# SAFARI 2000 MAS Flight 00147

To obtain tracks from this flight, click the checkbox for the desired track in the "Browse Images" table below. When you have selected your desired flights, click the "List" button to see a list of your tracks prior to placing into the shopping cart.

This is **Flight #00-147**

**RBG Images**
Click Image

Track #01

R:2.15 microns
G:1.64 microns
B:0.55 microns

**Summary Information**
Date: August 17, 2000
ER-2 Flight Number: 00-147
Location: South Africa to Indian Ocean
Principal Investigator: Dr. Michael King (NASA GSFC)
Flight Scientist:
Additional Sensors: AirMISR, CLS, LAS, MAS, MOPITT-A, S-HIS, SSFR (see Instrument Status below)

**Flight Track Map**


Click to enlarge

**Processing Information**
Level-1B Data processed by: Ames Research Center
Level-1B Data Version: #2
Level-1B Configuration: (sample file)
Calibration Type: Final
Calibration Version: 1.0

**Level-1B Browse Imagery**
Straight Line Flight Tracks: 10 processed
Scanlines Processed: 66969
Solar Azimuth and Zenith Angles

**Browse Images**

Click on the Flight Track number to see track images.
Click on the Check Box to list HDF files prior to adding to shopping cart.
Lat/Lon ranges are for the BEG-END scanline nadir pixels.

| List | Flight Track | Time_Span (GMT) | Heading (Deg) | Lat_Range (Deg_S) | Lon_Range (Deg_E) | Length (Scanlines) | Altitude m (msl) |
|---|---|---|---|---|---|---|---|
| ☐ | 01 | 07:19-07:22 | 143 | 24.65-24.94 | 31.34-31.57 | 1195 | 20221 |
| ☐ | 02 | 07:23-07:48 | 115 | 24.98-26.00 | 31.63-34.50 | 9380 | 20205 |
| ☐ | 03 | 07:49-08:16 | 189 | 26.13-29.01 | 34.58-33.81 | 9999 | 20227 |
| ☐ | 04 | 08:16-08:43 | 196 | 29.01-31.84 | 33.81-33.00 | 9999 | 20307 |
| ☐ | 05 | 08:43-08:51 | 196 | 31.84-32.67 | 33.00-32.75 | 2932 | 20270 |
| ☐ | 06 | 08:53-09:19 | 354 | 32.67-29.62 | 32.59-32.20 | 9999 | 20289 |
| ☐ | 07 | 09:19-09:46 | 355 | 29.62-26.60 | 32.20-31.78 | 9999 | 20492 |
| ☐ | 08 | 09:46-10:01 | 356 | 26.60-24.97 | 31.78-31.60 | 5442 | 20579 |
| ☐ | 09 | 10:02-10:19 | 290 | 24.90-24.23 | 31.55-29.55 | 6426 | 20616 |
| ☐ | 10 | 10:20-10:25 | 1 | 24.12-23.63 | 29.46-29.46 | 1598 | 20617 |

All images in sequence

**ER-2 Flight Log**
Author: Dr. Michael King
Mission Scientist: Dr. Michael King
ER-2 Pilot: Jim Barrilleaux
Takeoff: 17Aug2000 0000 UTC
Landing: 17Aug2000 0000 UTC
Duration: 04:15:00

Objective:

The objective of this mission wasto fly the ER-2 over surface sites at Skukuza (24°55'S, 31°36'E), then over the Mozambique Channel off Maputo, turning SSW to underfly the Terra satellite on a heading of 194.4° and an overpass time of 0810 UTC. This flight track ran for 744 km from 26°10'S, 34°35'E to 32° 40'S, 32°45'E. After this long flight line, the ER-2 turned approximately north and flew directly over the lowveld, crossing Swaziland and Skukuza, before turning for home. The return leg overflew the escarpment southwest of Blyde River Canyon. Cloudy skies occurred over part of the Mozambique Channel flight line, but skies were clear for the Terra overpass and for approximately 125 km. The mission was coordinated with JRB and Terra at 0810 UTC, where JRB measured CO at 17 levels in the lower atmosphere for intercomparison with MOPITT (and MOPITT-A).

Key Flight Legs:

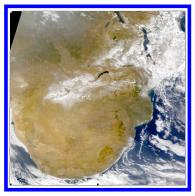
The ER-2 overflew the Skukuza airport (SMART station) shortly after attaining altitude (0723 UTC) and again on the return leg from Durban (1001 UTC). Clear sky overpasses of the escarpment and the Pietersburg International Airport were obtained on the return.The RC-10 camera was turned on for flights over the lowveld of Kruger National Park and Swaziland, but not during the offshore flight lines.

Pilot Report:

The ER-2 pilot reported 20% low cloud cover during the Terra overpass at 0810 UTC, but 50% for most of the Terra ground track. On the return over the lowveld the visibility was quite good, with only about 5-8 modest veld fires being observed.

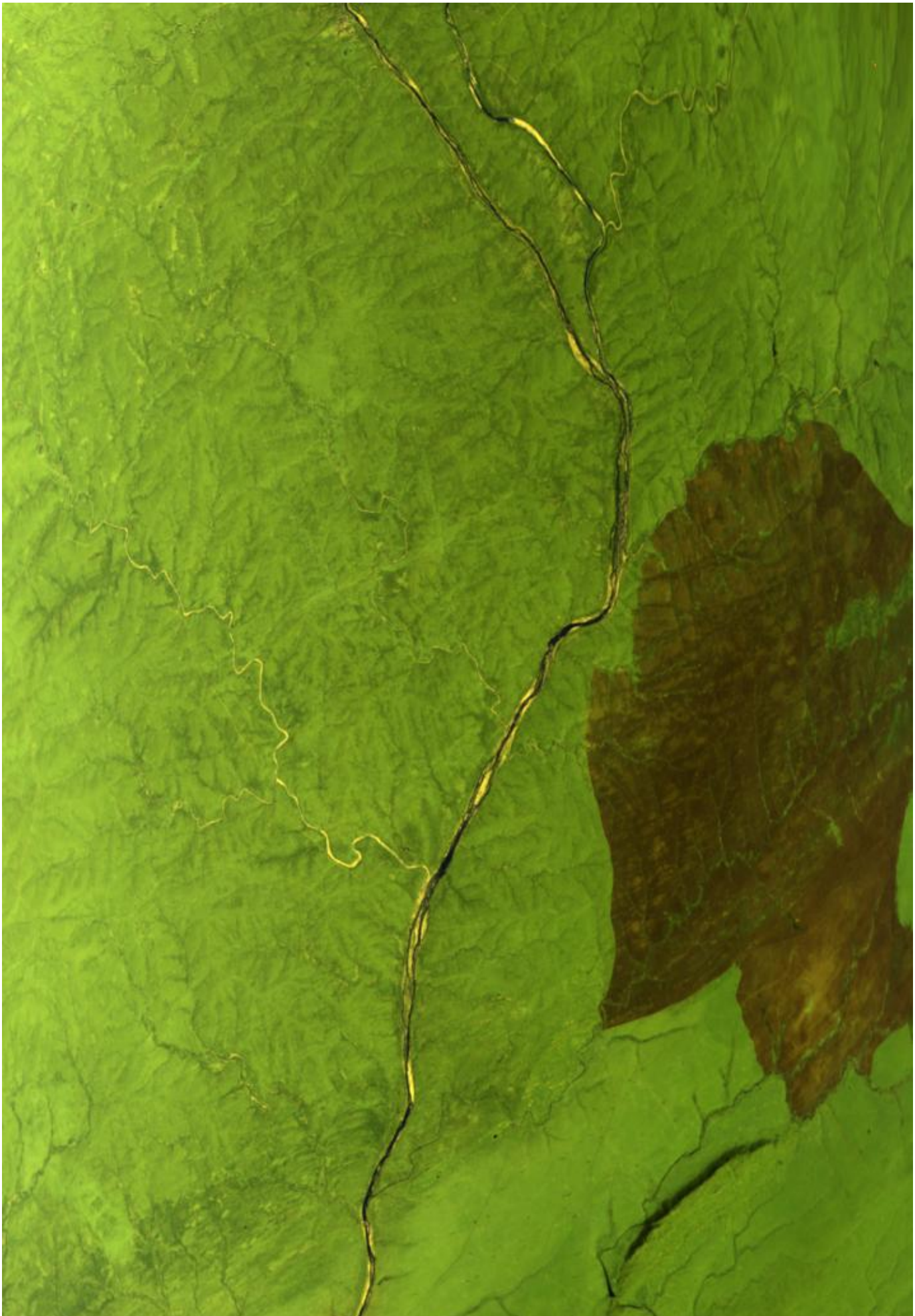
Meteorology:

