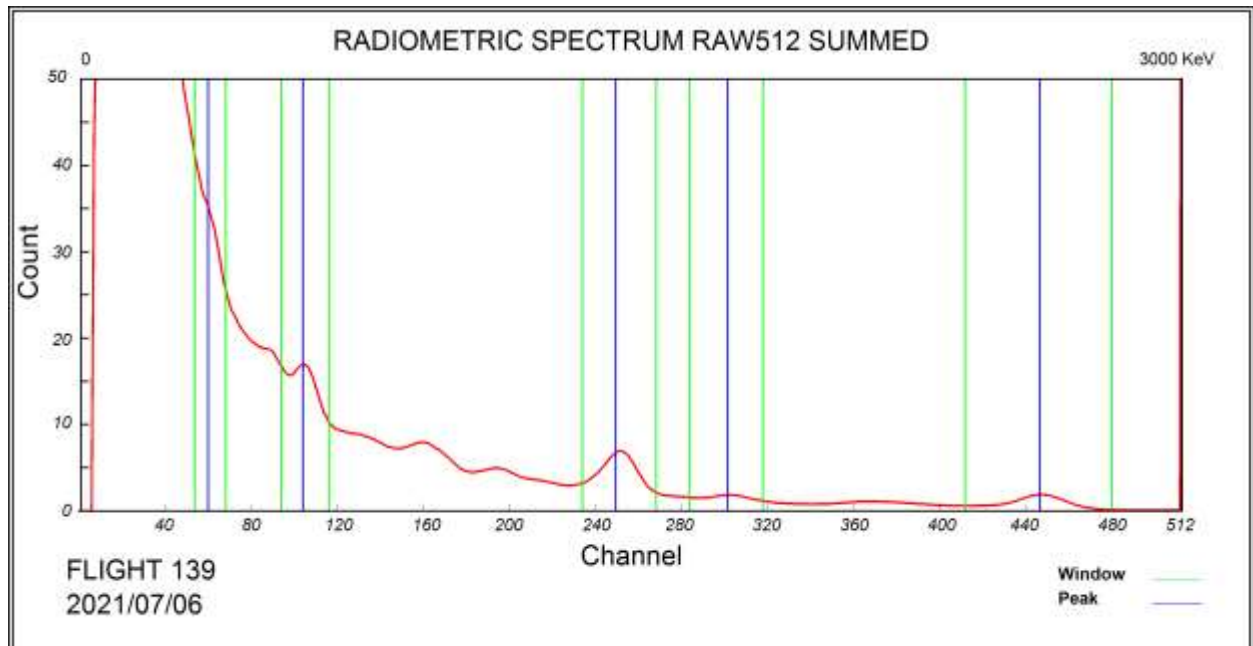
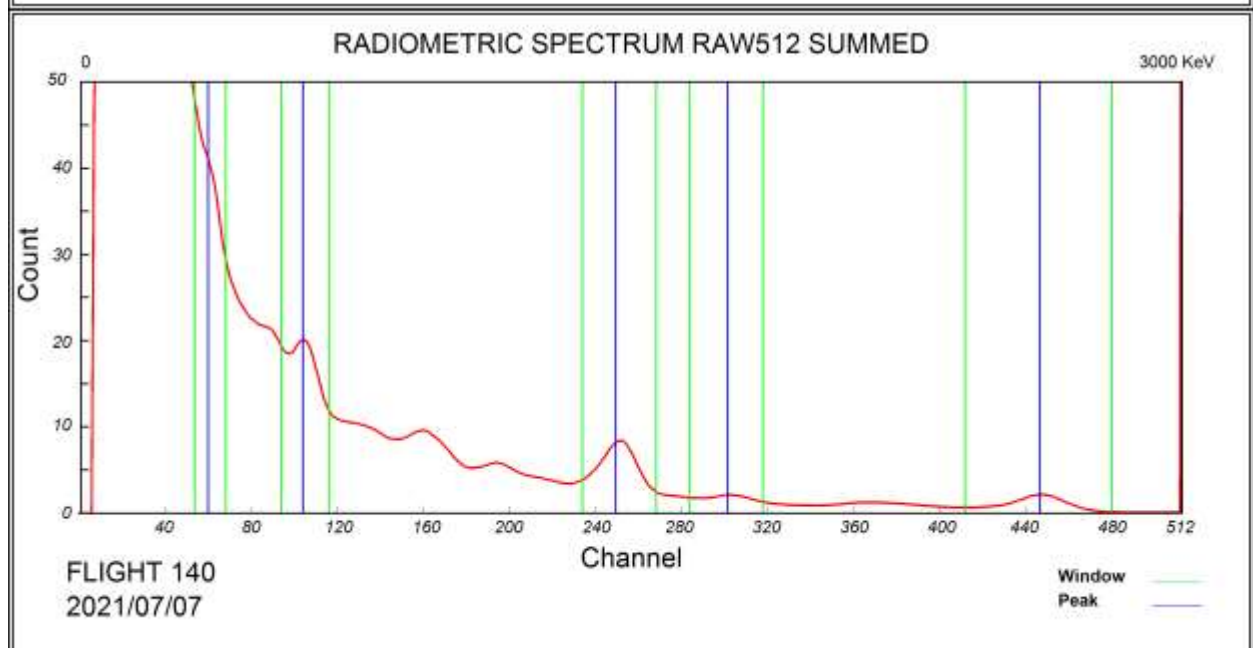


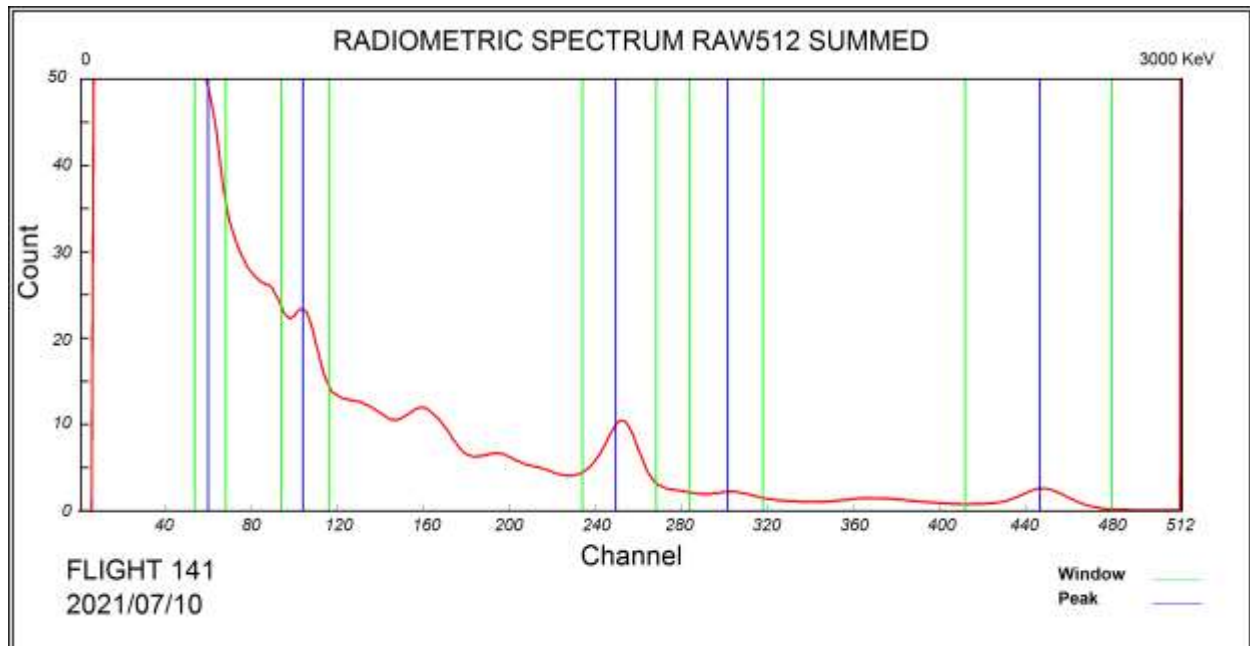
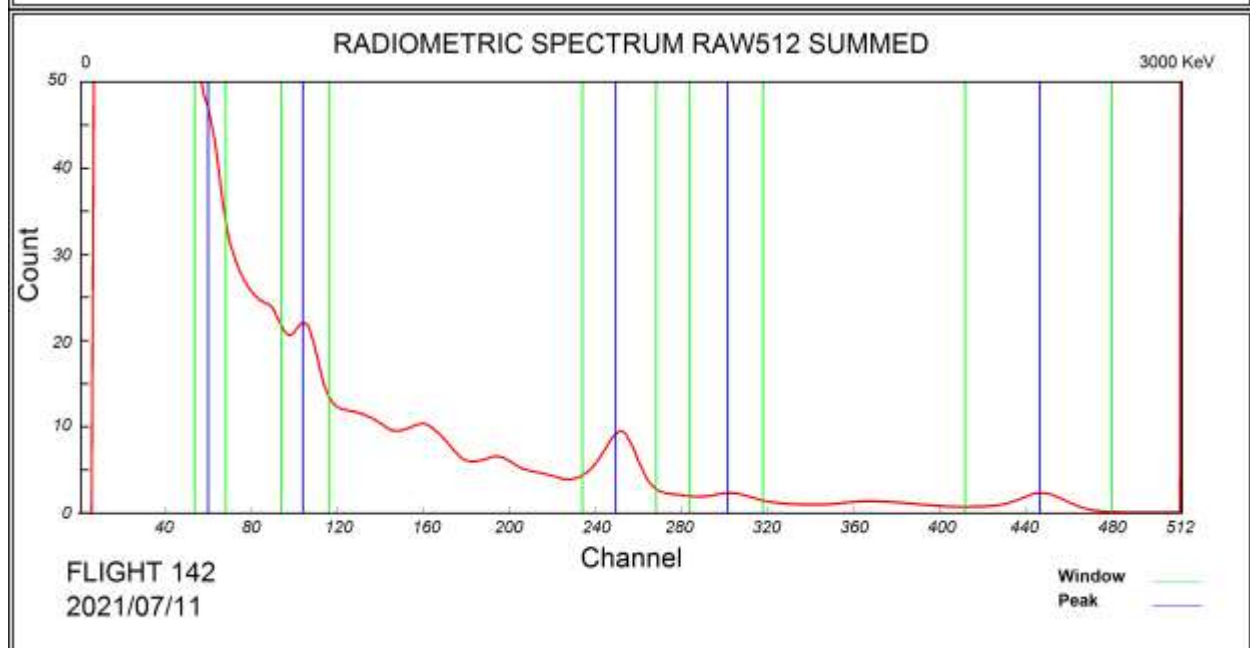


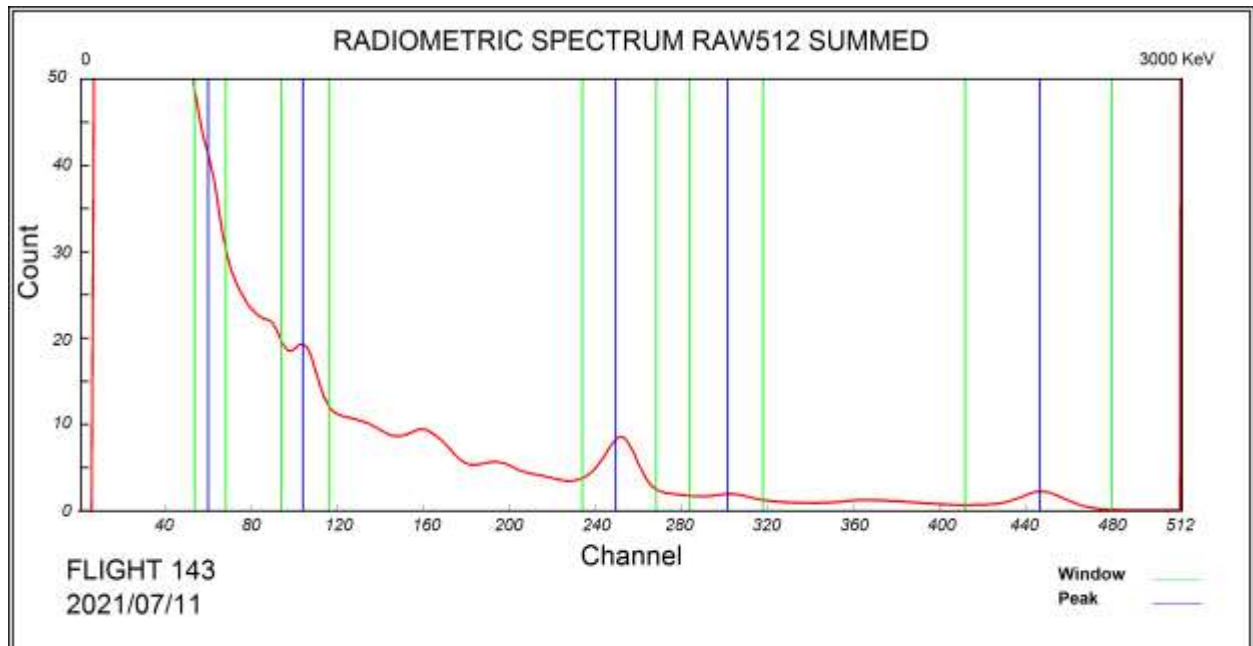
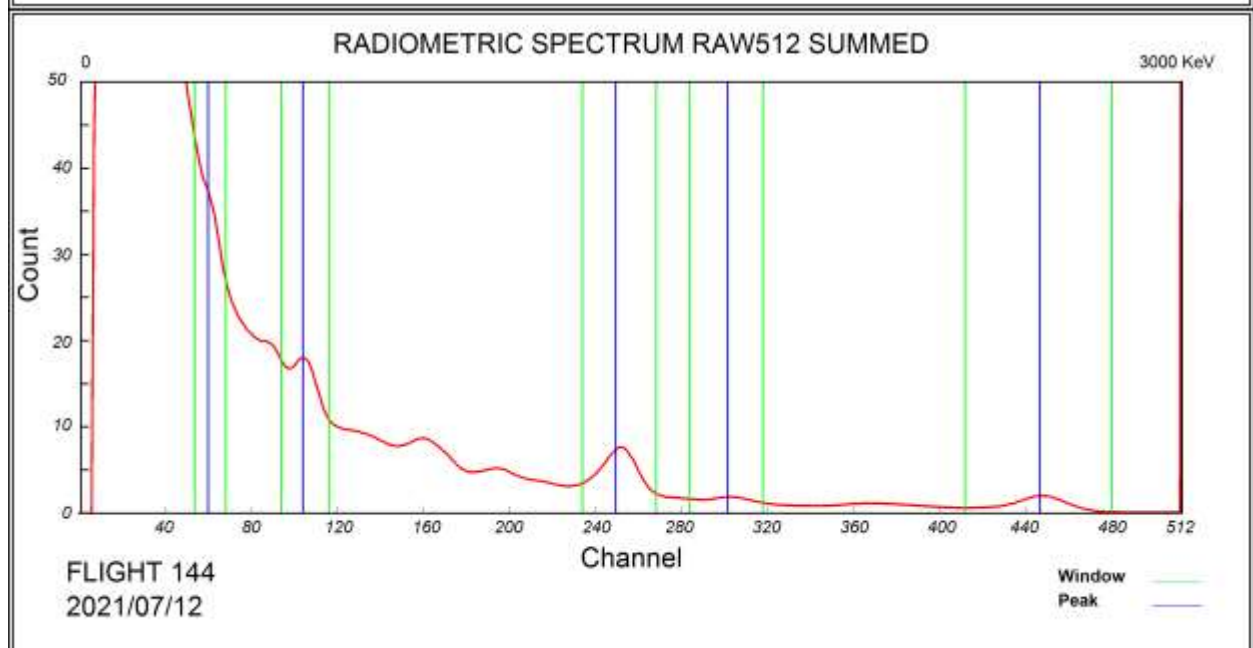