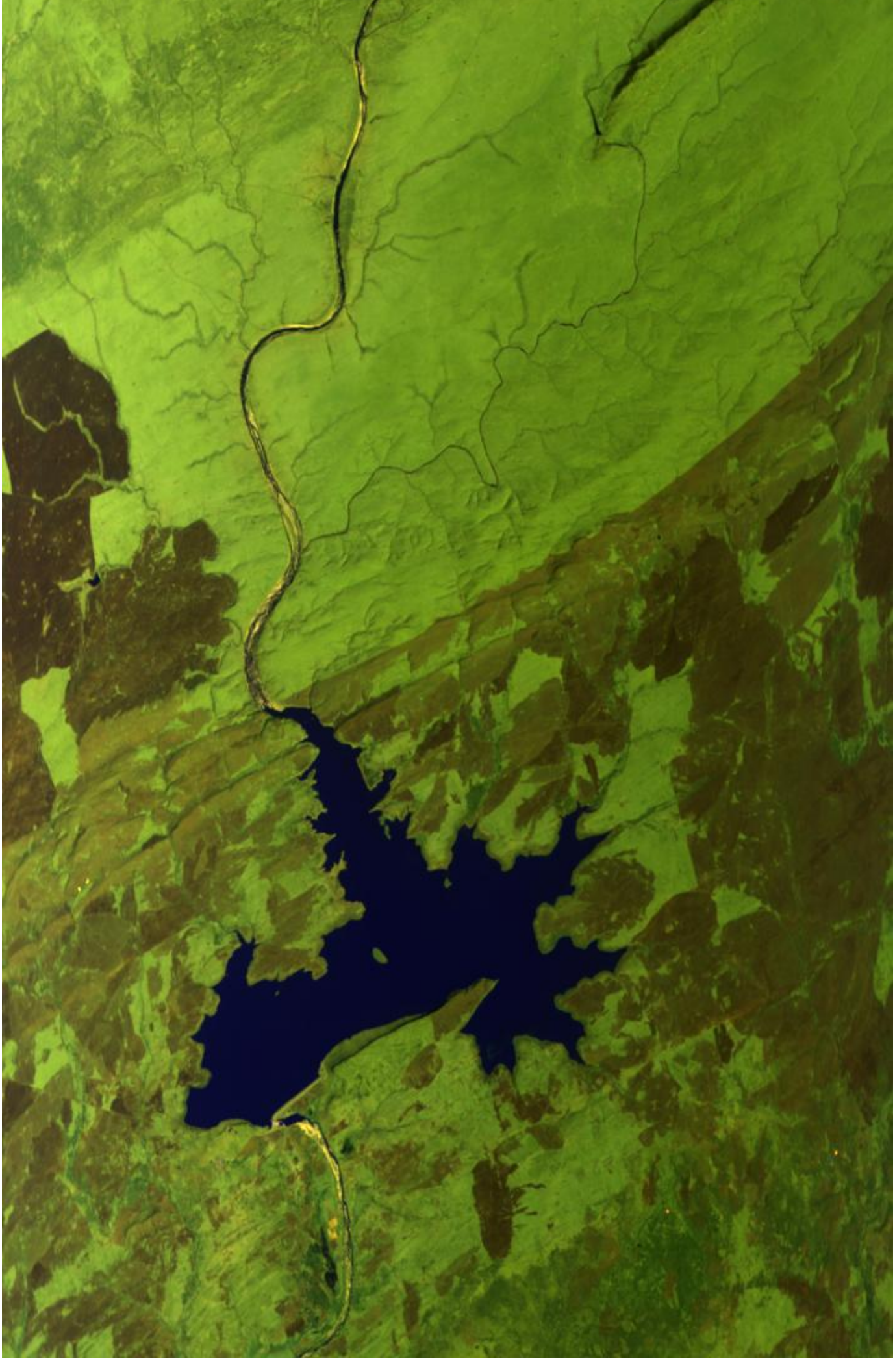
A cold front was moving away to the southeast with a ridge from the south Atlantic high south of the country, causing an onshore flow along the southern and southeastern coastal regions. A high pressure cell aloft has moved off the east coast. The weather was generally fine over South Africa with the exception of cloudy areas along the southern and southeastern coastal areas where a few light showers occurred.

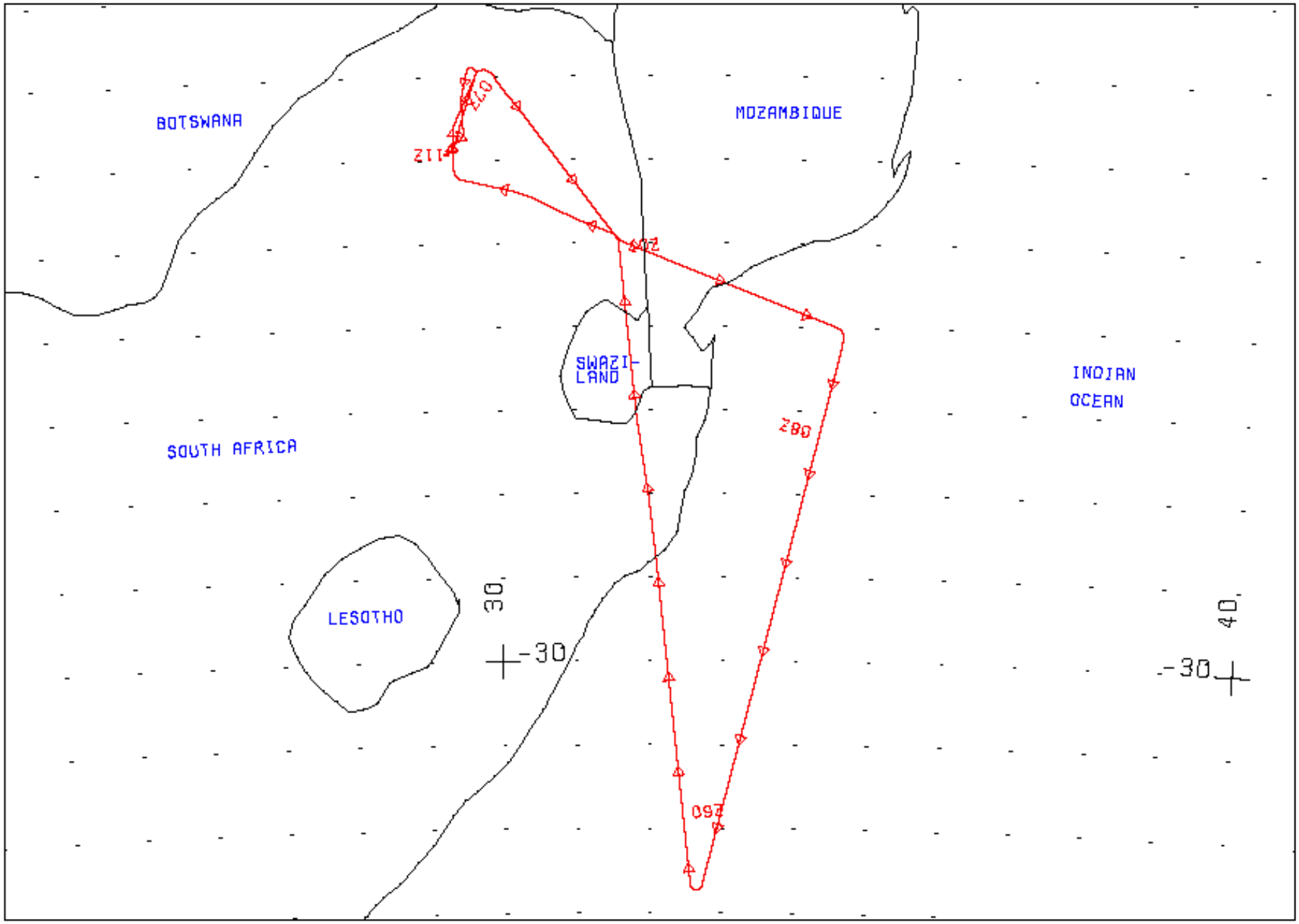


Instrument Status:

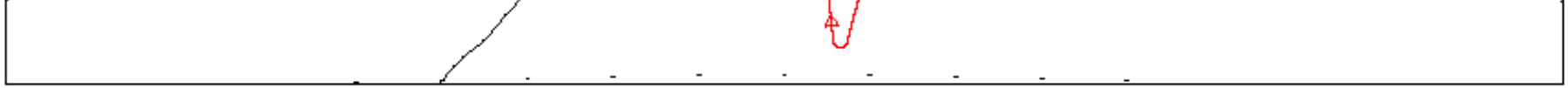
- AirMISR (Airborne Multi-angle Imaging Spectroradiometer): Not on plane; being repaired
- CLS (Cloud Lidar System): Lidar worked properly, but navigation data not recorded
- LAS (Leonardo Airborne Simulator): Failed early on climb out, but worked later in hangar on the ground
- MAS (MODIS Airborne Simulator): port 3 (3.4-5.1 µm) off plane, as dewar is undergoing nitrogen purge
- MOPITT-A (MOPITT Airborne Simulator): Worked well
- S-HIS (High-resolution Interferometer Sounder): Not installed on aircraft due to instrument problem in interferometer
- SSFR (Solar Spectral Flux Radiometer): Worked well








FLIGHT 00-147 17 AUGUST 2000 A/C 809 SAFARI



FLIGHT 00-147 17 AUGUST 2000 A/C 809 SAFARI

50 MAS Configuration for 00-147  17 Aug 2000

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 01 | 16 | 0 | 0.034415 | 0.0000 | 0.452 | 0.472 | 0.493 | 0.100 | 1981.92 |
| 02 | 02 | 16 | 0 | 0.037338 | 0.0000 | 0.534 | 0.554 | 0.577 | 0.100 | 1857.88 |
| 03 | 03 | 16 | 0 | 0.025686 | 0.0000 | 0.635 | 0.658 | 0.689 | 0.100 | 1549.55 |
| 04 | 04 | 16 | 0 | 0.030224 | 0.0000 | 0.687 | 0.708 | 0.731 | 0.100 | 1386.41 |
| 05 | 05 | 16 | 0 | 0.023061 | 0.0000 | 0.729 | 0.750 | 0.773 | 0.100 | 1260.07 |
| 06 | 06 | 16 | 0 | 0.023908 | 0.0000 | 0.810 | 0.830 | 0.855 | 0.100 | 1053.65 |
| 07 | 07 | 16 | 0 | 0.023818 | 0.0000 | 0.853 | 0.874 | 0.895 | 0.100 | 962.82 |
| 08 | 08 | 16 | 0 | 0.019081 | 0.0000 | 0.893 | 0.912 | 0.934 | 0.100 | 869.28 |
| 09 | 09 | 16 | 0 | 0.020491 | 0.0000 | 0.933 | 0.954 | 0.974 | 0.100 | 784.92 |
| 10 | 10 | 16 | 0 | 0.003309 | 0.0000 | 1.588 | 1.614 | 1.641 | 0.100 | 244.16 |
| 11 | 11 | 16 | 0 | 0.003052 | 0.0000 | 1.643 | 1.668 | 1.696 | 0.010 | 227.32 |
| 12 | 12 | 16 | 0 | 0.002796 | 0.0000 | 1.699 | 1.724 | 1.750 | 0.010 | 201.29 |
| 13 | 13 | 16 | 0 | 0.002763 | 0.0000 | 1.752 | 1.778 | 1.803 | 0.010 | 176.56 |
| 14 | 14 | 16 | 0 | 0.002849 | 0.0000 | 1.806 | 1.830 | 1.855 | 0.010 | 156.28 |
| 15 | 15 | 16 | 0 | 0.002725 | 0.0000 | 1.856 | 1.882 | 1.907 | 0.010 | 139.66 |
| 16 | 16 | 16 | 0 | 0.002592 | 0.0000 | 1.907 | 1.932 | 1.957 | 0.100 | 131.21 |
| 17 | 17 | 16 | 0 | 0.002348 | 0.0000 | 1.957 | 1.982 | 2.008 | 0.010 | 122.76 |
| 18 | 18 | 16 | 0 | 0.002299 | 0.0000 | 2.007 | 2.034 | 2.059 | 0.010 | 109.78 |
| 19 | 19 | 16 | 0 | 0.002225 | 0.0000 | 2.058 | 2.082 | 2.107 | 0.010 | 98.67 |
| 20 | 20 | 16 | 0 | 0.002265 | 0.0000 | 2.107 | 2.132 | 2.157 | 0.010 | 86.28 |
| 21 | 21 | 16 | 0 | 0.002388 | 0.0000 | 2.156 | 2.180 | 2.205 | 0.010 | 76.85 |
| 22 | 22 | 16 | 0 | 0.002602 | 0.0000 | 2.205 | 2.230 | 2.255 | 0.010 | 73.57 |
| 23 | 23 | 16 | 0 | 0.002680 | 0.0000 | 2.255 | 2.280 | 2.305 | 0.010 | 68.38 |
| 24 | 24 | 16 | 0 | 0.002531 | 0.0000 | 2.306 | 2.330 | 2.354 | 0.010 | 58.53 |
| 25 | 25 | 16 | 0 | 0.002483 | 0.0000 | 2.355 | 2.380 | 2.404 | 0.010 | 57.88 |
| 26 | 26 | 16 | 1 | 0.956000 | 0.0000 | 3.064 | 3.135 | 3.218 | 0.001 | 20.15 |
| 27 | 27 | 16 | 1 | 0.960000 | 0.0000 | 3.217 | 3.285 | 3.362 | 0.001 | 17.66 |
| 28 | 28 | 16 | 1 | 0.961000 | 0.0000 | 3.365 | 3.445 | 3.519 | 0.001 | 15.05 |
| 29 | 29 | 16 | 1 | 0.949000 | 0.0000 | 3.522 | 3.595 | 3.677 | 0.001 | 13.06 |
| 30 | 30 | 16 | 1 | 0.945000 | 0.0000 | 3.677 | 3.745 | 3.809 | 0.001 | 11.39 |
| 31 | 31 | 16 | 1 | 0.942000 | 0.0000 | 3.822 | 3.905 | 3.983 | 0.001 | 9.98 |
| 32 | 32 | 16 | 1 | 0.940000 | 0.0000 | 3.986 | 4.060 | 4.139 | 0.001 | 8.69 |
| 33 | 33 | 16 | 1 | 0.939000 | 0.0000 | 4.138 | 4.210 | 4.291 | 0.001 | 7.73 |
| 34 | 34 | 16 | 1 | 0.938000 | 0.0000 | 4.288 | 4.360 | 4.441 | 0.001 | 6.71 |
| 35 | 35 | 16 | 1 | 0.935000 | 0.0000 | 4.446 | 4.520 | 4.595 | 0.001 | 5.63 |
| 36 | 36 | 16 | 1 | 0.934000 | 0.0000 | 4.600 | 4.675 | 4.750 | 0.001 | 4.87 |
| 37 | 37 | 16 | 1 | 0.933000 | 0.0000 | 4.749 | 4.825 | 4.904 | 0.001 | 4.28 |

38 38 16 1 0.932000 0.0000  4.899  4.980  5.052 0.001    3.80
39 39 16 1 0.931000 0.0000  5.045  5.115  5.200 0.001    3.39
40 40 16 1 0.930000 0.0000  5.199  5.265  5.339 0.001    3.03
41 41 16 1 0.932000 0.0000  5.317  5.375  5.411 0.001    2.80
42 42 16 1 0.966000 0.0000  8.334  8.564  8.771 0.010    0.45
43 43 16 1 0.963000 0.0000  9.501  9.736  9.979 0.010    0.28
44 44 16 1 0.960000 0.0000 10.222 10.478 10.712 0.010    0.20
45 45 16 1 0.957000 0.0000 10.694 10.943 11.217 0.010    0.17
46 46 16 1 0.947000 0.0000 11.675 11.964 12.205 0.010    0.12
47 47 16 1 0.943000 0.0000 12.579 12.803 13.051 0.010    0.09
48 48 16 1 0.948000 0.0000 12.950 13.203 13.463 0.010    0.08
49 49 16 1 0.939000 0.0000 13.431 13.733 14.031 0.010    0.07
50 50 16 1 0.944000 0.0000 13.958 14.213 14.416 0.010    0.06
| | | ||      |      |     |     |    |       |
| | | ||      |      |     |     |    |       =(!)
| | | ||      |      |     |     |    =-Scale Factor
| | | ||      |      |     |     =- Right 50% spectral response
| | | ||      |      |     =-Peak 100% spectral response (microns)
| | | ||      |      =-Left 50% spectral response (microns)
| | | ||      =-Calibration intercept (only used for visible bands)
| | | |=--------Calibration slope (only used for visible bands 1-25)
| | | |         Blackbody emmissivity (only used for IR bands 26-50)
| | |  =----------0 => visible band, 1 => thermal infrared band"
| |  =-------------Number of bits in this channel (8 or 10)
|  =----------------Spectral band assigned to this channel
=------------------------ Channel number
(!) Sensor weighted solar spectral irradiance (Watts/meter2/micron)
at mean Earth-Sun distance

NOTE: Factor in column 10 is used to scale radiances in
     calibrated data by the following method:
     value_stored = int( radiance / factor ) for each channel
---
---
Title                MODIS Airborne Simulator (MAS) Level-1B Data
Sensor_ID_Code       M5 105 MAS50
ExperimentName       SAFARI 2000
AircraftPlatform     NASA ER-2 (809)
NavFormatCode        Format (A-1)

LocationCode Inertial (INU)
AltitudeCode Inertial (INU)
CalibrationVersion Version 1.0 Calibration
CalibrationName SAFARI_Jul19-Oct19
SRF_Dataset /rarray/calibrat/mas/srf/Jul_00/
SRF_FTP ftp://asapdata/mas/srf/Jul_00/
NavDataSource ER2 navigation recorder
NavDataPath /nav/2000/er2/00-147
TbackBand 45, 47, 31, 273.0
GranuleVersion 1.0.0
MetadataVersion 1.0.0

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Conversion from counts to radiance in VIS and NIR channels is
rad = (count - (cbb_avg)) * slope

"where,"
rad = radiance
cbb_avg = cold black body counts (running average)
slope = from column 7 in above table
count = count value

**********
IR Emissivity Correction (for MAS-50)
From Chris Moeller (UWisc)
**********
This is done in 2 steps:
1. Get the (TBACK Band) scan head count and convert it to a brightness temperature
2. Use the scan head temperature and the cold and warm black body counts/temperatures for computing the corrected slope and intercept for all IR bands.