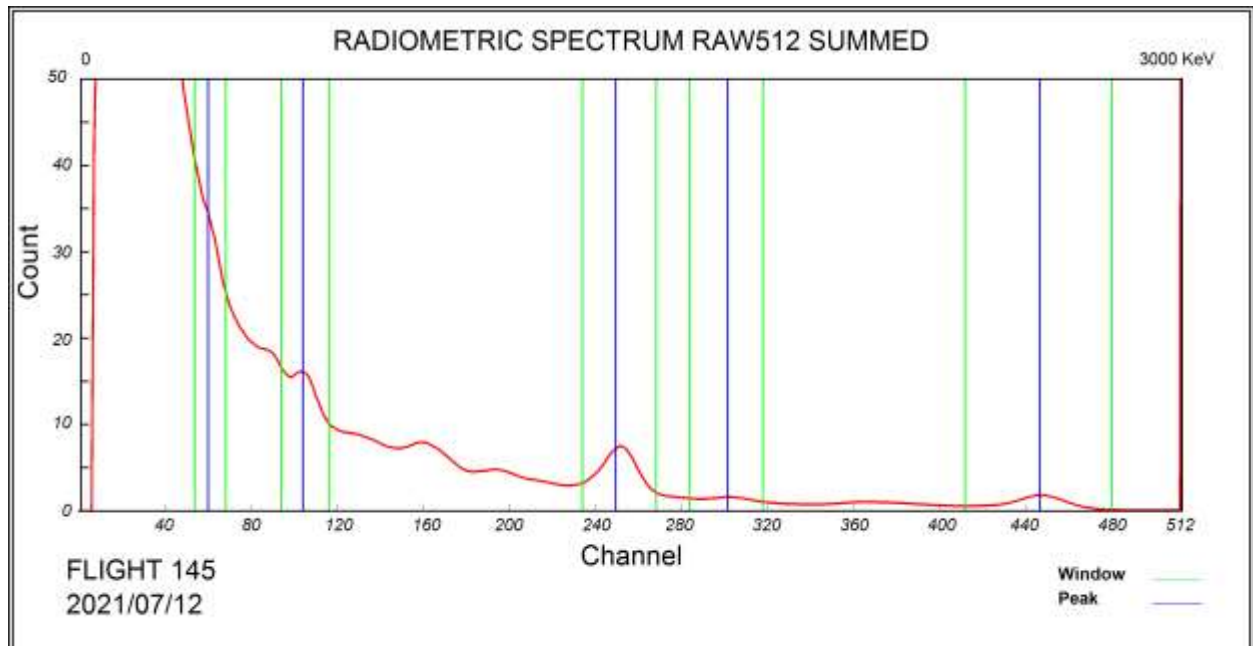
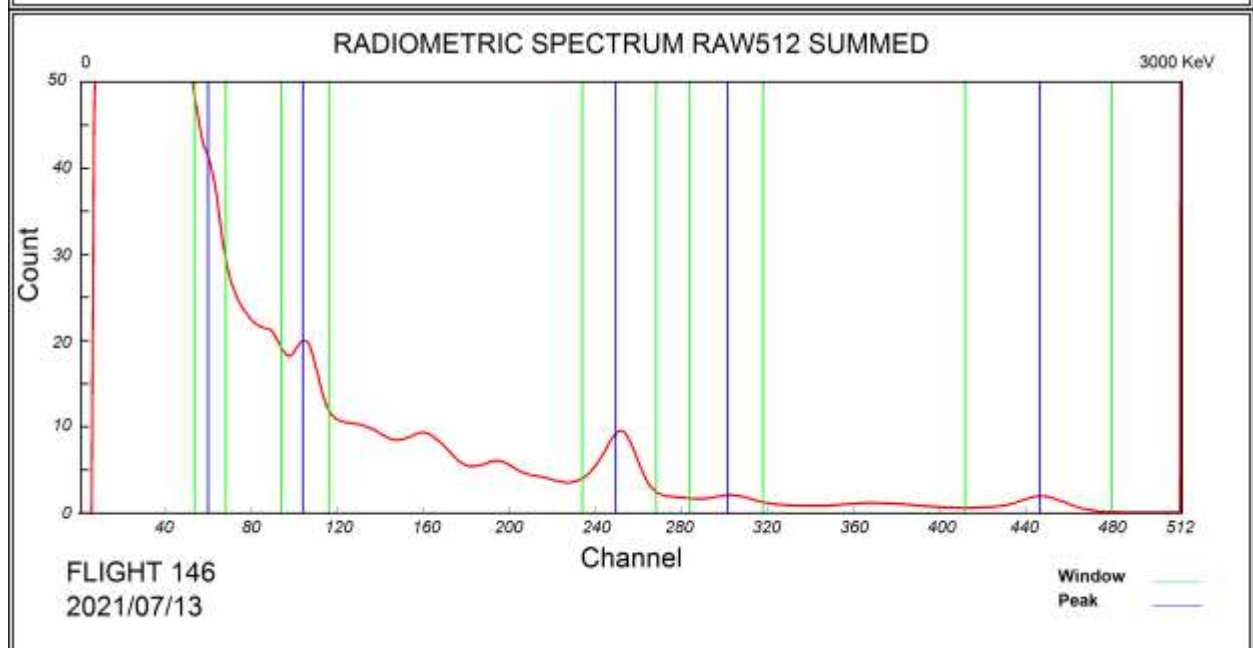


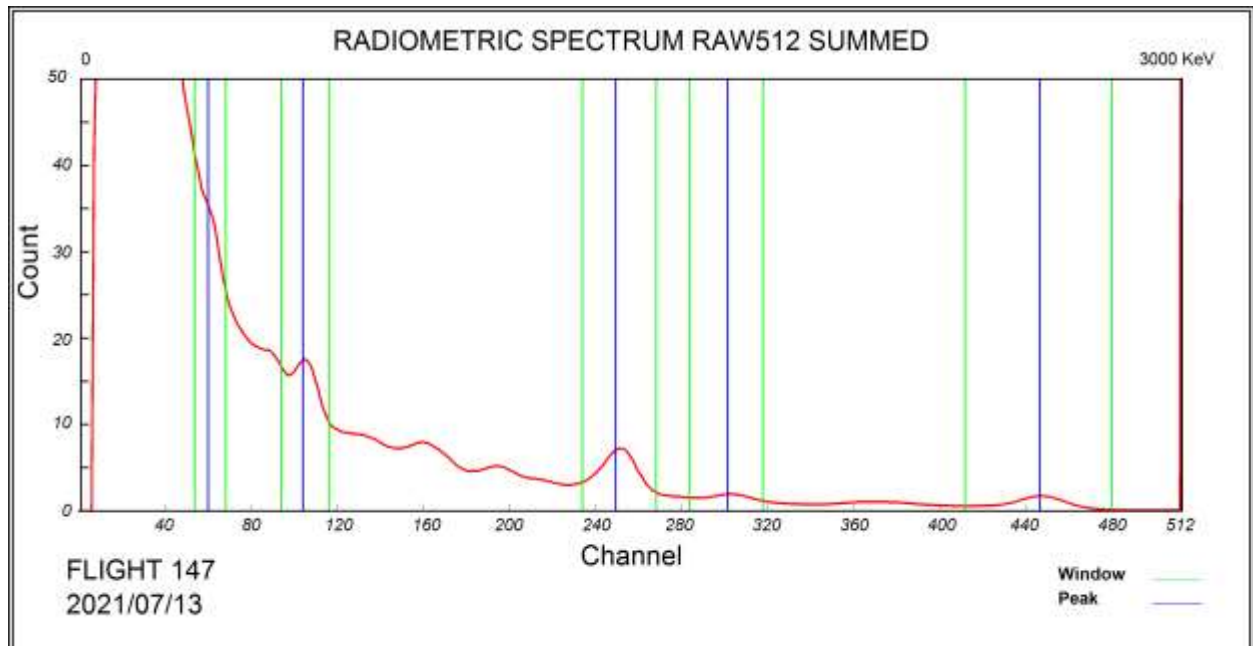
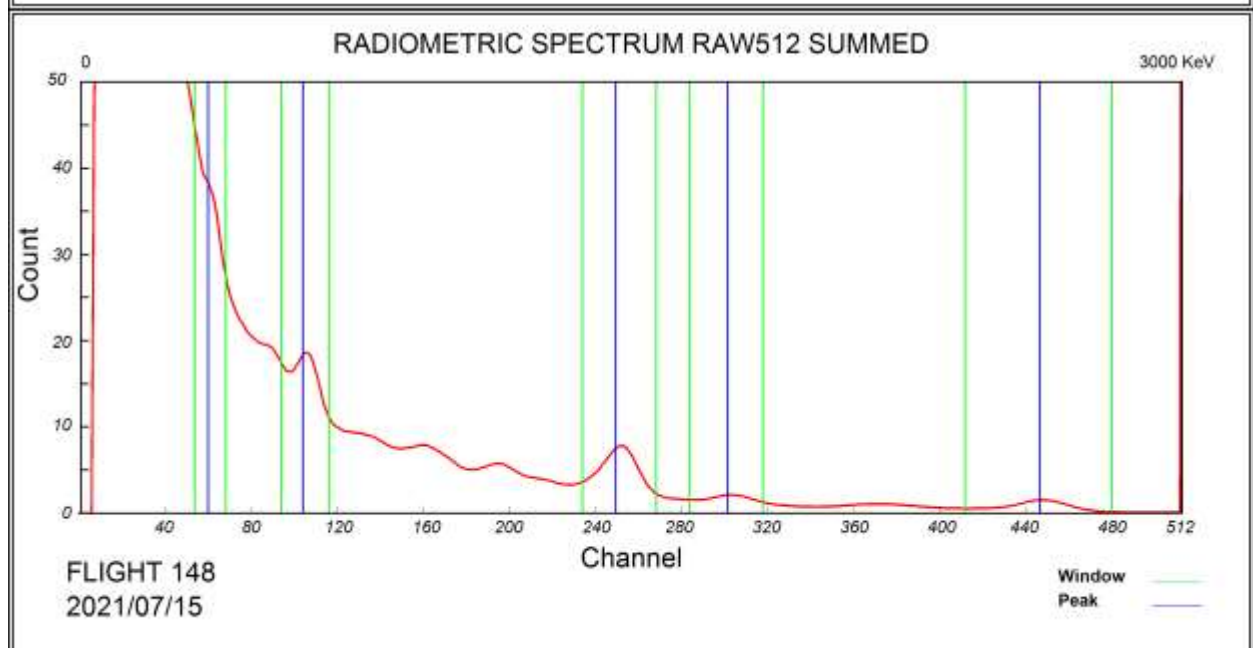


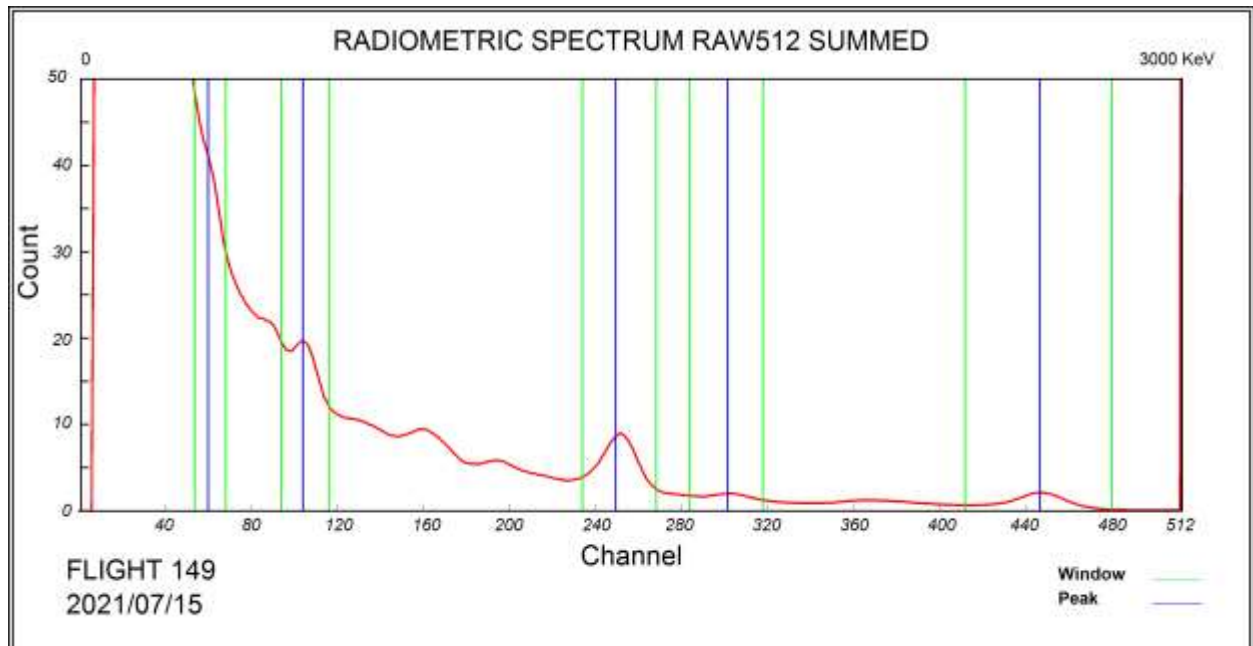
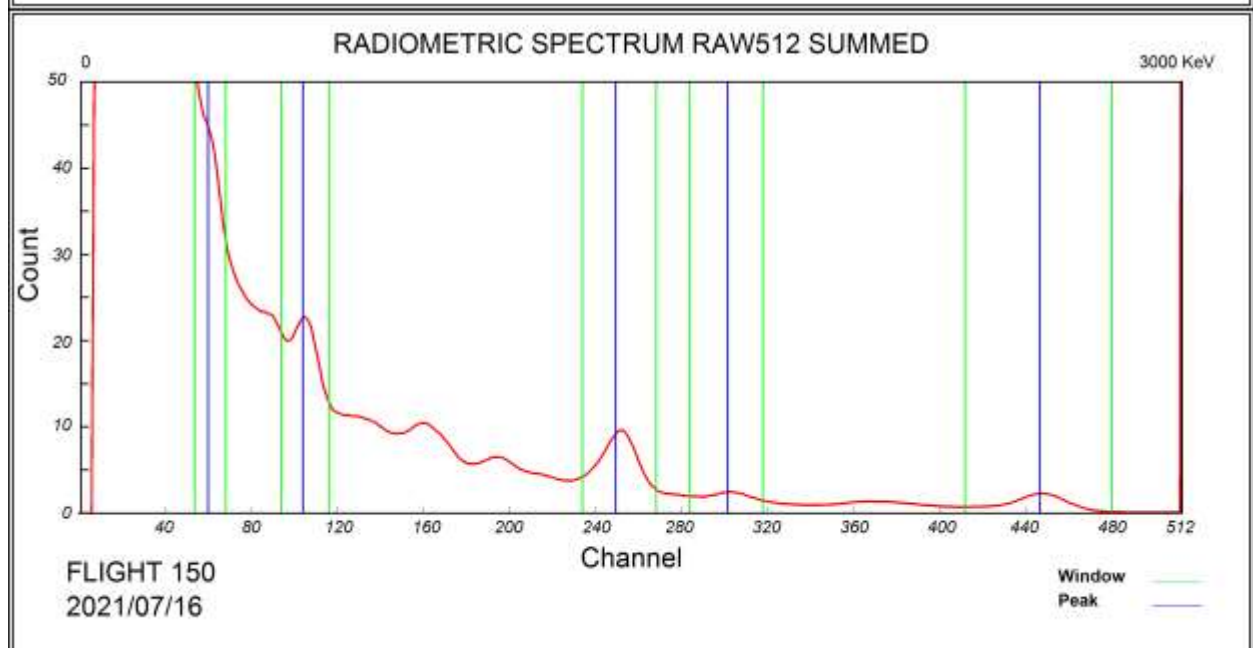


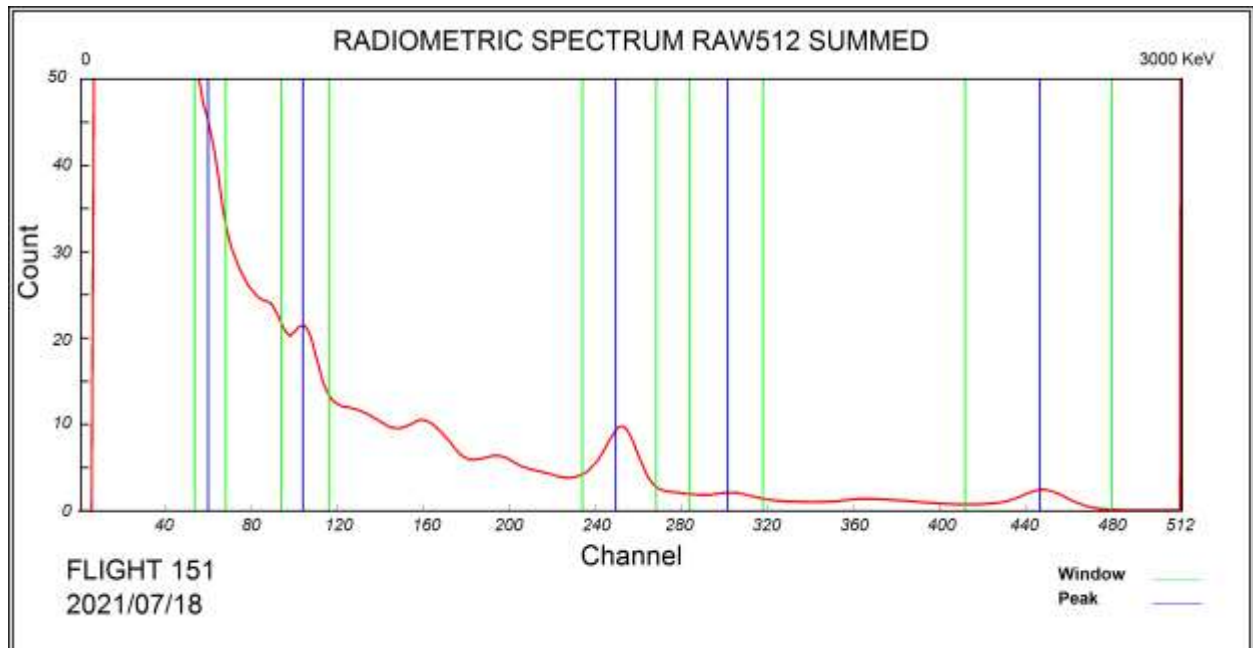
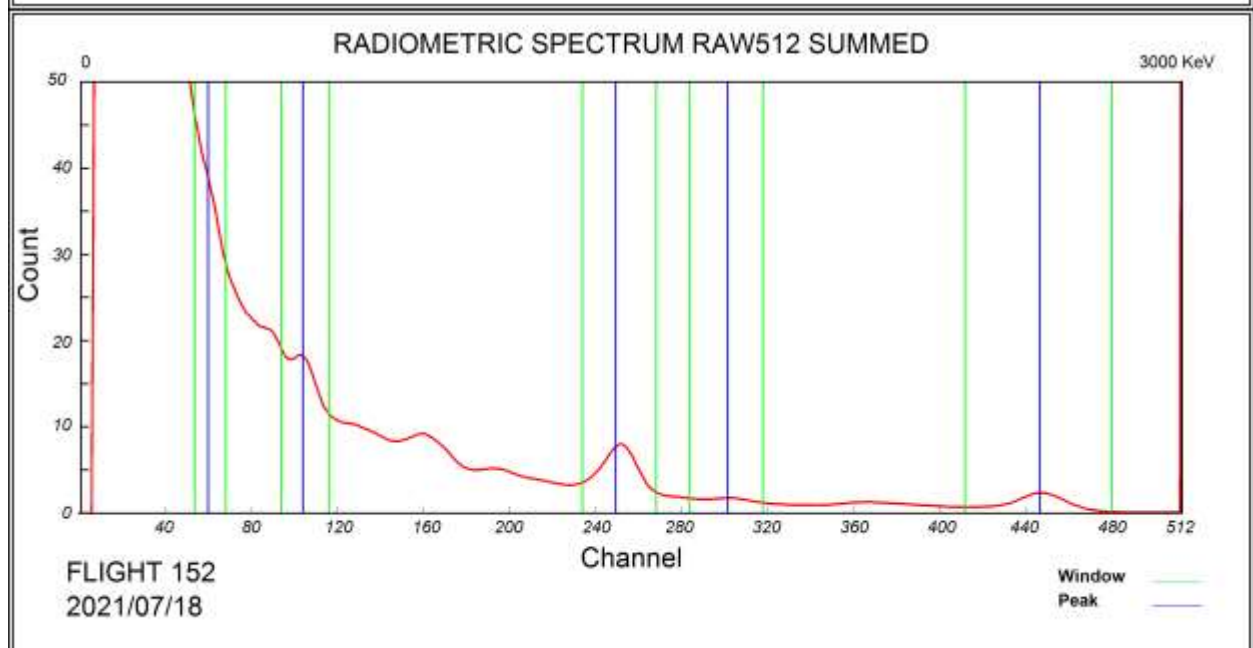