(note: set to 1.0 for channels 1-25)
MAS BB Emissivity Coefficients
Hemispherical Reflectance (JPL) 11/00
convolved with MAS SRF (ARC) 10/00
Red spot Paint

Values in form Wavelength, Emissivity
**********
For Bands 26 thru 50:
0.95600, 0.96000, 0.96100, 0.94900, 0.94500,
0.94200, 0.94000, 0.93900, 0.93800, 0.93500,
0.93400, 0.93300, 0.93200, 0.93100, 0.93000,
0.93200, 0.96600, 0.96300, 0.96000, 0.95700,
0.94700, 0.94300, 0.94800, 0.93900, 0.94400,
**********

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Config.asc creation date = 13-June-2001
Config.asc creation date = 13-June-2001
Config.asc creation date = 13-June-2001

MODIS AIRBORNE SIMULATOR (MAS) FLIGHT LINE INFORMATION FOR 17 Aug 2000

NASA FLIGHT NUMBER 00-147

| | START OF FLIGHT LINE | | | | | END OF FLIGHT LINE | | | | | FLIGHT DATA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LINE | TIME HH:MM:SS | LAT DEG | LON DEG | SOLAR ZEN | SOLAR AZIM | TIME HH:MM:SS | LAT DEG | LON DEG | SOLAR ZEN | SOLAR AZIM | SCAN LINES | HEAD DEG | ALT M (GPS) |
| 1 | 07:19:35 | -24.651 | 31.338 | 54.3 | 50.1 | 07:22:47 | -24.936 | 31.574 | 53.7 | 49.1 | 1195 | 143.4 | 20221 |
| 2 | 07:23:21 | -24.976 | 31.628 | 53.6 | 48.9 | 07:48:29 | -25.999 | 34.499 | 48.6 | 39.6 | 9380 | 114.8 | 20205 |
| 3 | 07:49:54 | -26.126 | 34.580 | 48.4 | 39.1 | 08:16:41 | -29.010 | 33.811 | 47.8 | 31.0 | 9999 | 189.1 | 20227 |
| 4 | 08:16:41 | -29.011 | 33.811 | 47.8 | 31.0 | 08:43:28 | -31.840 | 32.997 | 48.0 | 22.8 | 9999 | 195.7 | 20307 |
| 5 | 08:43:28 | -31.840 | 32.997 | 48.0 | 22.8 | 08:51:19 | -32.674 | 32.747 | 48.2 | 20.4 | 2932 | 196.2 | 20270 |
| 6 | 08:53:09 | -32.669 | 32.588 | 48.1 | 20.0 | 09:19:56 | -29.617 | 32.201 | 43.7 | 12.5 | 9999 | 354.1 | 20289 |
| 7 | 09:19:57 | -29.617 | 32.201 | 43.7 | 12.5 | 09:46:44 | -26.601 | 31.781 | 39.9 | 3.9 | 9999 | 355.0 | 20492 |
| 8 | 09:46:44 | -26.601 | 31.781 | 39.9 | 3.9 | 10:01:19 | -24.974 | 31.601 | 38.2 | 358.6 | 5442 | 356.3 | 20579 |
| 9 | 10:02:10 | -24.899 | 31.545 | 38.1 | 358.4 | 10:19:23 | -24.230 | 29.551 | 37.6 | 354.6 | 6426 | 289.8 | 20616 |
| 10 | 10:20:44 | -24.118 | 29.458 | 37.5 | 354.2 | 10:25:01 | -23.634 | 29.458 | 37.1 | 352.5 | 1598 | 0.7 | 20617 |

NUMBER OF FILES FOR THIS FLIGHT = 10

TOTAL NUMBER OF SCAN LINES = 66969
DATE THESE FILES WERE PROCESSED = 01-Oct-2002
DATE THIS LIST WAS CREATED = Wed Oct 2 09:44:46 PDT 2002
GRANULE VERSION = 2

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GLOBAL ATTRIBUTES

| Attribute Name | Description |
|---|---|
| CreationDate | 01-Oct-2002 17:00:03 |
| AircraftPlatform | NASA ER-2 (809) |
| NavFormatCode | Format (A-1) |
| LocationCode | Inertial (INU) |
| AltitudeCode | Inertial (INU) |
| NavDataSource | ER2 navigation recorder |
| NavDataPath | /nav/2000/er2/00-147 |
| CalibrationName | SAFARI_Jul19-Oct19 |
| Reference | NCSA HDF Reference Manual, Version 4.1r4, 2000 |
| title | MODIS Airborne Simulator (MAS) Level-1B Data |
| ExperimentName | SAFARI 2000 |
| FlightNumber | 00-147 |
| FlightDate | 17 Aug 2000 |
| SiteLineRun | void |
| GeographicArea | S.A, Mozambique |
| SRF_FTP | ftp://asapdata/mas/srf/Jul_00/ |
| SRF_dataset | /rarray/calibrat/mas/srf/Jul_00/ |
| FlightLineNumber | 1 |
| TotalFlightLines | 10 |
| DataUsersGuideSource | http://ltpww.gsfc.nasa.gov/MAS/ |
| SoftwareVersion | Level-1b Version 10.1.1 UR |
| CalibrationVersion | Version 1.0 Calibration |
| data_set | MAS SAFARI 2000 |
| day_night_flag | D |
| granule_version | 2 |

metadata_version 2.0.0
data_quality Good
Other_Aircraft_Sensors AirMISR, CLS, MOPPIT-A, Leonardo, Dual RC-10
Principal_Investigator King
lat_UL -24.75014
lon_UL 31.19071
lat_UR -24.55430
lon_UR 31.48649
lat_LL -25.03811
lon_LL 31.42812
lat_LR -24.83746
lon_LR 31.72128
begin_date 20000816 071936
end_date 20000816 072248
RunTime 84,080 ms, or 70 ms/scanline
CompletionDate 01-Oct-2002 17:02:11
producer_granule_id MASL1B_00147_01_20000816_0719_0722_V02.hdf

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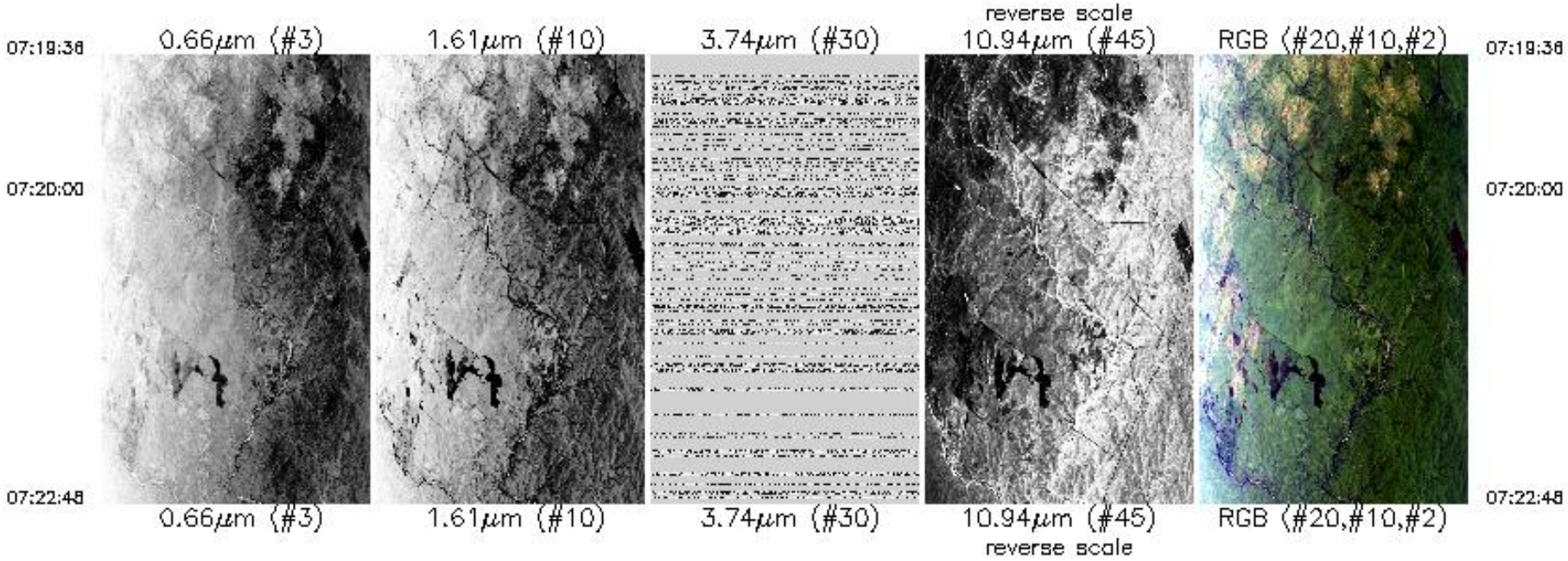
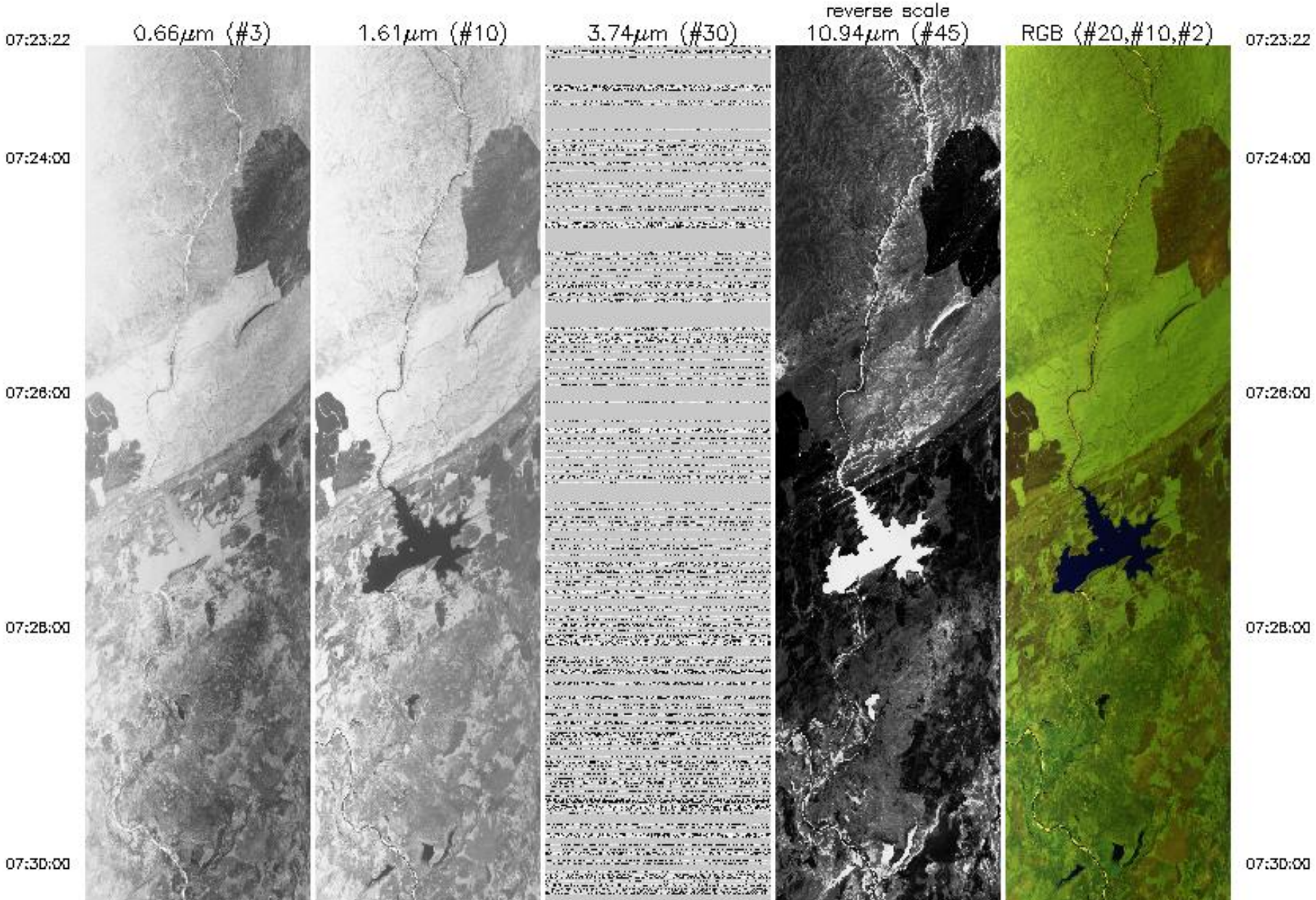
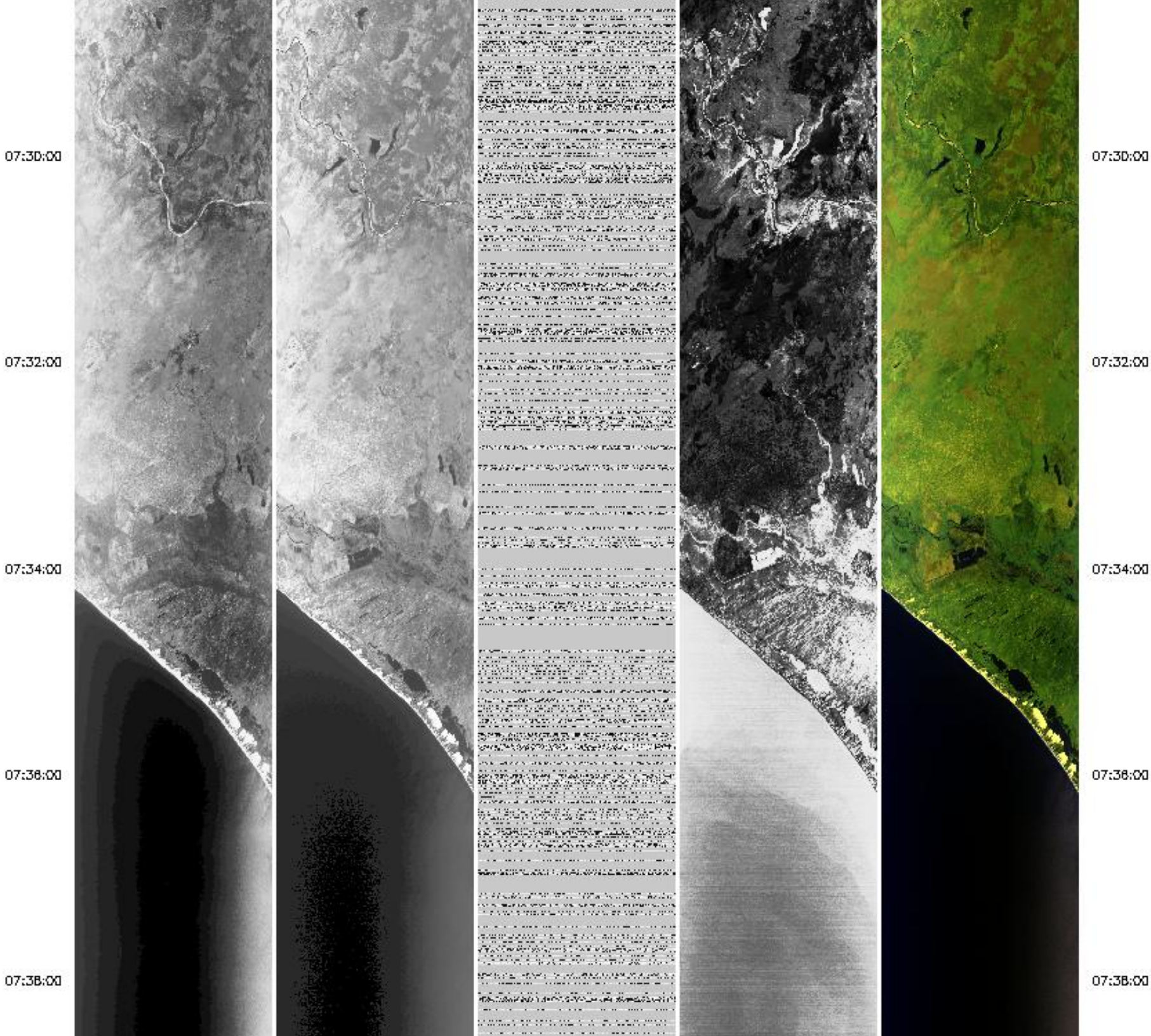
# MODIS Airborne Simulator Browse Imagery
## SAFARI 2000 Campaign – 17 Aug 2000
## S.A, Mozambique
## Flight #00–147 Track #1




Upper Left Lat, Lon = −24.8°, 31.2°
Lower Right Lat, Lon = −24.8°, 31.7°
Aircraft Heading = 143.9°
Solar Zenith = 54.4°
GPS Altitude = 20225. m (MSL)

MODIS Airborne Simulator Browse Imagery
SAFARI 2000 Campaign – 17 Aug 2000
Indian Ocean
Flight #00–147 Track #2