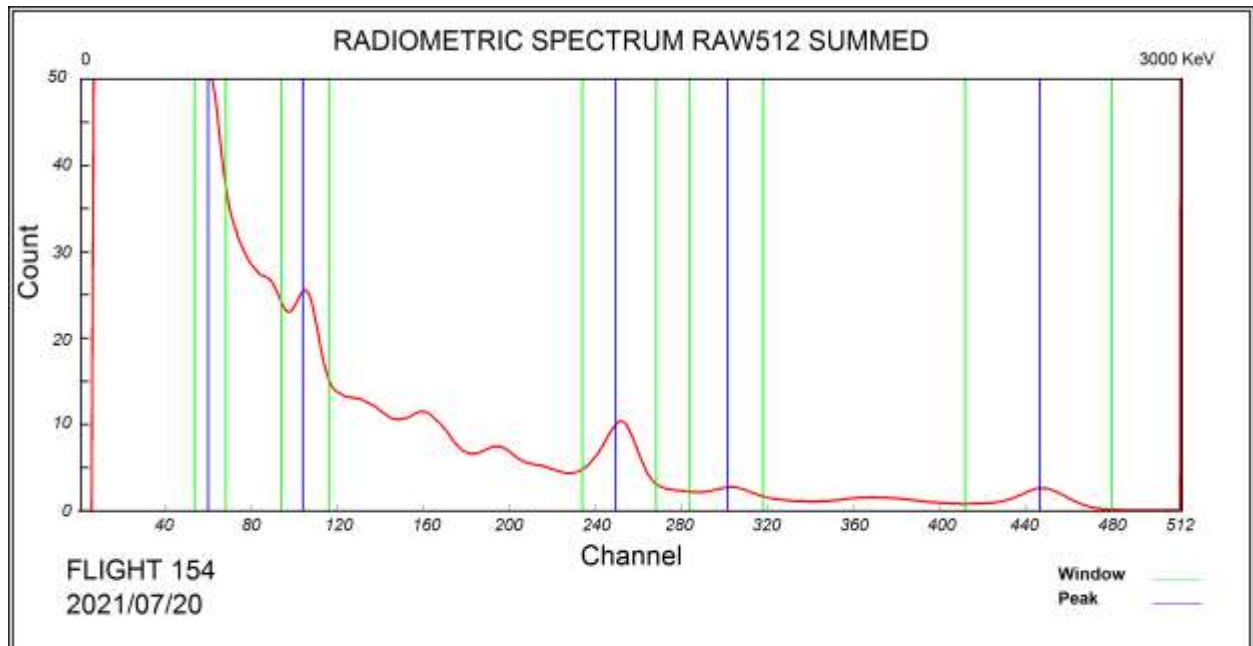
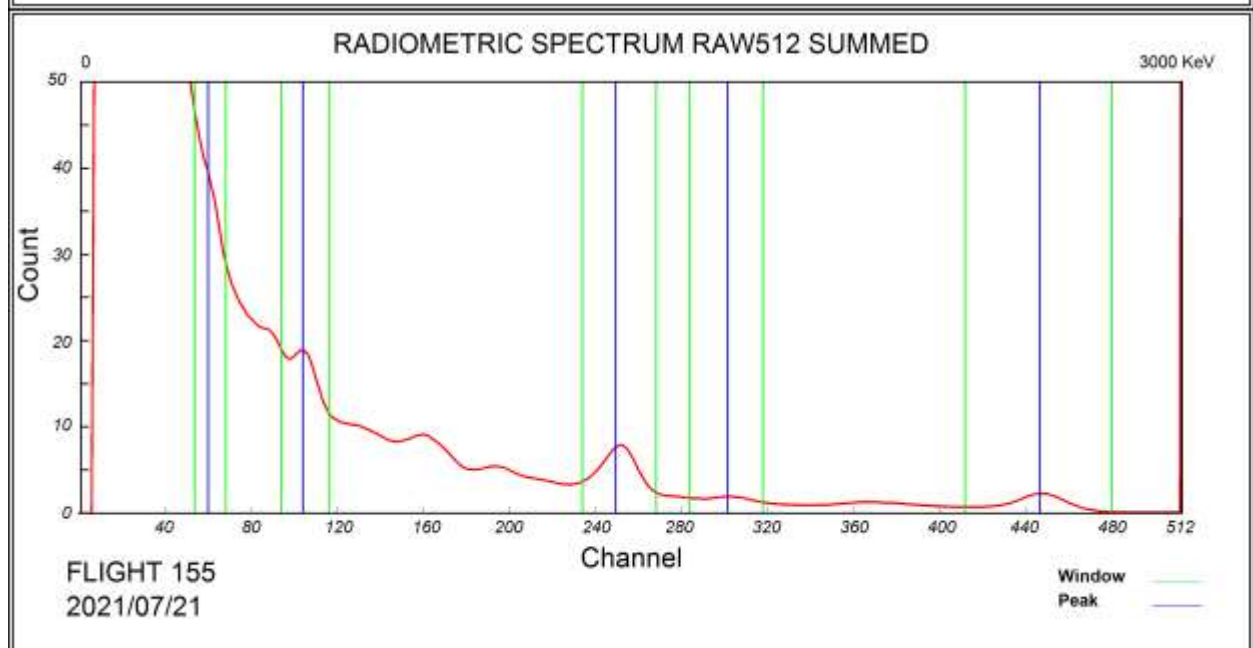


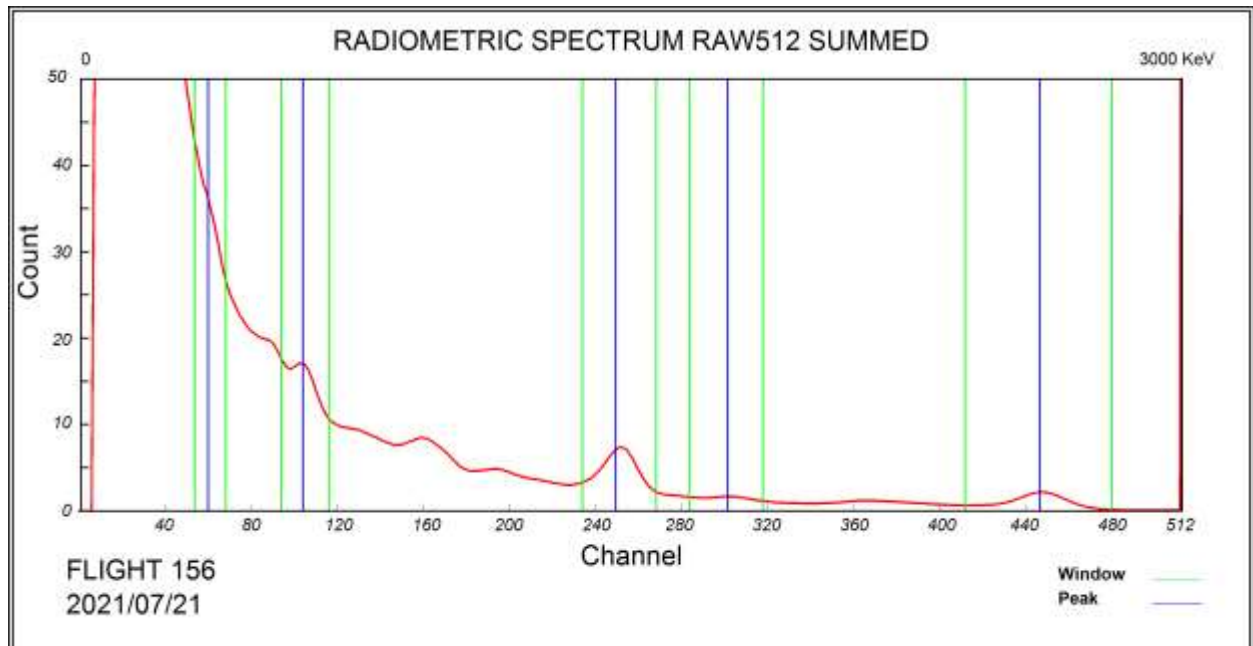
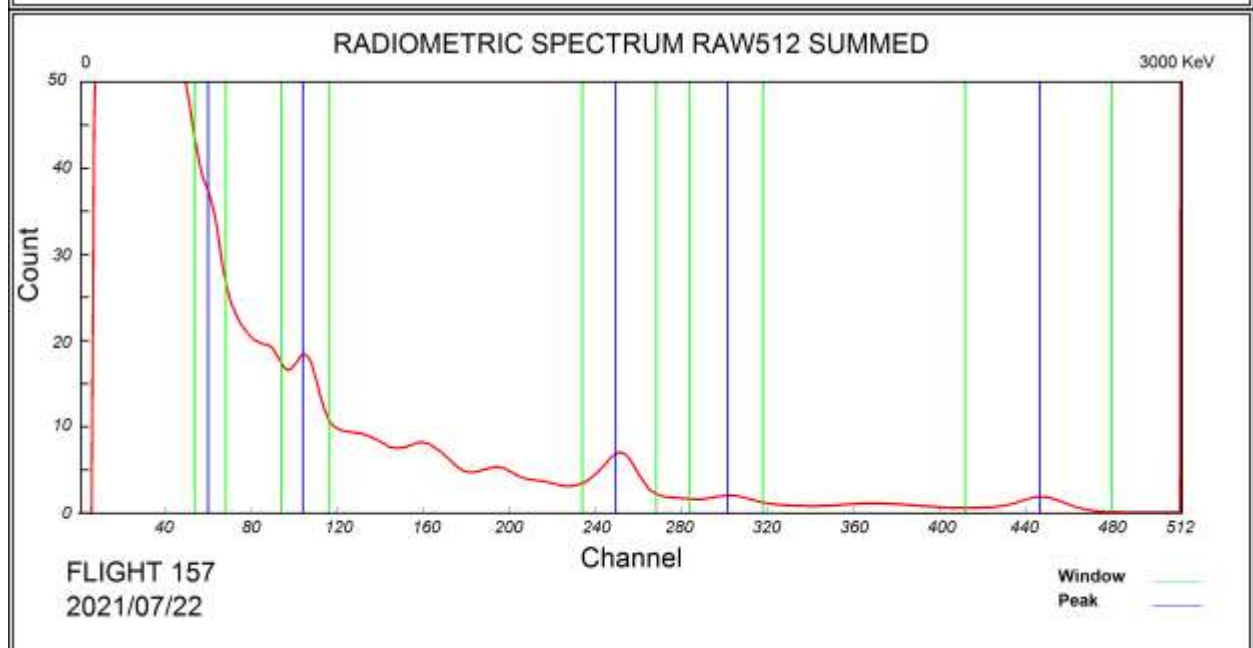


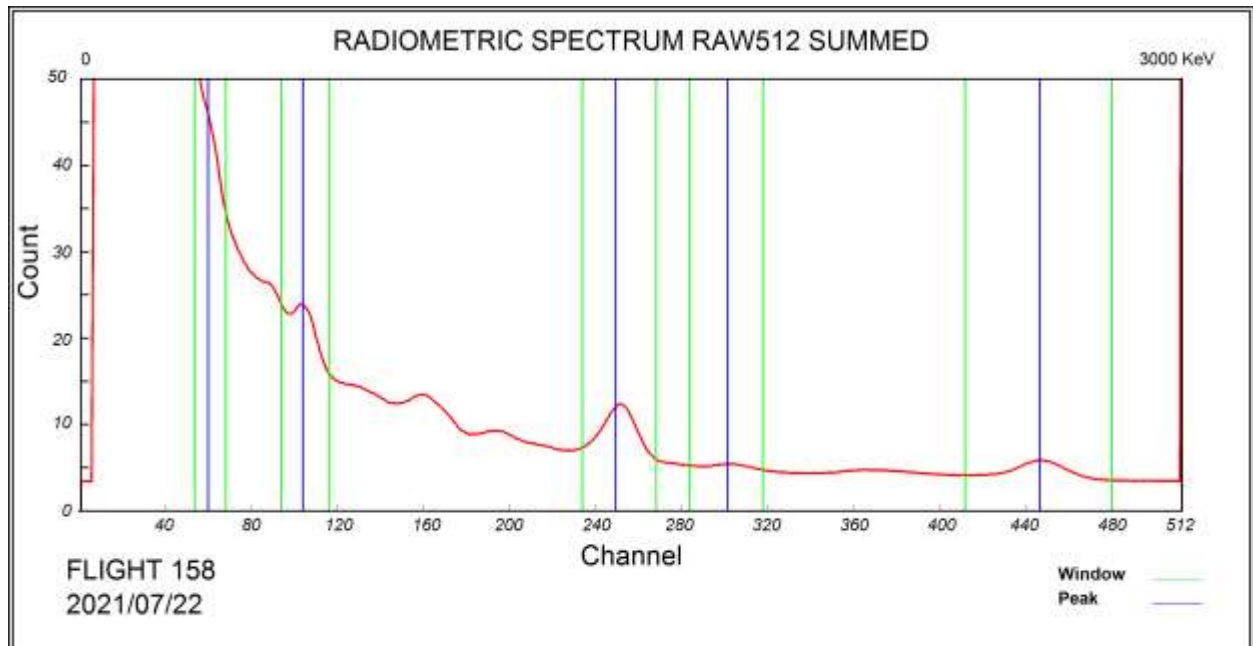
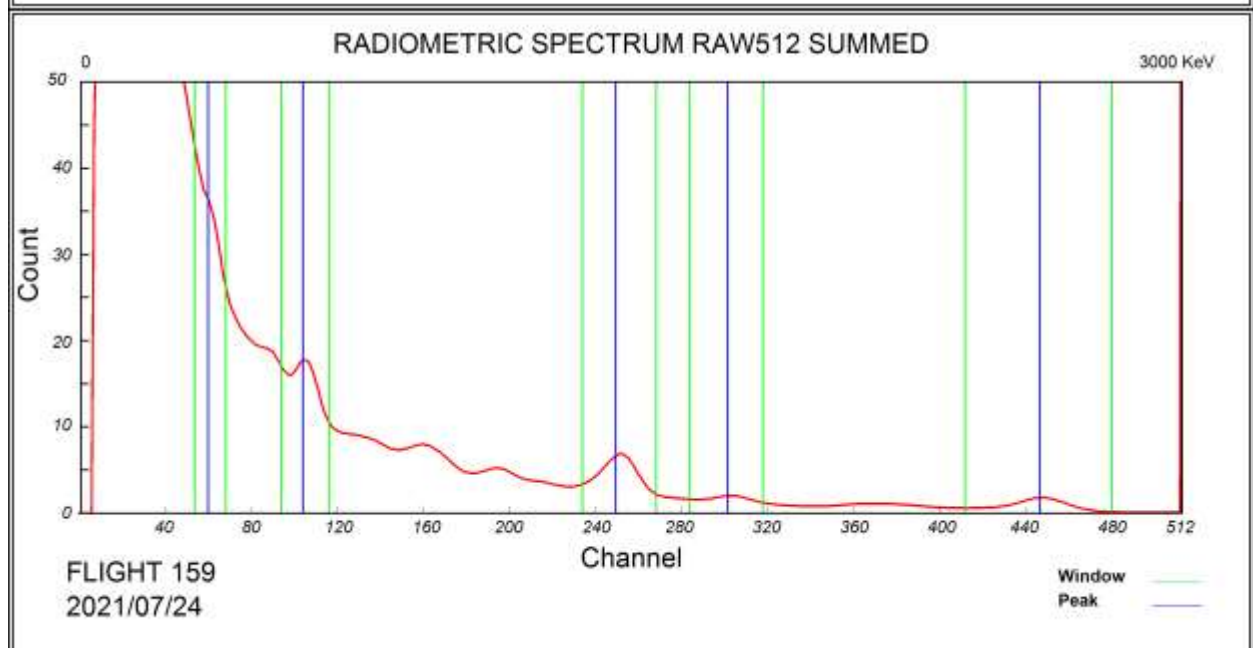


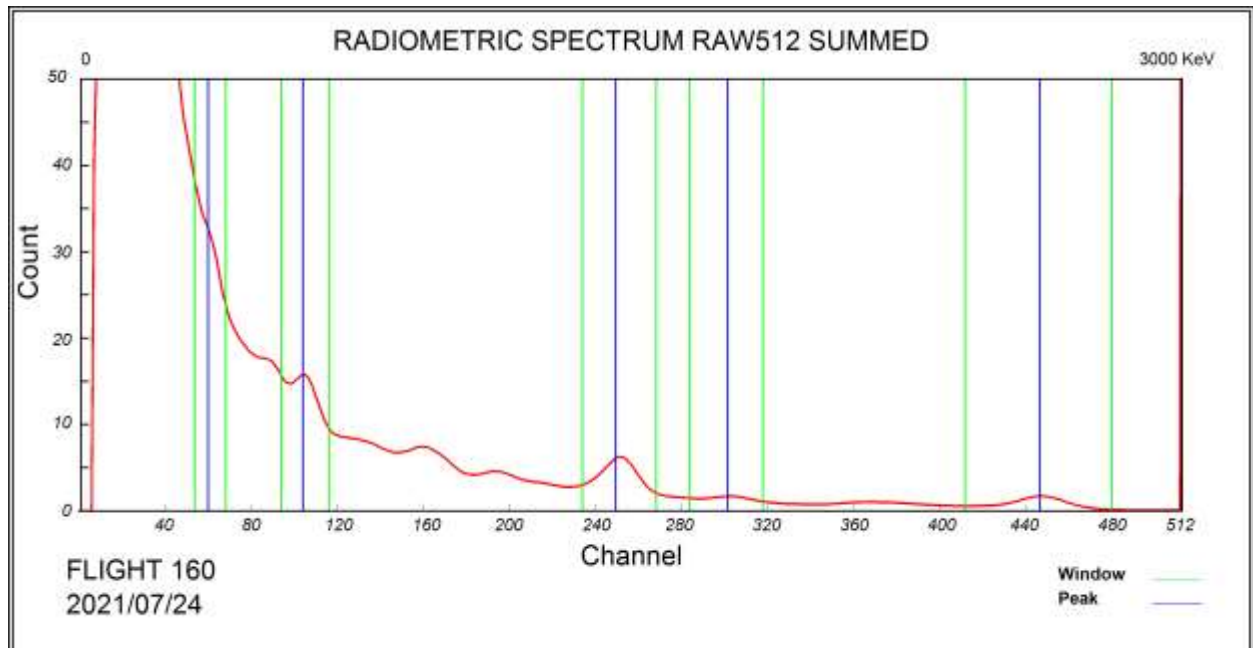
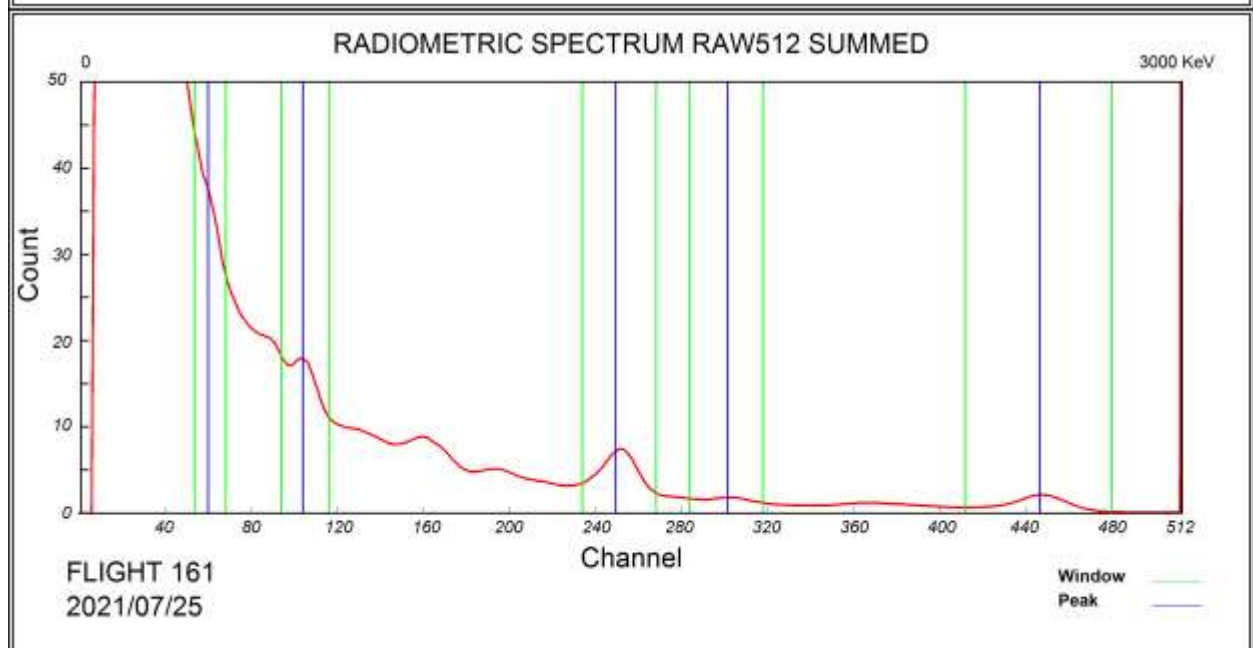


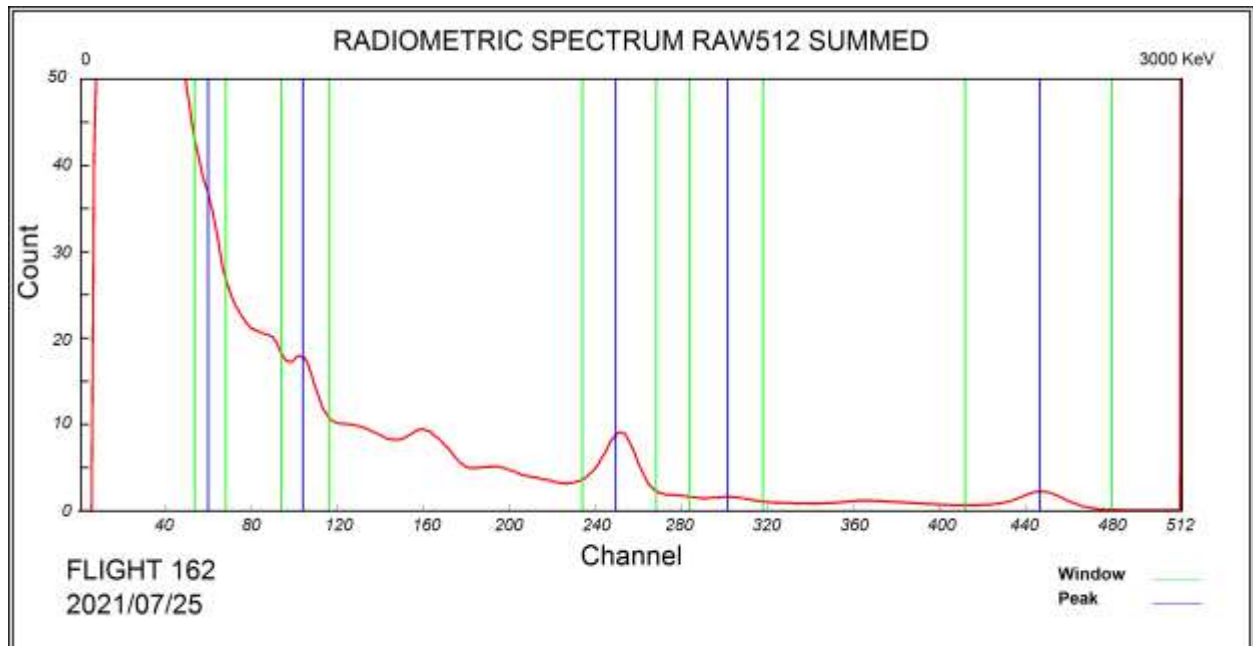
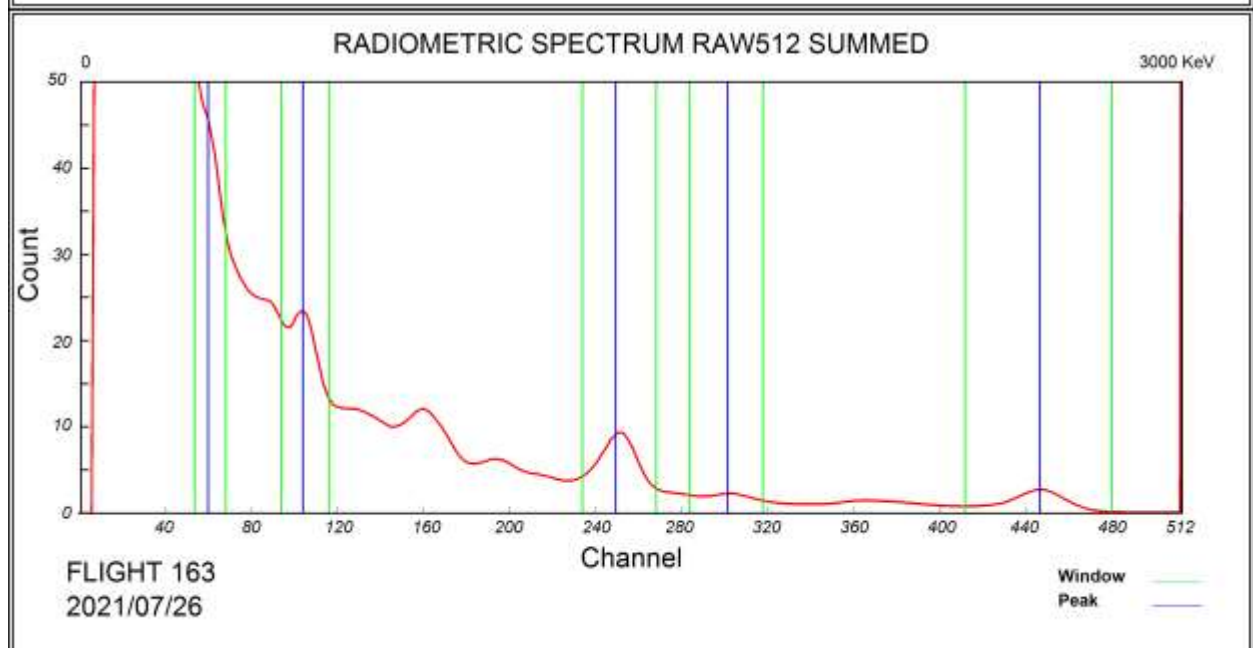


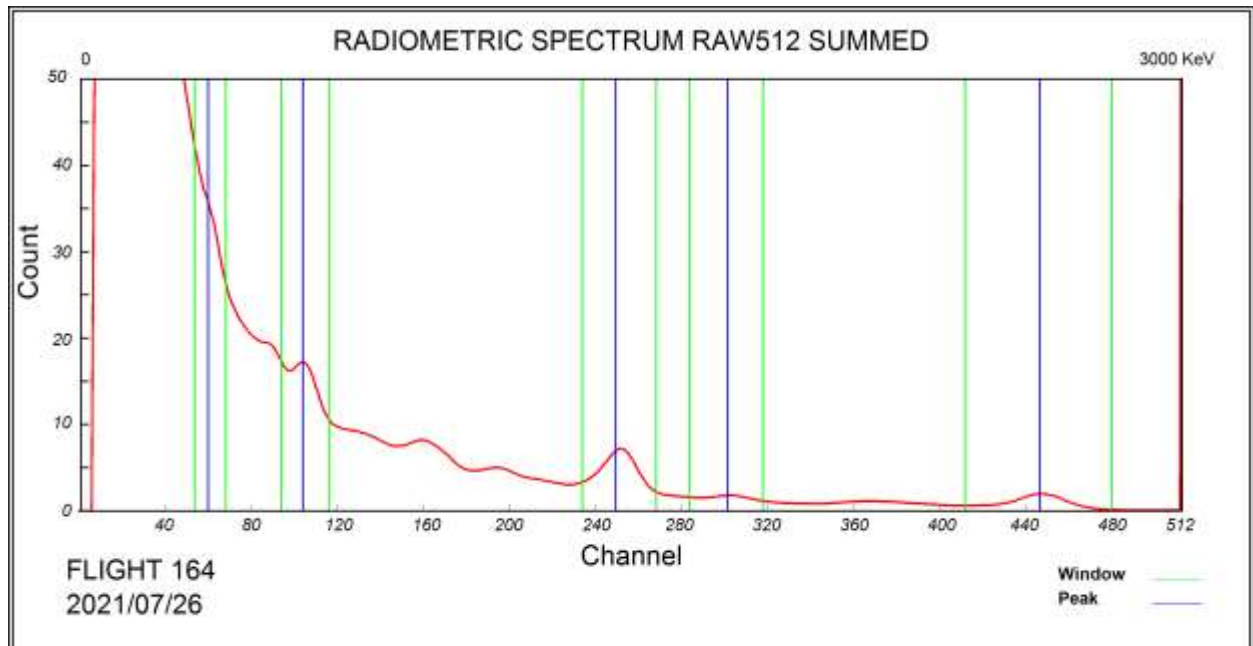
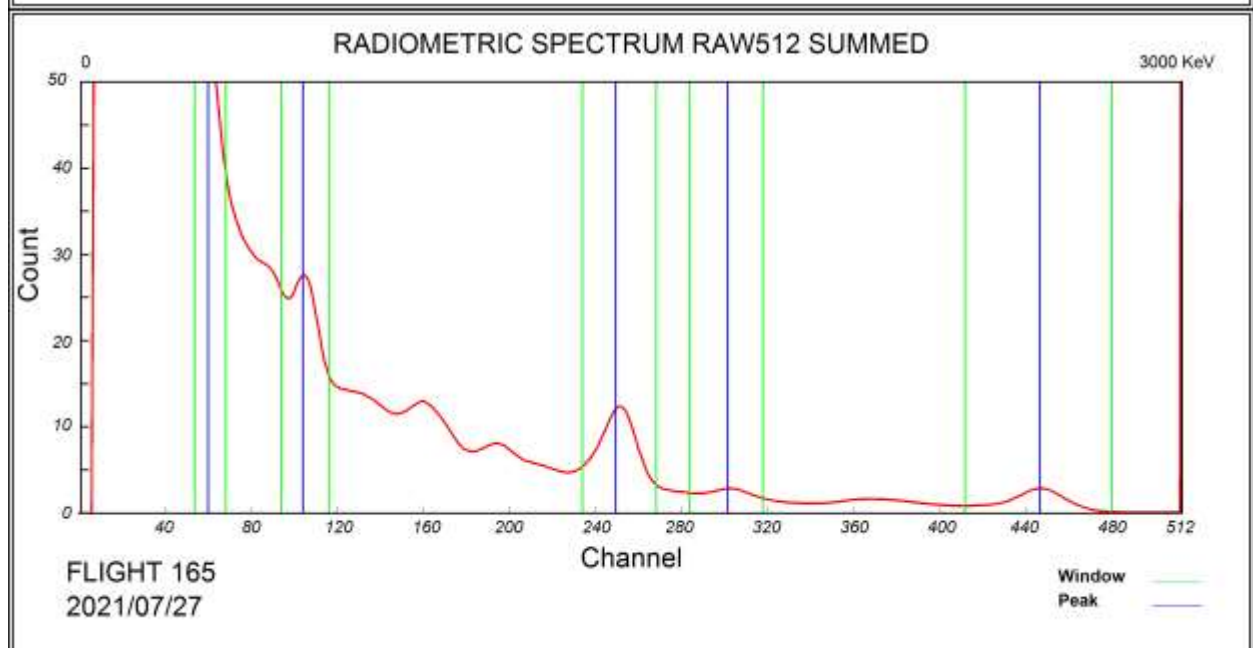