07:30:00
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07:34:00
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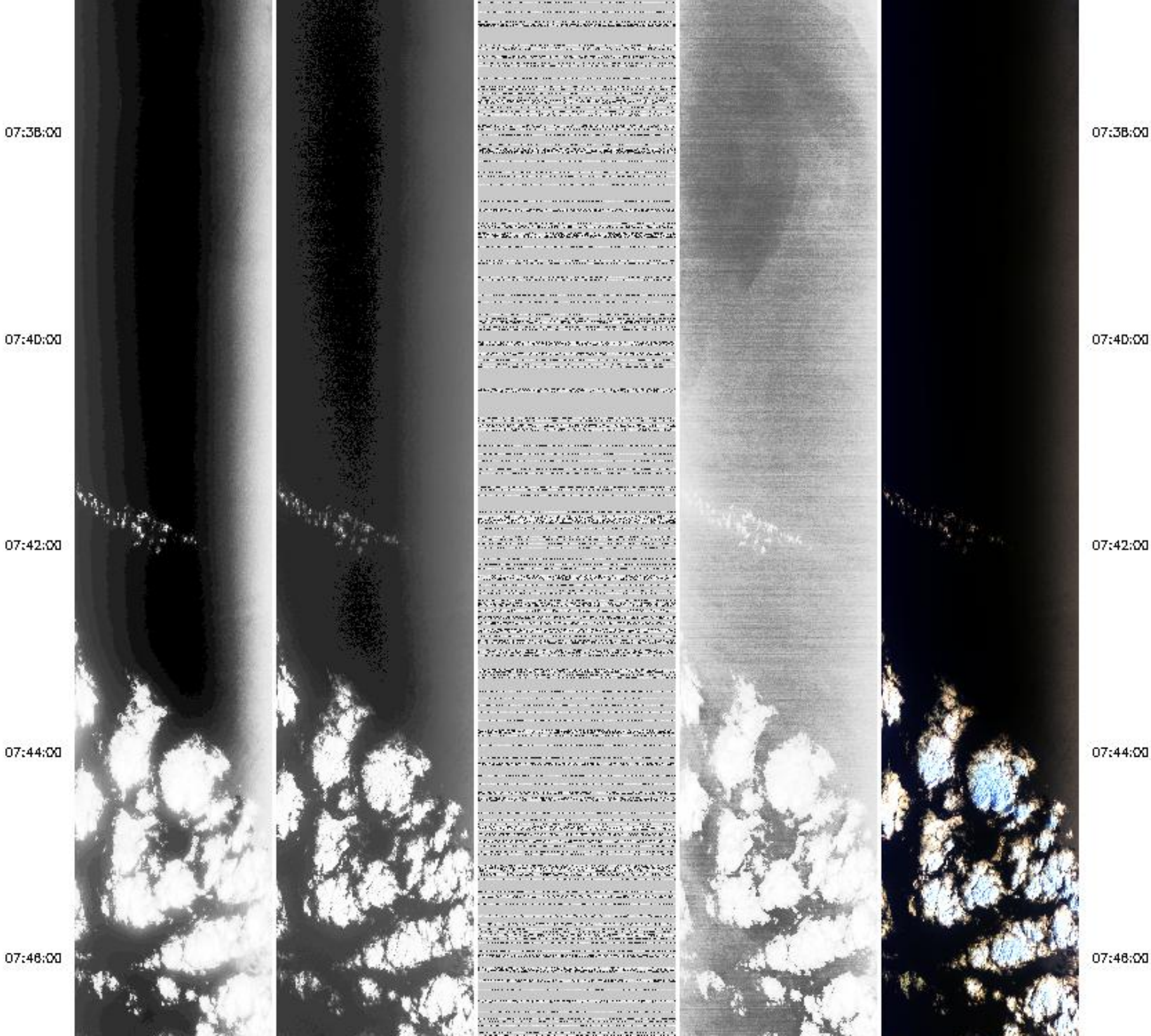
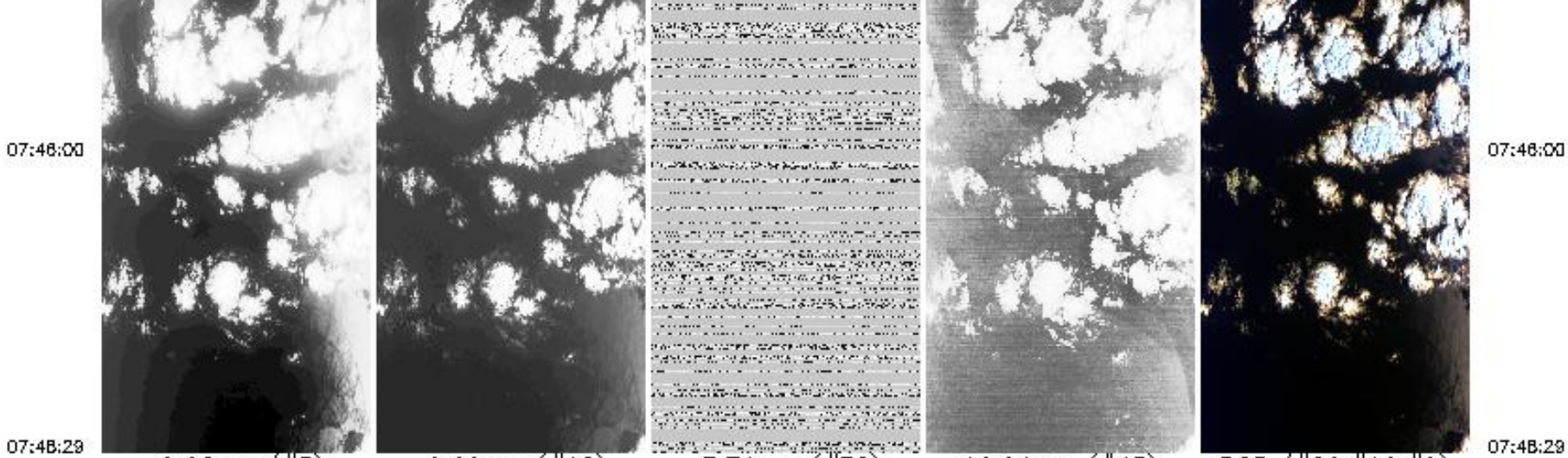
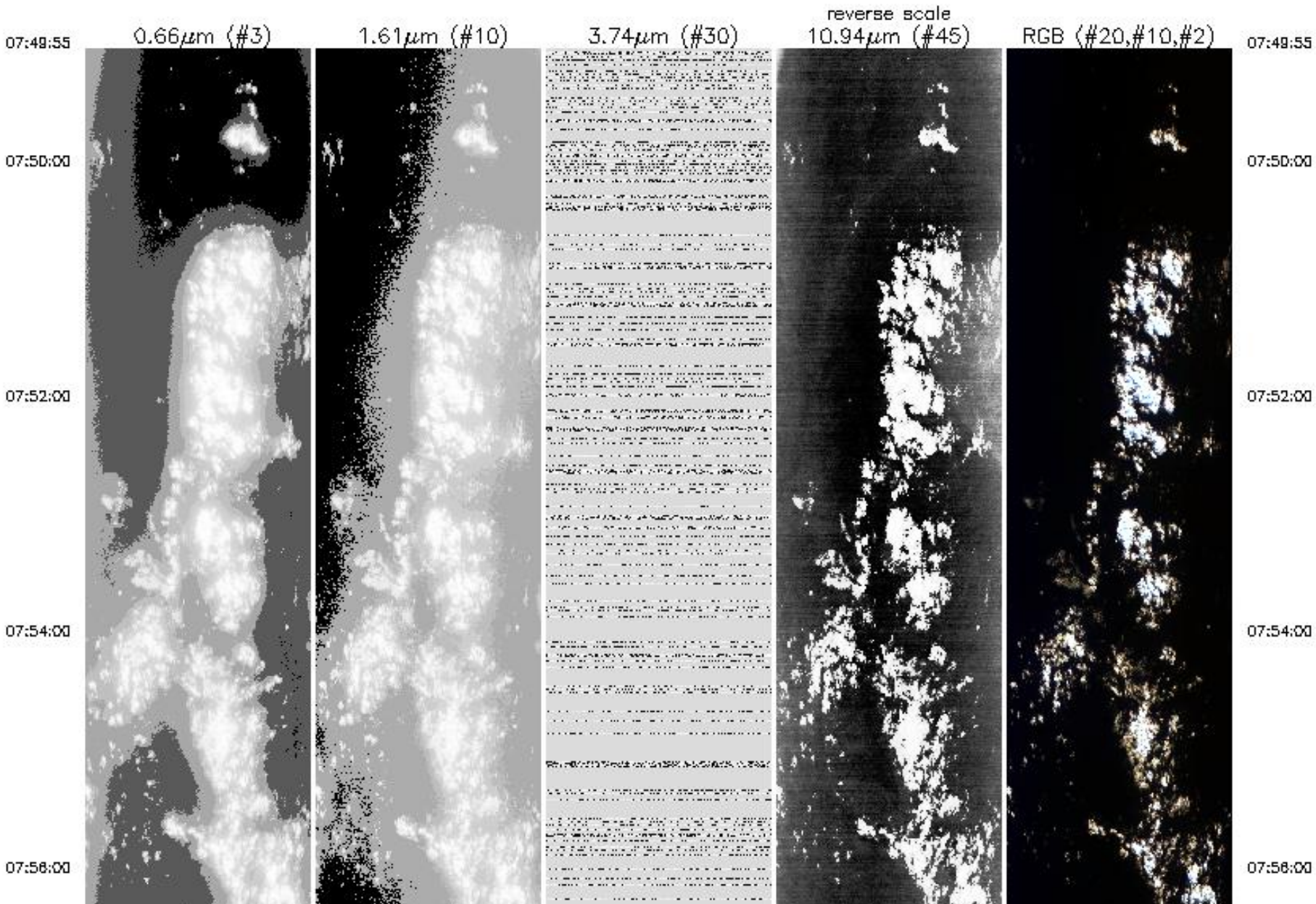
07:38:00