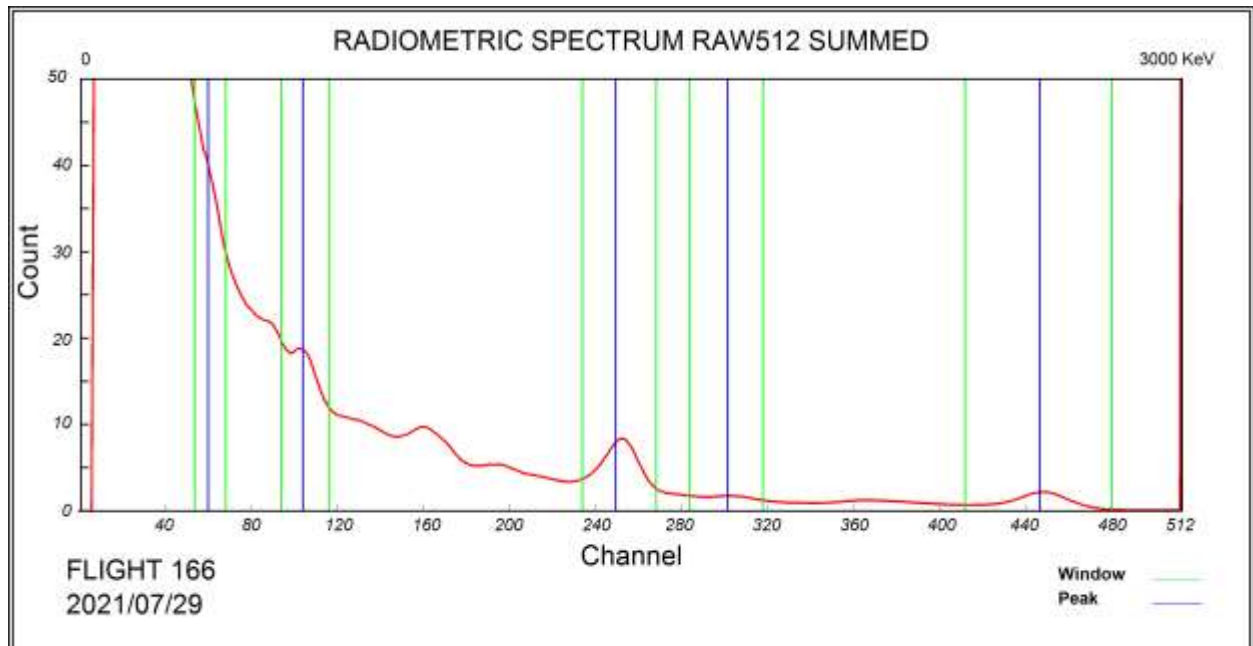
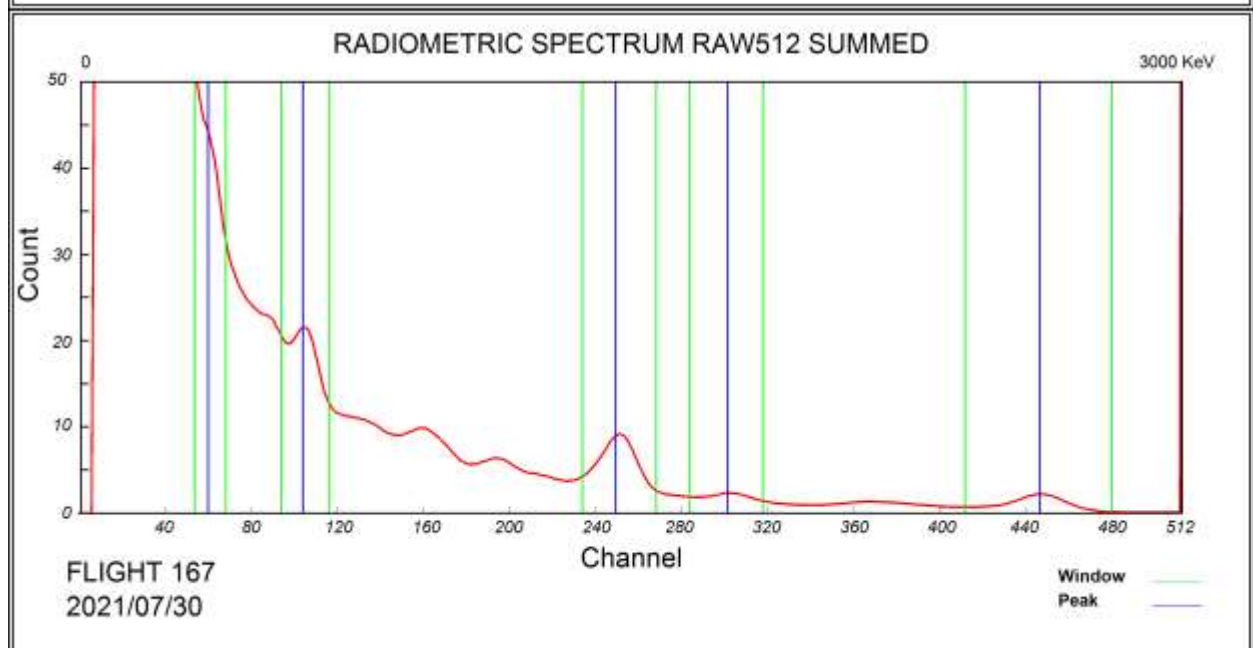


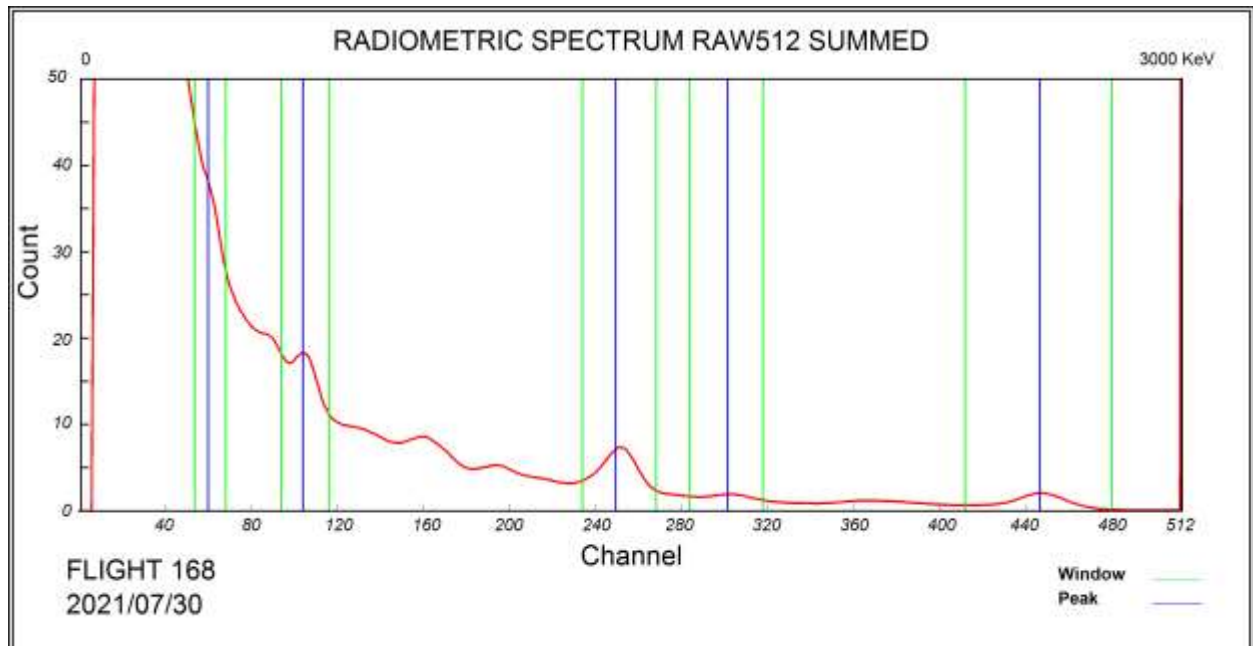
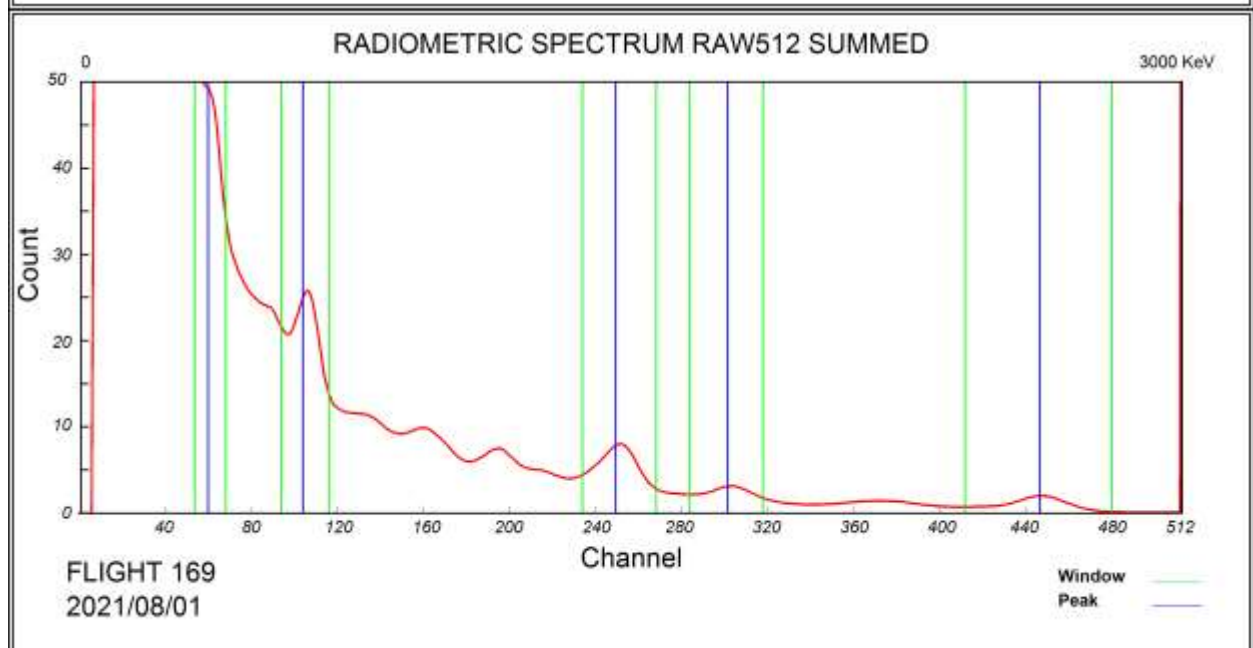


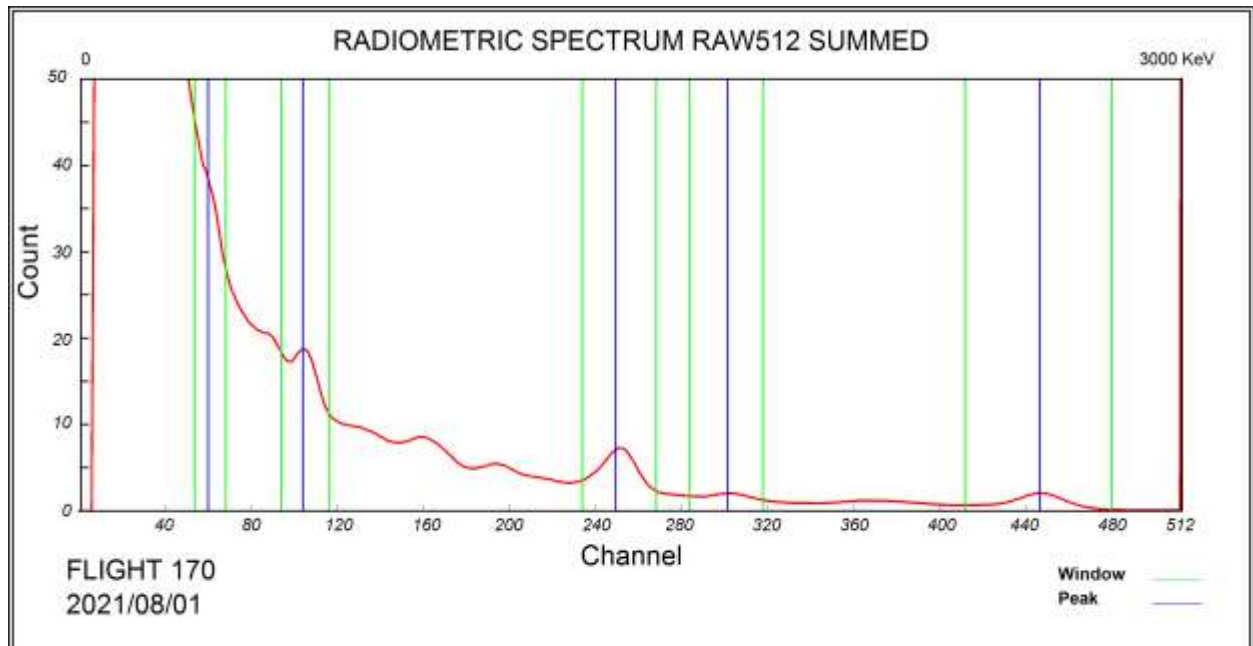
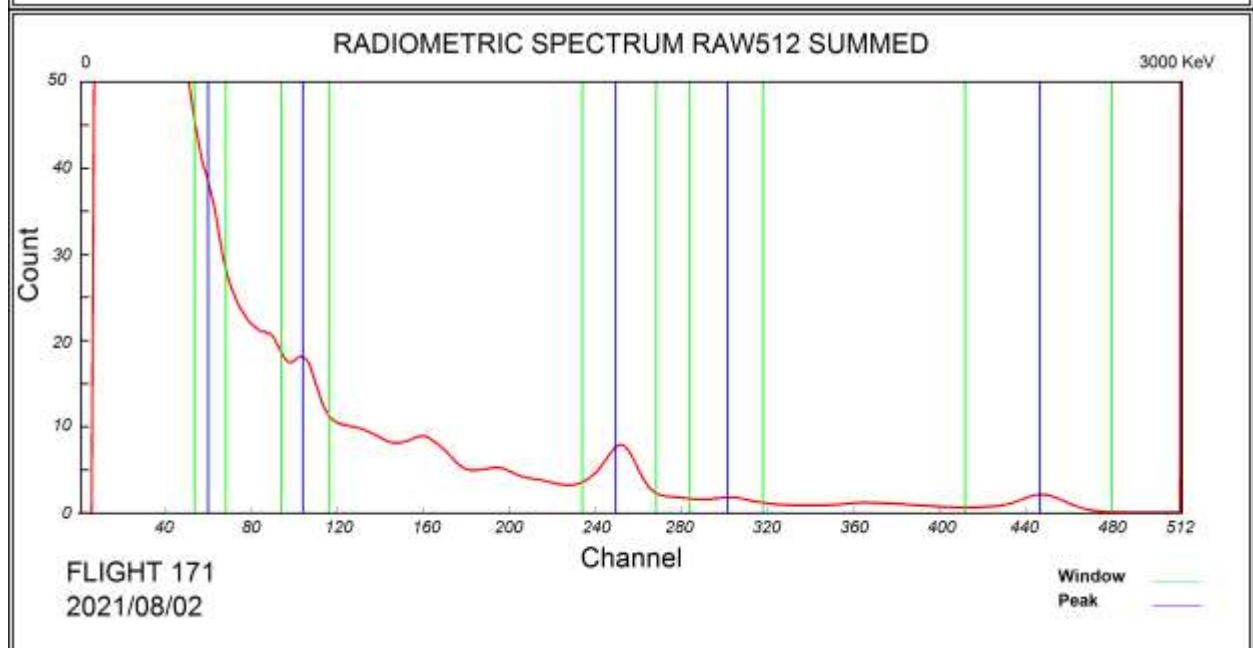


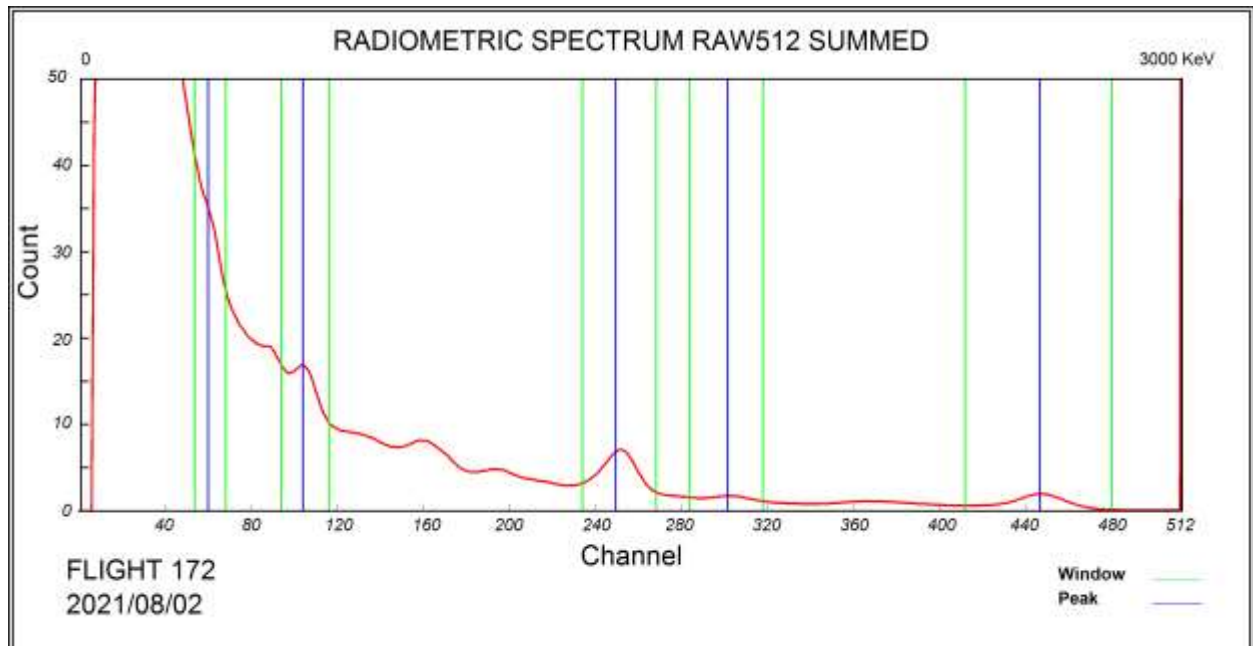
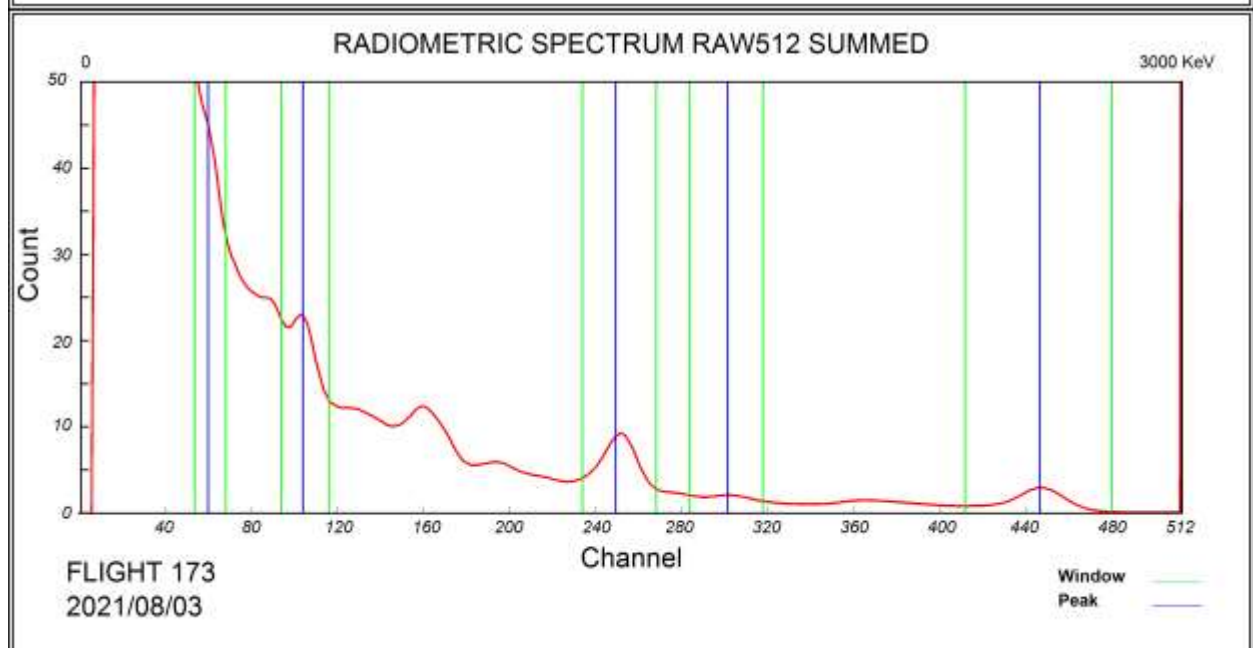


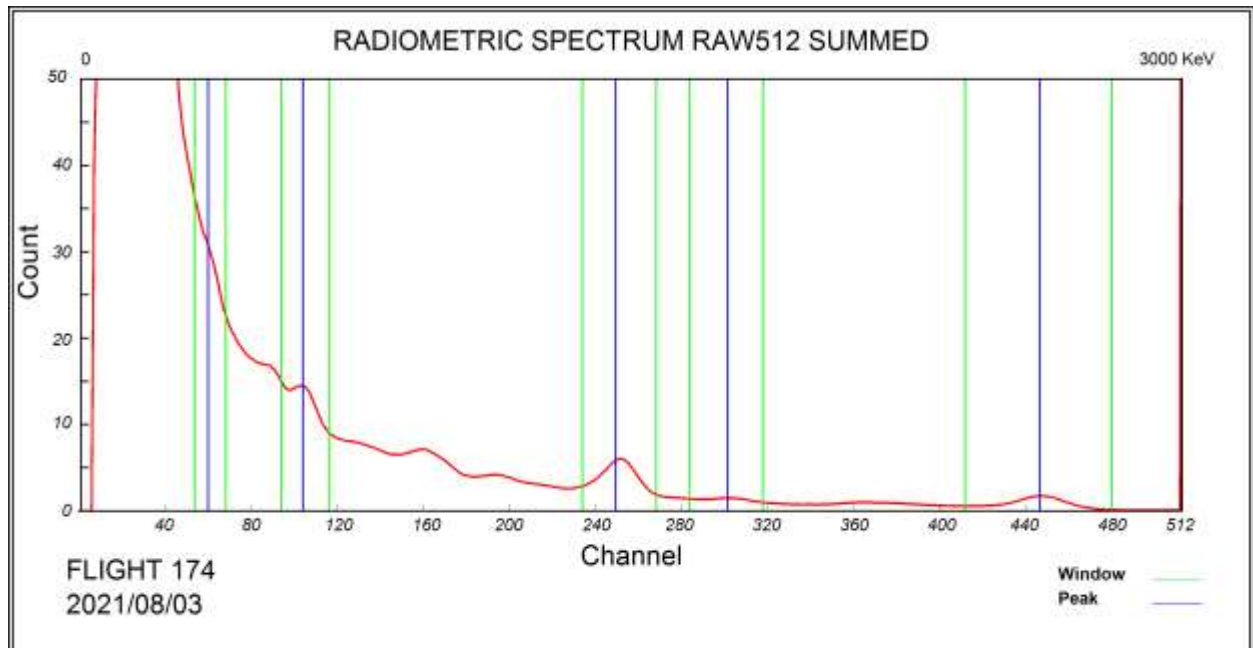
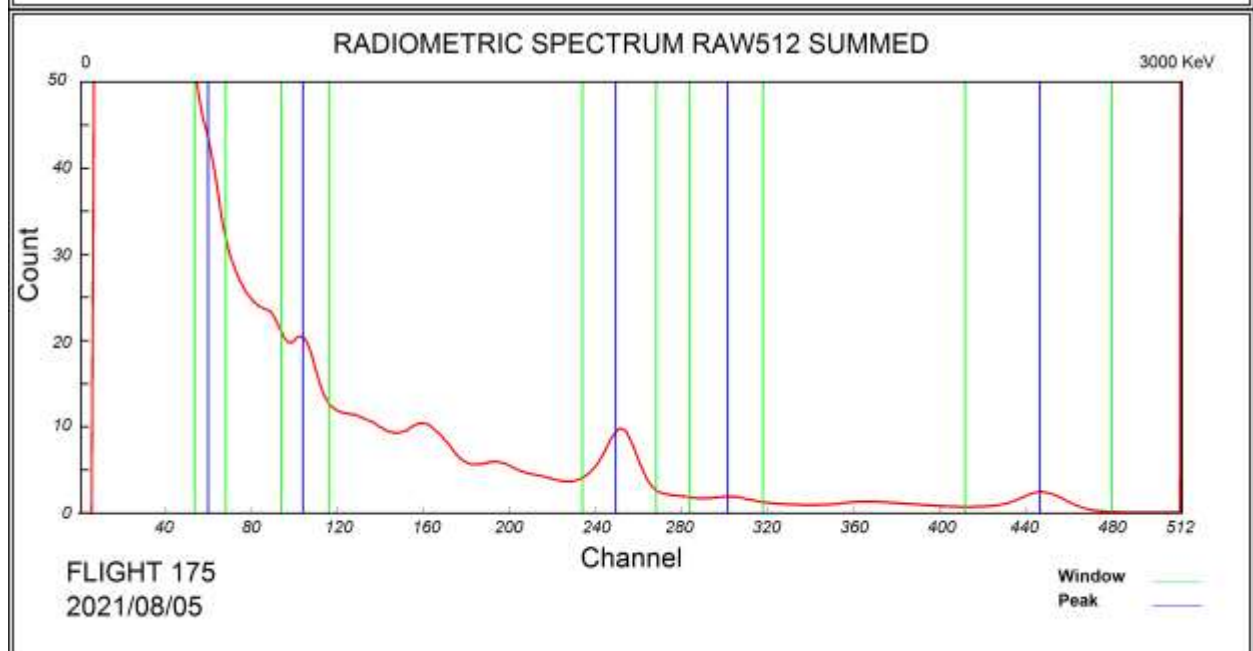


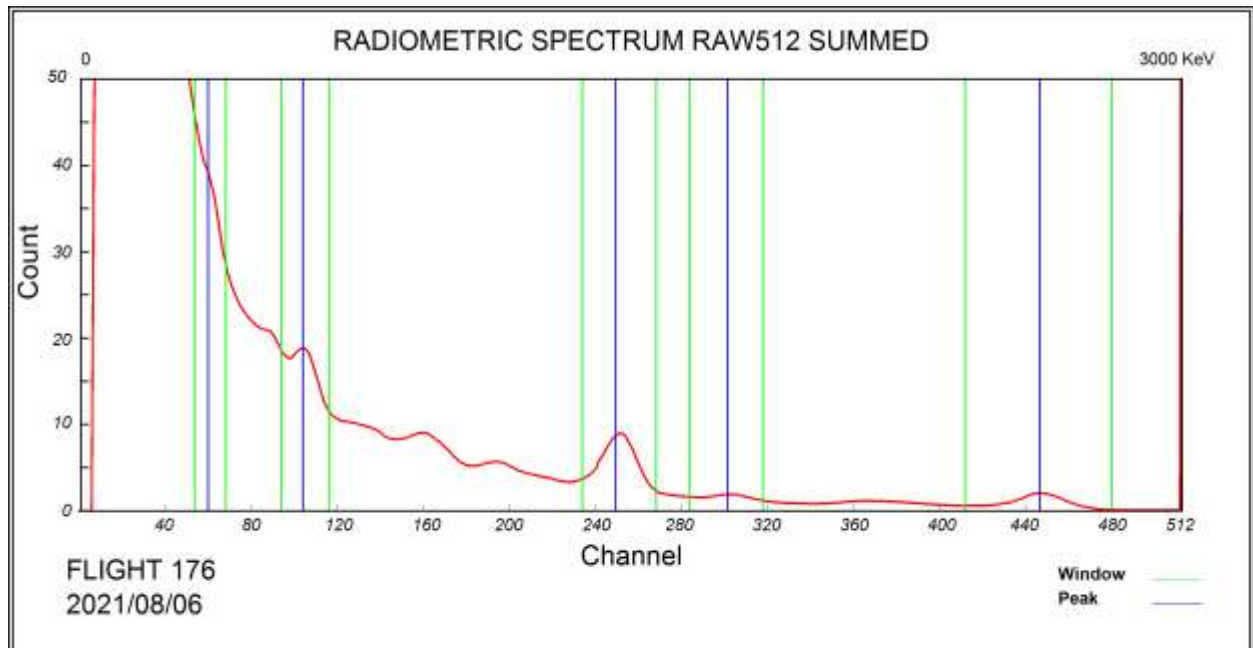
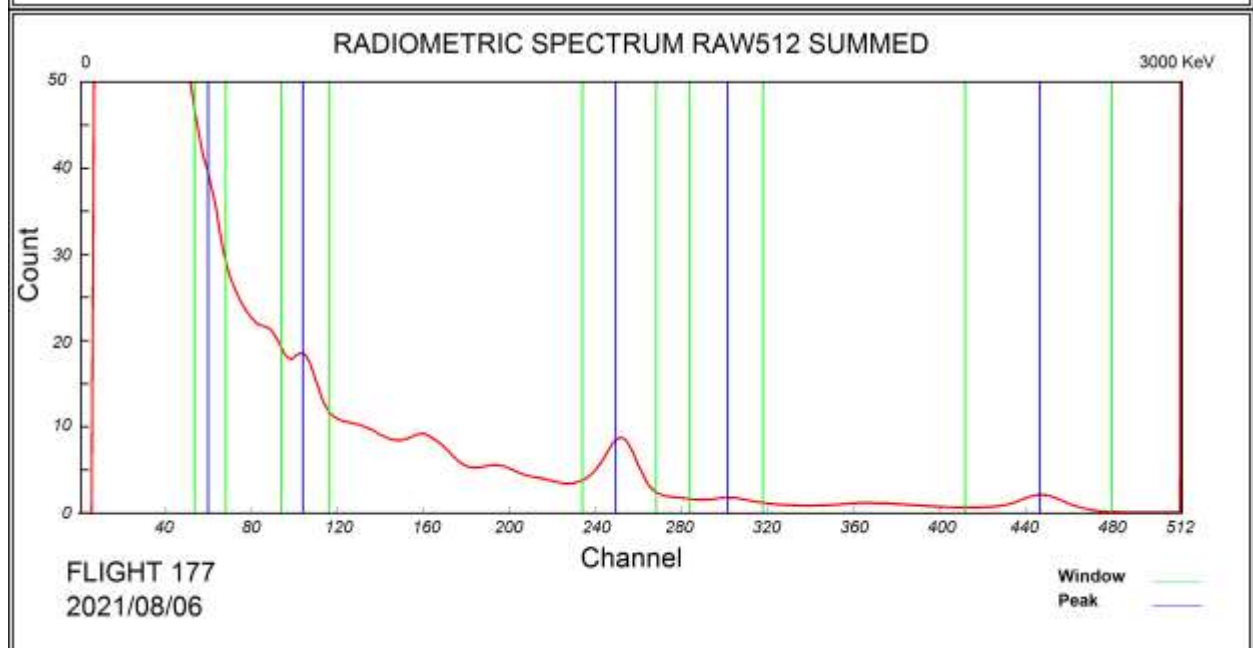


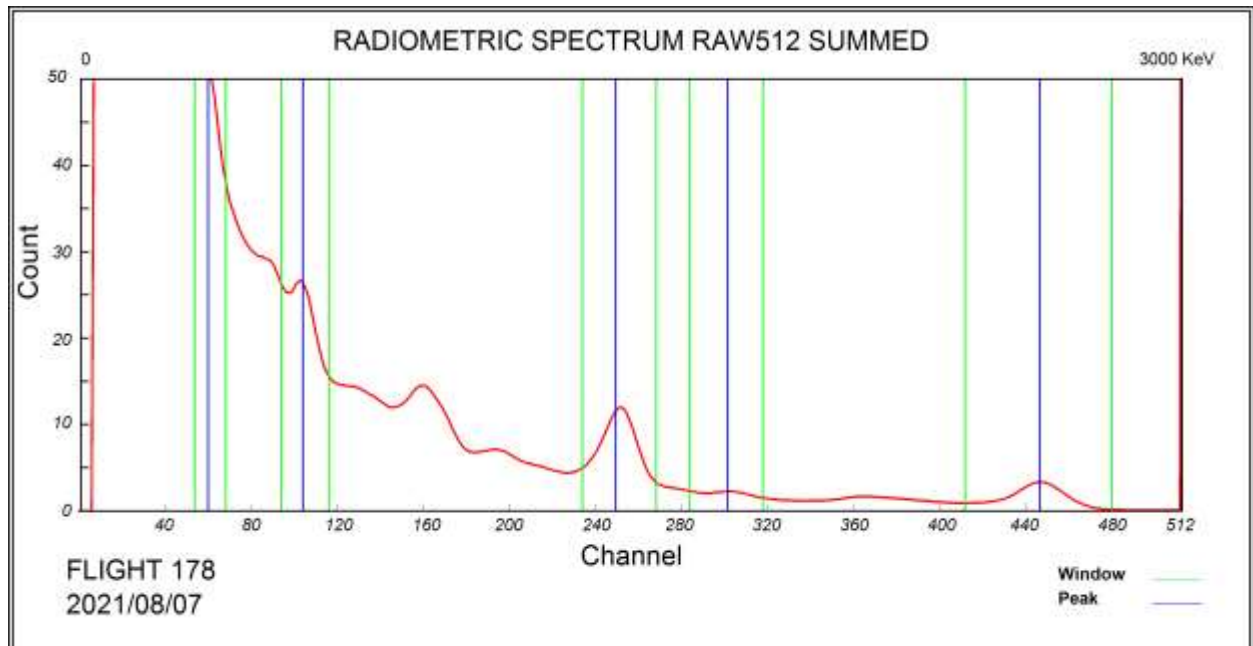
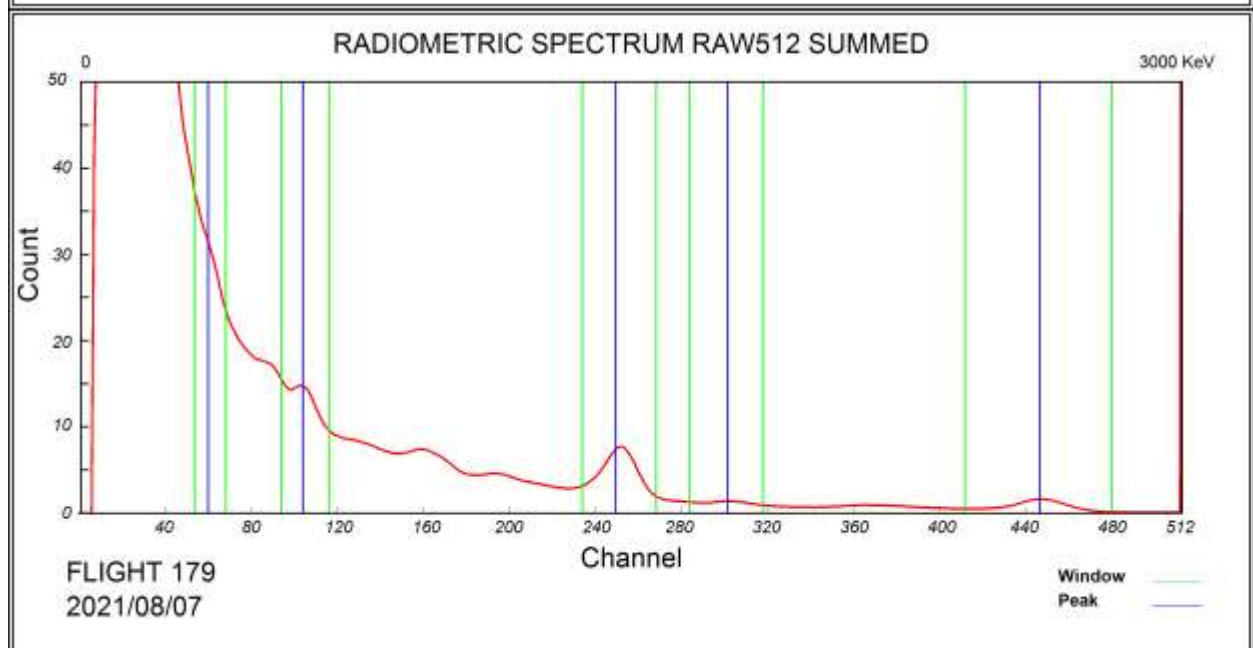