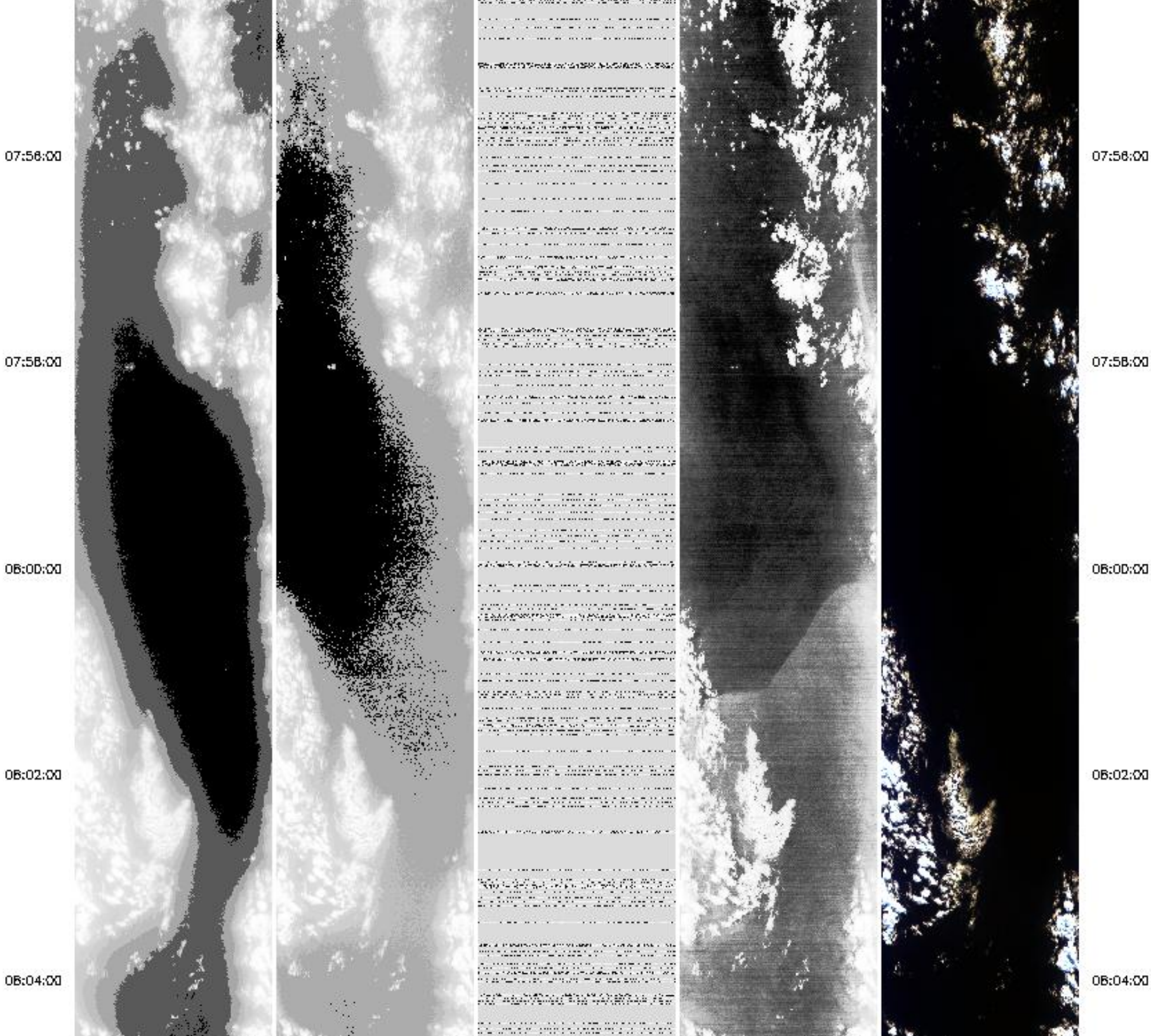

07:38:00
07:40:00
07:42:00
07:44:00
07:46:00
07:38:00
07:40:00
07:42:00
07:44:00
07:46:00




Upper Left Lat, Lon = −25.1°, 31.5°
Lower Right Lat, Lon = −25.8°, 34.6°
Aircraft Heading = 117.5°
Solar Zenith = 53.8°
GPS Altitude = 20262. m (MSL)

MODIS Airborne Simulator Browse Imagery
SAFARI 2000 Campaign – 17 Aug 2000
Indian Ocean
Flight #00–147 Track #3




07:56:00
07:58:00
08:00:00
08:02:00
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07:58:00
08:00:00
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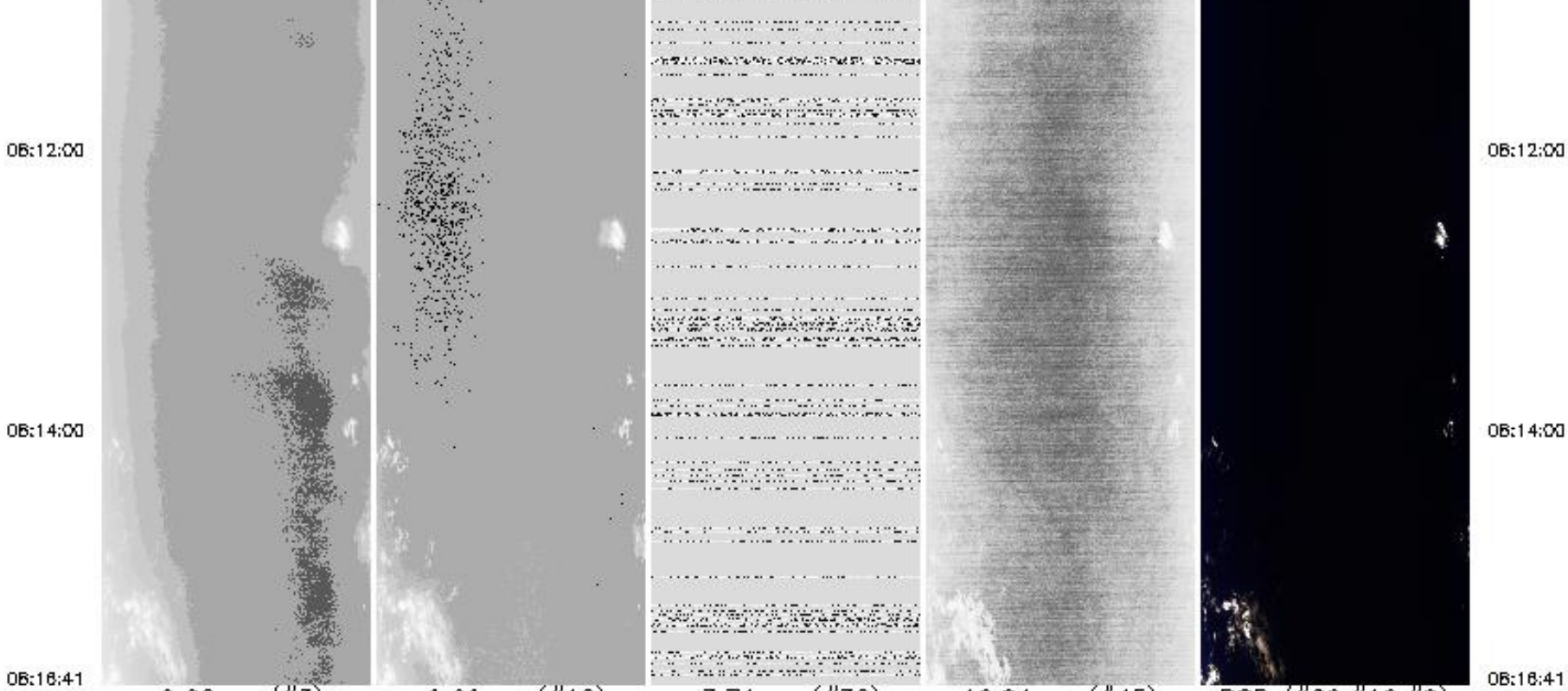
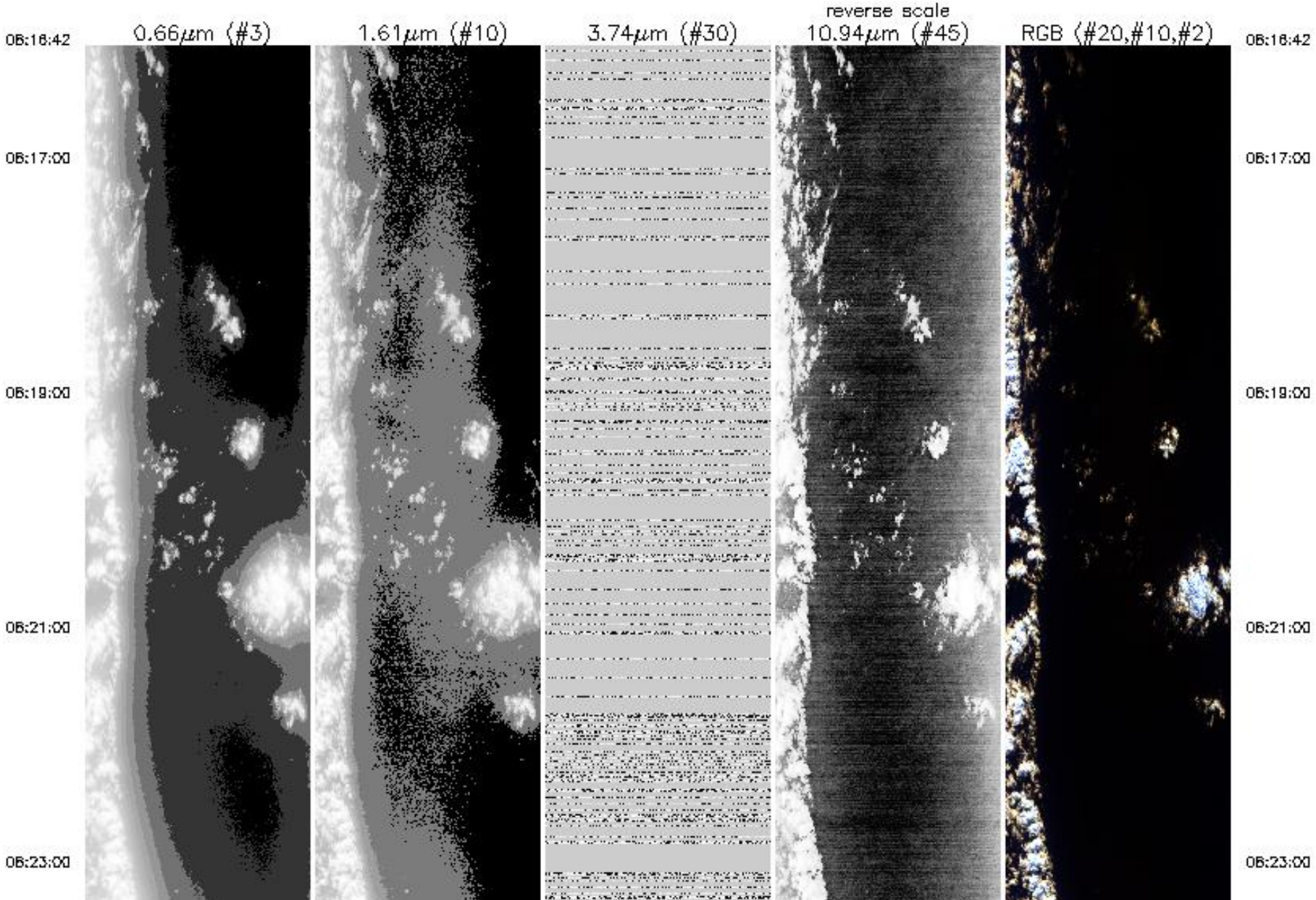
08:04:00