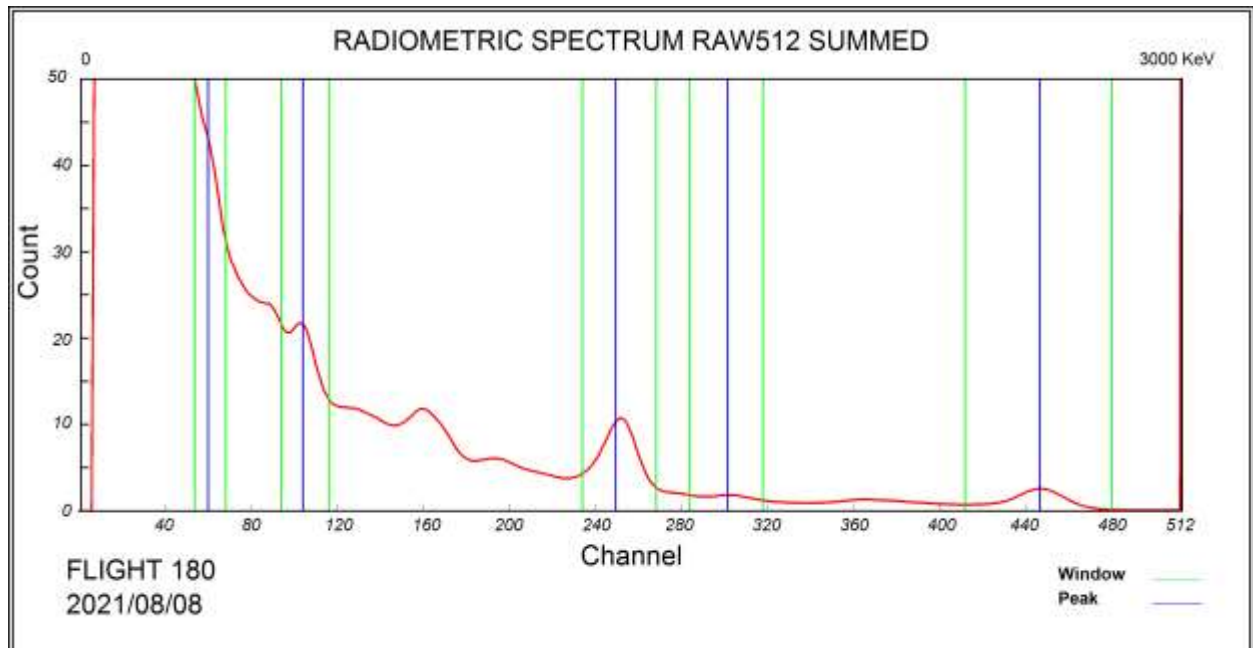
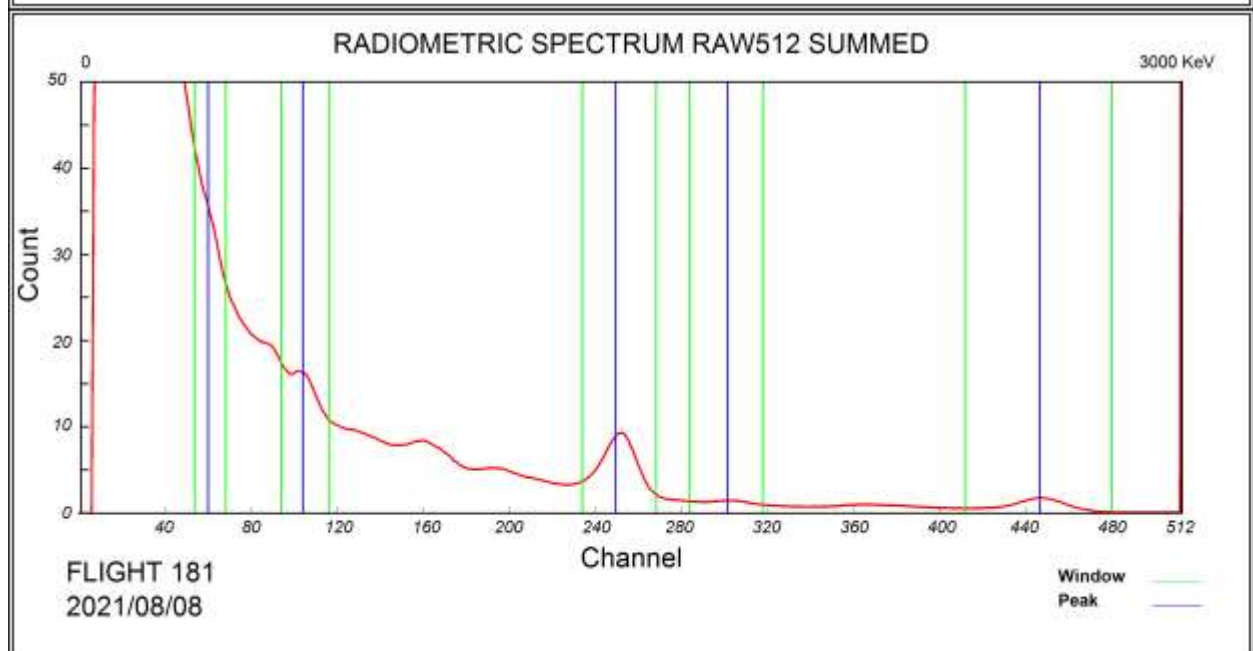


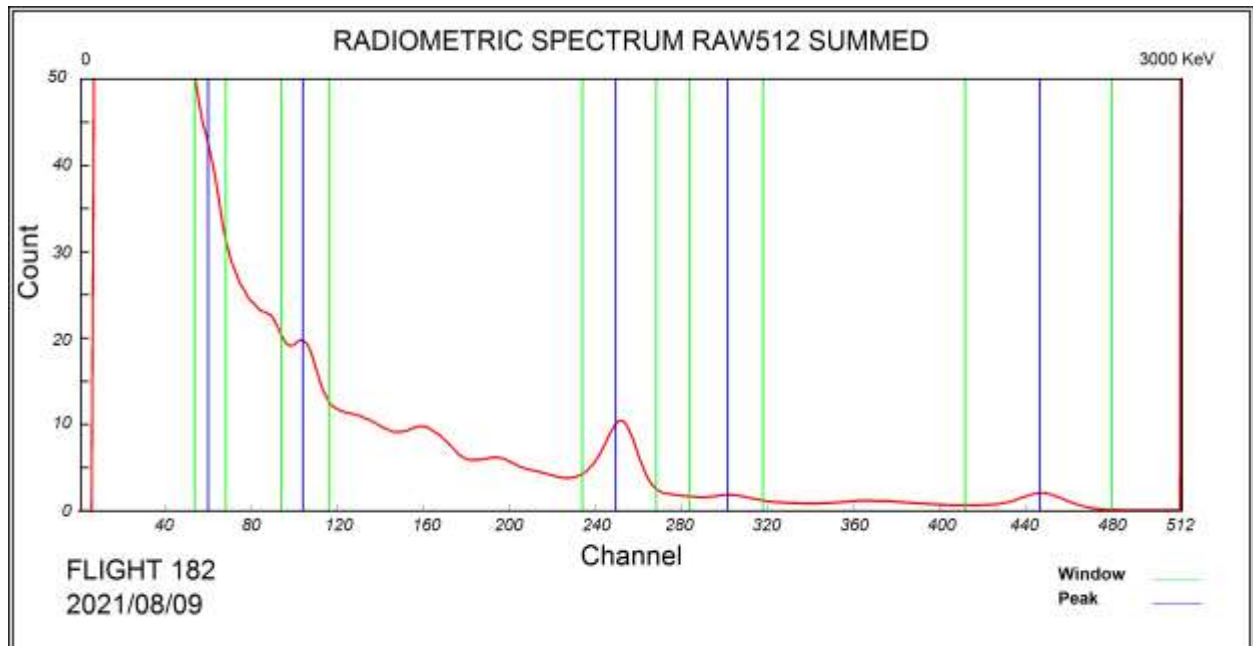
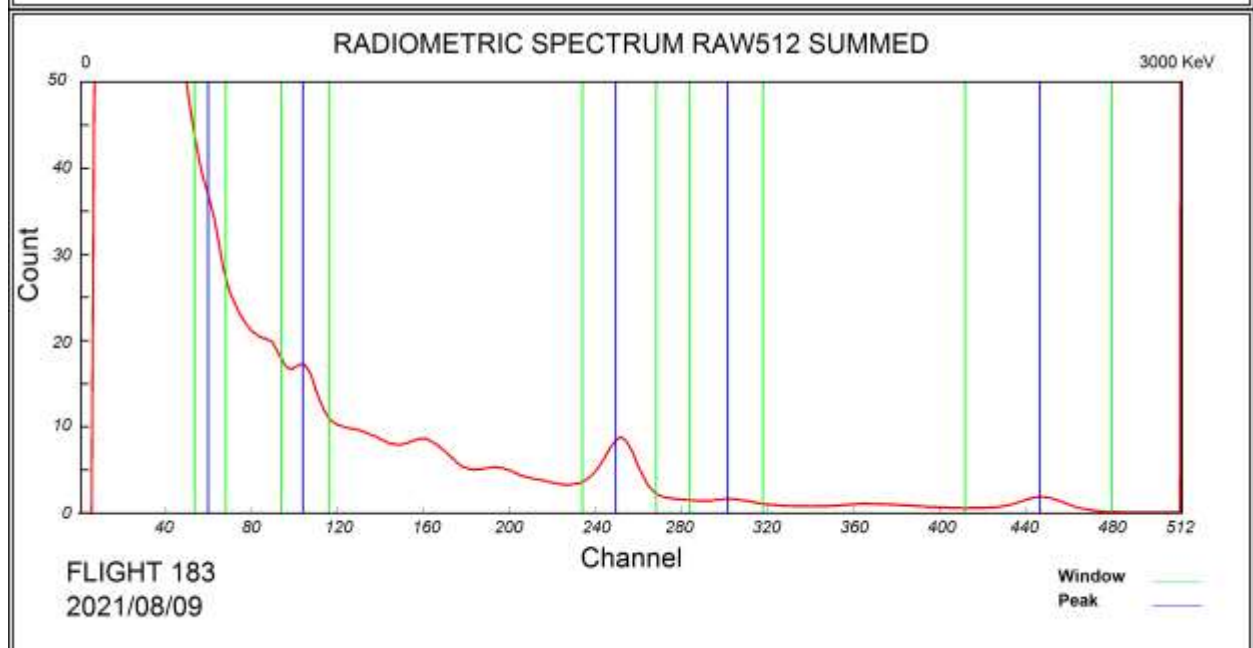


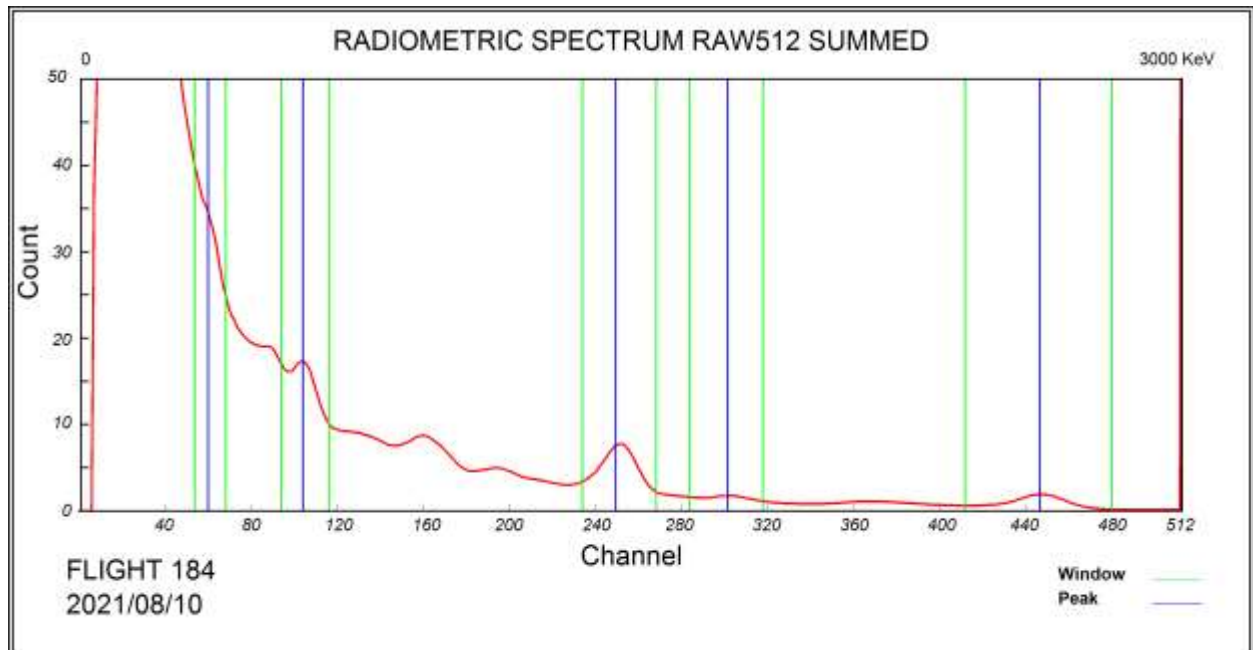












APPENDIX H: FLIGHT LINE LISTING

Cobar Main				
Line Number	Flight Number	Date (yyyymmdd)	Start Fid	End Fid

Cobar Extension 1				
Line Number	Flight Number	Date (yyyymmdd)	Start Fid	End Fid
20000	104	20210613	93263	94844
20010	104	20210613	90886	92501
20020	104	20210613	88577	90139
20030	104	20210613	86167	87796
20040	104	20210613	83763	85327
20050	104	20210613	81369	82963
20060	104	20210613	78915	80504
20070	104	20210613	76477	78107
20080	104	20210613	74032	75617
20090	104	20210613	71564	73172
20100	104	20210613	69187	70758
20110	104	20210613	66773	68366
20120	104	20210613	64365	65914
20130	104	20210613	61853	63489
20140	104	20210613	59321	60859
20150	104	20210613	56850	58474

20160	104	20210613	53813	56037
20170	104	20210613	50658	53014
20180	104	20210613	47539	49831
20190	104	20210613	44350	46726
20200	104	20210613	41272	43565
20210	104	20210613	38087	40488
20220	104	20210613	35079	37328
20230	104	20210613	31866	34249
20240	104	20210613	28760	31016
20250	102	20210612	173355	175796
20260	102	20210612	170194	172421
20270	102	20210612	167029	169450
20280	102	20210612	164050	166290
20290	102	20210612	160974	163351
20300	102	20210612	157833	160106
20310	102	20210612	154364	156849
20320	102	20210612	151293	153526
20330	102	20210612	148007	150411
20340	102	20210612	144943	147167
20350	102	20210612	141734	144118
20360	102	20210612	138704	140955
20370	102	20210612	135414	137805
20380	102	20210612	132256	134517
20390	102	20210612	128970	131367
20400	102	20210612	125878	128141
20410	102	20210612	122555	124962
20420	102	20210612	119394	121646
20430	102	20210612	116100	118523

20440	102	20210612	113052	115243
20450	102	20210612	109729	112140
20460	102	20210612	106675	108968
20470	102	20210612	103504	105907
20480	102	20210612	100395	102689
20490	102	20210612	97299	99695
20500	102	20210612	94271	96520
20510	102	20210612	91029	93449
20520	102	20210612	87847	90151
20530	102	20210612	84382	86828
20540	102	20210612	81217	83518
20550	102	20210612	77968	80445
20560	102	20210612	74767	77063
20570	102	20210612	71465	73950
20580	102	20210612	68146	70403
20590	102	20210612	64848	67302
20600	102	20210612	61587	63823
20610	102	20210612	58458	60885
20620	102	20210612	55231	57486
20630	102	20210612	51922	54306
20640	102	20210612	48632	50913
20650	102	20210612	45255	47654
20660	102	20210612	41992	44301
20670	102	20210612	38684	41063
20680	102	20210612	35642	37896
20690	102	20210612	32376	34695
20700	102	20210612	29374	31631
20710	101	20210608	147052	149481

20720	101	20210608	143967	146267
20730	101	20210608	140753	143200
20740	101	20210608	137628	139903
20750	101	20210608	134497	136861
20760	101	20210608	131365	133730
20770	101	20210608	128084	130481
20780	101	20210608	125078	127367
20790	101	20210608	121839	124233
20800	101	20210608	118727	121002
20810	101	20210608	115404	117795
20820	101	20210608	112320	114579
20830	101	20210608	108955	111371
20840	101	20210608	105725	108080
20850	101	20210608	102406	104798
20860	101	20210608	99037	101382
20870	101	20210608	95531	97946
20880	101	20210608	92090	94364
20890	101	20210608	88586	90971
20900	101	20210608	85341	87589
20910	103	20210613	120200	122494
20920	103	20210613	116735	119090
20940	103	20210613	113398	115684
20950	103	20210613	111704	112408
20960	103	20210613	110046	110749
20970	103	20210613	106771	107444
20980	103	20210613	108366	109046
20990	103	20210613	104996	105706
21000	103	20210613	103341	104029

21010	103	20210613	99998	100710
21020	103	20210613	101688	102370
21030	103	20210613	98284	98985
21040	103	20210613	96590	97288
21050	103	20210613	93133	93810
21060	103	20210613	94796	95488
21070	103	20210613	91477	92177
21080	103	20210613	89778	90483
21090	103	20210613	86369	87052
21100	103	20210613	88030	88721
21110	103	20210613	84547	85236
21120	103	20210613	82899	83598
21130	103	20210613	79492	80175
21140	103	20210613	81133	81834
21150	103	20210613	77589	78290
21160	103	20210613	75880	76608
21170	103	20210613	72446	73147
21180	103	20210613	74110	74812
21190	103	20210613	70578	71258
21200	103	20210613	68913	69620
21210	103	20210613	65394	66084
21220	103	20210613	67069	67764
21230	103	20210613	63631	64299
21240	103	20210613	61969	62688
21250	103	20210613	58648	59340
21260	103	20210613	60313	61002
72010	103	20210613	31076	34043
72020	103	20210613	34978	37923

72030	103	20210613	39117	41724
72040	103	20210613	42897	45472
72050	103	20210613	46701	49297
72060	103	20210613	50484	52625
72070	103	20210613	53659	56255
72080	103	20210613	125803	128412

Cobar Extension 5				
Line Number	Flight Number	Date (yyyymmdd)	Start Fid	End Fid
60000	176	20210806	51275	52295
60010	176	20210806	53035	54085
60020	176	20210806	54823	55863
60030	176	20210806	56516	57568
60040	176	20210806	58371	59387
60050	176	20210806	60230	61282
60060	176	20210806	61958	62996
60070	176	20210806	63828	64922
60080	176	20210806	65642	66708
60090	176	20210806	67513	68563
60100	176	20210806	69197	70255
60110	176	20210806	71104	72127
60120	176	20210806	72837	73910
60130	176	20210806	74760	75821
60140	176	20210806	76506	77565

60150	176	20210806	78426	79492
60160	176	20210806	80172	81236
60170	176	20210806	81971	83068
60180	176	20210806	83740	84805
60190	176	20210806	85651	86711
60200	176	20210806	87374	88433
60210	176	20210806	89217	90296
60220	176	20210806	91095	92154
60230	176	20210806	92946	94030
60240	176	20210806	94688	95741
60250	176	20210806	96520	97608
60260	176	20210806	98319	99370
60270	176	20210806	100224	101313
60280	176	20210806	101960	103014
60290	176	20210806	103828	104923
60300	176	20210806	105641	106689
60310	176	20210806	107560	108657
60320	176	20210806	109544	110599
60330	176	20210806	111477	112575
60340	176	20210806	113276	114331
60350	176	20210806	115084	116189
60360	176	20210806	116862	117922
60370	176	20210806	118879	119984
60380	176	20210806	120717	121776
60390	176	20210806	122556	123667
60400	176	20210806	124316	125373
60410	176	20210806	126103	127218
60420	176	20210806	127840	128902

60430	176	20210806	129760	130879
60440	176	20210806	131569	132645
60450	176	20210806	133351	134467
60460	176	20210806	135093	136141
60470	176	20210806	136817	137940
60480	176	20210806	138535	139618
60490	176	20210806	140372	141516
60500	176	20210806	142135	143228
60510	176	20210806	144012	146048
60520	179	20210807	52293	54314
60530	179	20210807	55019	56983
60540	179	20210807	57689	59669
60550	179	20210807	60416	62386
60560	179	20210807	63138	65087
60570	179	20210807	65896	67933
60580	179	20210807	68727	70734
60590	179	20210807	71484	73455
60600	179	20210807	74186	76192
60610	179	20210807	76891	78821
60620	179	20210807	79684	81670
60630	179	20210807	82387	84360
60640	179	20210807	85123	87169
60650	179	20210807	87857	89827
60660	179	20210807	90516	92588
60670	179	20210807	93189	95156
60680	179	20210807	95963	98004
60690	179	20210807	98693	100677
60700	179	20210807	101638	103659

60710	179	20210807	104430	105958
60720	179	20210807	106683	108247
60730	179	20210807	108957	110468
60740	179	20210807	111180	112716
60750	179	20210807	113358	114861
60760	179	20210807	115649	117204
60770	179	20210807	117937	119447
60780	179	20210807	120122	121669
60790	179	20210807	122362	123859
60800	179	20210807	124604	126168
60810	179	20210807	126851	128339
60820	179	20210807	129095	130657
60830	179	20210807	131442	132923
60840	179	20210807	133760	135328
60850	179	20210807	135905	137383
60860	179	20210807	138098	139663
60870	179	20210807	140395	141841
60880	179	20210807	142620	144165
60890	179	20210807	144805	146762
60900	179	20210807	147506	149553
60910	180	20210808	76698	78720
60920	180	20210808	79508	81385
60930	180	20210808	82150	84208
60940	180	20210808	85001	86886
60950	180	20210808	87634	89618
60960	180	20210808	90505	92387
60970	180	20210808	93154	95245
60980	180	20210808	96016	97929

60990	180	20210808	98790	100705
61000	180	20210808	101540	103380
61010	180	20210808	104092	106006
61020	180	20210808	106911	108705
61030	180	20210808	109564	111428
61040	180	20210808	112280	114131
61050	180	20210808	114939	116840
61060	180	20210808	117582	119394
61070	180	20210808	120256	122132
61080	180	20210808	122919	124691
61090	180	20210808	125308	127153
61100	180	20210808	128097	129900
61110	180	20210808	130602	132483
61120	180	20210808	133320	135177
61130	180	20210808	135846	137718
61140	180	20210808	138530	140374
61150	180	20210808	141090	142995
61160	180	20210808	143747	145564
61170	180	20210808	146372	148234
61180	180	20210808	149057	150913
61190	180	20210808	151549	153516
61200	180	20210808	154298	156129
61210	180	20210808	156874	158735
61220	180	20210808	159470	161311
61230	180	20210808	162165	164004
61240	180	20210808	164757	166572
61250	180	20210808	168173	170933
61260	180	20210808	171741	174434

61270	181	20210808	23956	26786
61280	181	20210808	27446	30110
61290	181	20210808	30724	33513
61300	181	20210808	34153	36830
61310	181	20210808	37458	40270
61320	181	20210808	40874	43544
61330	181	20210808	44173	47024
61340	181	20210808	47629	50304
61350	181	20210808	50983	53804
61360	181	20210808	54740	57092
61370	181	20210808	57795	60268
61380	181	20210808	60902	63252
61390	181	20210808	63933	66374
61400	181	20210808	66961	69339
61410	181	20210808	69990	72456
61420	181	20210808	73054	75421
61430	181	20210808	76037	78514
61440	181	20210808	79100	81467
61450	181	20210808	82093	84514
61460	181	20210808	85112	87453
61470	181	20210808	88106	90554
61480	181	20210808	91219	93571
61490	181	20210808	94240	96707
61500	181	20210808	97317	99701
61510	181	20210808	100347	102793
61520	181	20210808	103445	105804
61530	181	20210808	106407	108845
61540	181	20210808	109450	111819

61550	181	20210808	112462	114908
61560	181	20210808	115536	117882
61570	181	20210808	118545	120972
61580	181	20210808	121648	123997
61590	181	20210808	124652	127088
61600	181	20210808	127705	130058
61610	181	20210808	130687	133126
61620	181	20210808	133704	136098
61630	181	20210808	136696	139117
61640	181	20210808	139684	141977
61650	182	20210809	47933	50396
61660	182	20210809	51008	53405
61670	182	20210809	54189	56650
61680	182	20210809	57275	59653
61690	182	20210809	60336	62789
61700	182	20210809	63467	65846
61710	182	20210809	66519	68952
61720	182	20210809	69616	72000
61730	182	20210809	72582	75057
61740	182	20210809	75745	78161
61750	182	20210809	78831	81295
61760	182	20210809	81969	84402
61770	182	20210809	85013	87467
61780	182	20210809	88065	90483
61790	182	20210809	91089	93521
61800	182	20210809	94116	96553
61810	182	20210809	97136	99542
61820	182	20210809	100132	102571

61830	182	20210809	103117	105513
61840	182	20210809	106105	108559
61850	182	20210809	109137	111536
61860	182	20210809	112102	114579
61870	182	20210809	115143	117566
61880	182	20210809	118113	120589
61890	182	20210809	121171	123559
61900	182	20210809	124152	126588
61910	182	20210809	128339	129677
61920	182	20210809	130255	131590
61930	182	20210809	132282	133593
61940	182	20210809	134221	135560
61950	182	20210809	136419	137750
61960	182	20210809	138320	139643
61970	182	20210809	140267	141611
61980	182	20210809	142197	143531
61990	182	20210809	144085	145431
62000	182	20210809	146034	147350
62010	182	20210809	147946	149271
62020	182	20210809	149870	151199
62030	182	20210809	151807	153125
62040	182	20210809	153675	154992
62050	182	20210809	155665	156954
62060	182	20210809	157535	158835
62070	182	20210809	159443	160744
62080	182	20210809	161411	162706
62090	182	20210809	163327	164611
62100	182	20210809	165202	166488

62110	182	20210809	167080	168306
62120	182	20210809	168940	170190
62130	183	20210809	23308	24594
62140	183	20210809	25296	26560
62150	183	20210809	27328	28599
62160	183	20210809	29322	30571
62170	183	20210809	31237	32514
62180	183	20210809	33137	34398
62190	183	20210809	35032	36294
62200	183	20210809	36901	38161
62210	183	20210809	38881	40171
62220	183	20210809	40839	42101
62230	183	20210809	42725	43951
62240	183	20210809	44662	45903
62250	183	20210809	46596	47808
62260	183	20210809	48496	49735
62270	183	20210809	50385	51629
62280	183	20210809	52411	53658
62290	183	20210809	54223	55477
62300	183	20210809	56148	57417
62310	183	20210809	58119	59360
62320	183	20210809	60022	61290
62330	183	20210809	61962	63211
62340	183	20210809	63927	65193
62350	183	20210809	65905	67184
62360	183	20210809	67934	69183
62370	183	20210809	69935	71213
62380	183	20210809	71892	73140

62390	183	20210809	73924	75241
62400	183	20210809	75836	77060
62410	183	20210809	77719	79010
62420	183	20210809	79682	80929
62430	183	20210809	81629	82916
62440	183	20210809	83576	84799
62450	183	20210809	85432	86719
62460	183	20210809	87425	88690
76010	183	20210809	98549	99947
76020	179	20210807	48783	50730
76030	184	20210810	47916	49262
76040	179	20210807	40710	47883
76050	180	20210808	65489	72412
76060	176	20210806	42900	50006
76070	179	20210807	152503	157889
76080	183	20210809	90852	94712
76090	180	20210808	74640	75681
76100	184	20210810	51928	53862
76110	184	20210810	54929	56715
76120	184	20210810	57607	59572

Cobar Extension 4				
Line Number	Flight Number	Date (yyyymmdd)	Start Fid	End Fid
50000	167	20210730	6057	6198
50010	167	20210730	5841	5972
50020	167	20210730	5633	5774

50030	167	20210730	5418	5549
50040	167	20210730	5103	5155
50050	167	20210730	5215	5352
50060	166	20210729	14730	14778
50070	166	20210729	14540	14673
50080	166	20210729	14243	14294
50090	166	20210729	14351	14484
50100	166	20210729	14120	14169
50110	166	20210729	13932	14065
50120	166	20210729	13630	13681
50130	166	20210729	13737	13870
50140	166	20210729	13526	13575
50150	166	20210729	13338	13471
50160	166	20210729	13031	13082
50170	166	20210729	13138	13270
50180	166	20210729	12887	12937
50190	166	20210729	12698	12832
50200	166	20210729	12380	12450
50210	166	20210729	12505	12639
50220	166	20210729	12252	12321
50230	166	20210729	12063	12198
50240	166	20210729	11749	11818
50250	166	20210729	11874	12006
50260	166	20210729	11623	11693
50270	166	20210729	11431	11568
50280	166	20210729	11110	11180
50290	166	20210729	11235	11368

50300	166	20210729	10981	11052
50310	166	20210729	10791	10927
50320	166	20210729	10465	10535
50330	166	20210729	10589	10722
50340	166	20210729	10334	10406
50350	166	20210729	10141	10279
50360	166	20210729	9820	9906
50370	166	20210729	9946	10078
50380	166	20210729	9676	9763
50390	166	20210729	9497	9635
50400	166	20210729	9185	9270
50410	166	20210729	9309	9440
50420	166	20210729	9044	9130
50430	166	20210729	8866	9004
50440	166	20210729	8538	8624
50450	166	20210729	8663	8794
50460	166	20210729	8389	8476
50470	166	20210729	8210	8350
50480	166	20210729	7885	7970
50490	166	20210729	8008	8140
50500	166	20210729	7725	7813
50510	166	20210729	7545	7686
50520	166	20210729	7223	7308
50530	166	20210729	7346	7479
50540	166	20210729	7072	7161
50550	166	20210729	6893	7034
50560	166	20210729	6567	6653

50570	166	20210729	6690	6822
50580	166	20210729	6413	6504
50590	166	20210729	6235	6375
50600	169	20210801	2469	2555
50610	166	20210729	6037	6170
50620	166	20210729	5533	5625
50630	166	20210729	5353	5495
50640	166	20210729	5024	5110
50650	166	20210729	5146	5280
50660	166	20210729	4650	4938
50680	166	20210729	4311	4585
50690	166	20210729	3958	4245
50700	166	20210729	3617	3889
50710	166	20210729	3262	3551
50720	166	20210729	2920	3194
50730	166	20210729	2561	2850
50740	166	20210729	2221	2495
50750	164	20210726	15522	15819
50760	164	20210726	15179	15454
50770	164	20210726	14818	15116
50780	164	20210726	14467	14750
50790	164	20210726	14090	14389
50800	164	20210726	13737	14026
50810	164	20210726	13354	13648
50820	164	20210726	12992	13282
50830	164	20210726	12629	12915
50840	164	20210726	12268	12558

50850	164	20210726	11901	12189
50860	164	20210726	11542	11827
50870	164	20210726	11167	11463
50880	164	20210726	10804	11089
50890	164	20210726	10431	10723
50900	164	20210726	10064	10349
50910	164	20210726	9686	9981
50920	164	20210726	9329	9615
50930	164	20210726	8946	9243
50940	164	20210726	8585	8868
50950	164	20210726	8164	8464
50960	164	20210726	7793	8075
50970	164	20210726	7407	7709
50980	164	20210726	7029	7316
50990	164	20210726	6634	6936
51000	164	20210726	6268	6551
51010	164	20210726	5886	6184
51020	164	20210726	5528	5809
51030	164	20210726	5132	5435
75010	164	20210726	4687	4884
75020	164	20210726	4404	4607
75030	164	20210726	4129	4328
75040	164	20210726	3844	4047
75050	164	20210726	3566	3763
75060	164	20210726	3264	3370
75070	164	20210726	3045	3183
75080	164	20210726	2730	2924

75090	164	20210726	2451	2643
75100	164	20210726	1561	1732

Cobar Extension 6				
Line Number	Flight Number	Date (yyyymmdd)	Start Fid	End Fid
80010	178	20210807	154077	155844
80020	178	20210807	151762	153397
80030	178	20210807	149311	151115
80040	178	20210807	147029	148713
80050	178	20210807	144677	146446
80060	178	20210807	142386	144016
80070	178	20210807	140017	141779
80080	178	20210807	137595	139266
80090	178	20210807	135143	136946
80100	178	20210807	132805	134462
80110	178	20210807	130308	132122
80120	178	20210807	127923	129605
80130	178	20210807	125506	127272
80140	178	20210807	123142	124807
80150	178	20210807	120647	122477
80160	178	20210807	118281	119944
80170	178	20210807	115622	117451
80180	178	20210807	113299	114925
80190	178	20210807	110753	112527
80200	178	20210807	108009	110049
80210	178	20210807	105123	107332
80220	178	20210807	102332	104397

80230	178	20210807	99405	101645
80240	177	20210806	107722	110037
80250	177	20210806	105016	107031
80260	177	20210806	102202	104486
80270	177	20210806	99443	101444
80280	177	20210806	96660	98894
80290	177	20210806	93992	95993
80300	177	20210806	90900	93225
80310	177	20210806	88195	90225
80320	177	20210806	85308	87590
80330	177	20210806	82624	84629
80340	177	20210806	79752	82021
80350	177	20210806	77045	79073
80360	177	20210806	74153	76389
80370	177	20210806	71525	73534
80380	177	20210806	68732	70965
80390	177	20210806	65963	67989
80400	177	20210806	63109	65374
80410	177	20210806	60388	62385
80420	177	20210806	57550	59843
80430	177	20210806	54770	56772
80440	178	20210807	95786	97815
80450	178	20210807	92892	95085
80460	178	20210807	90171	92169
80470	178	20210807	87318	89525
80480	178	20210807	84613	86634
80490	178	20210807	81728	83933
80500	178	20210807	79031	81034

80510	177	20210806	50895	53229
80520	177	20210806	48078	50109
80530	177	20210806	45198	47436
80540	177	20210806	42506	44479
87010	177	20210806	23388	25003
87020	177	20210806	25903	27363
87030	177	20210806	28624	30210
87040	177	20210806	31086	32523
87050	177	20210806	33505	35071
87060	177	20210806	35969	37391
87070	177	20210806	38271	39266
87080	177	20210806	40033	40957