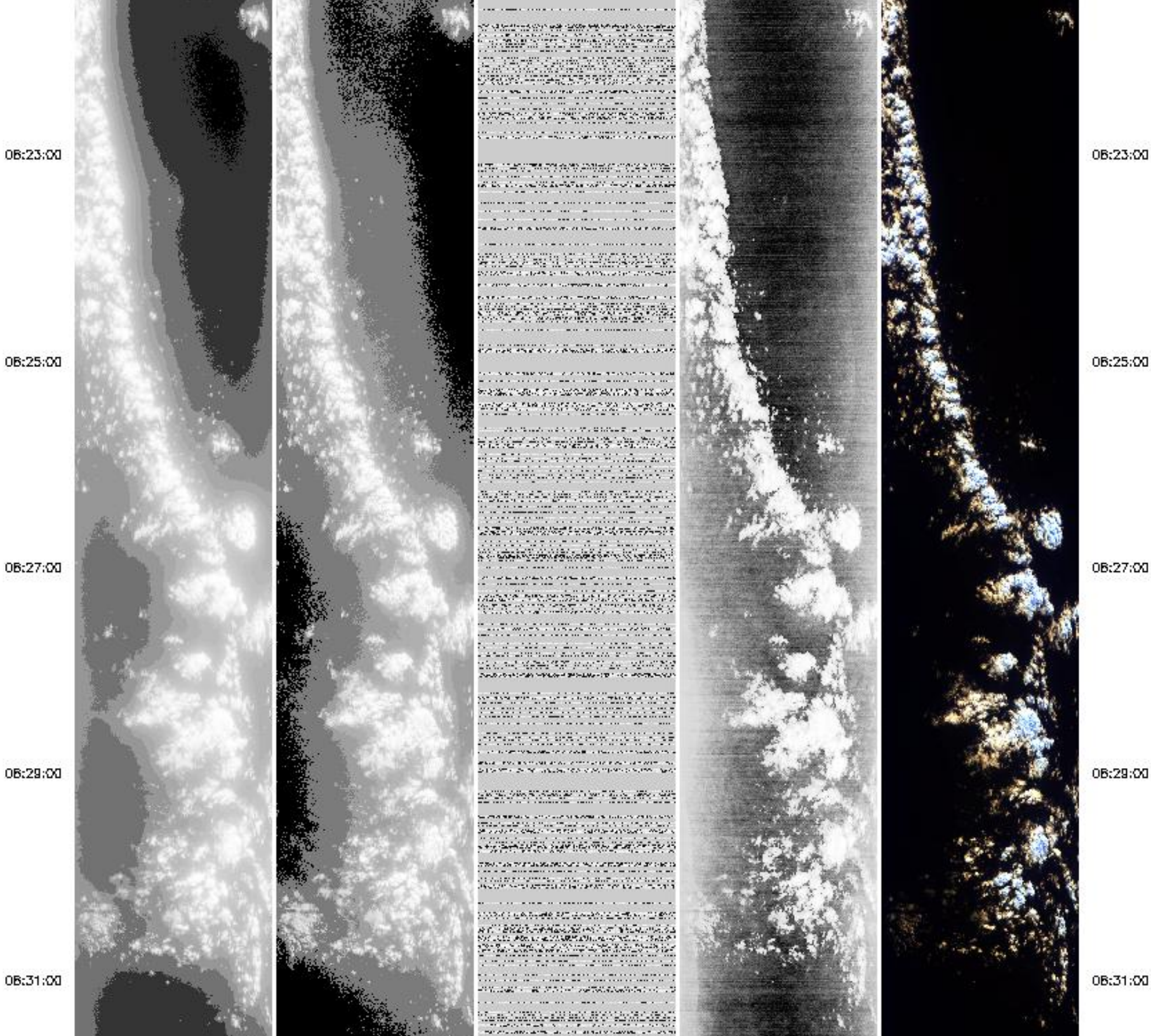

06:04:00
06:06:00
06:08:00
06:10:00
06:12:00
06:04:00
06:06:00
06:08:00
06:10:00
06:12:00




Upper Left Lat, Lon = −26.1°, 34.4°
Lower Right Lat, Lon = −29.1°, 34.0°
Aircraft Heading = 182.8°
Solar Zenith = 48.5°
GPS Altitude = 20196. m (MSL)

MODIS Airborne Simulator Browse Imagery
SAFARI 2000 Campaign – 17 Aug 2000
Indian Ocean
Flight #00–147 Track #4

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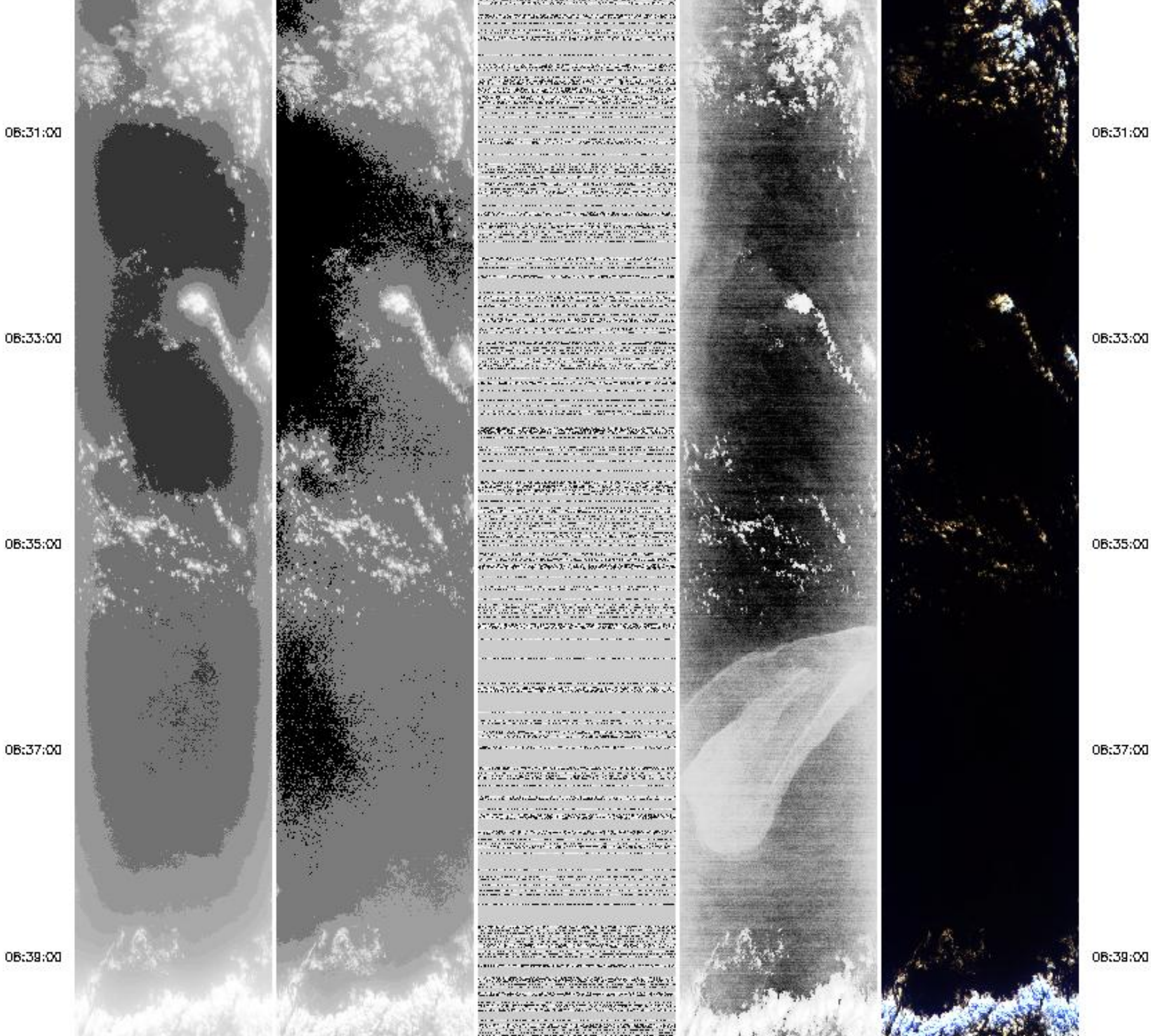
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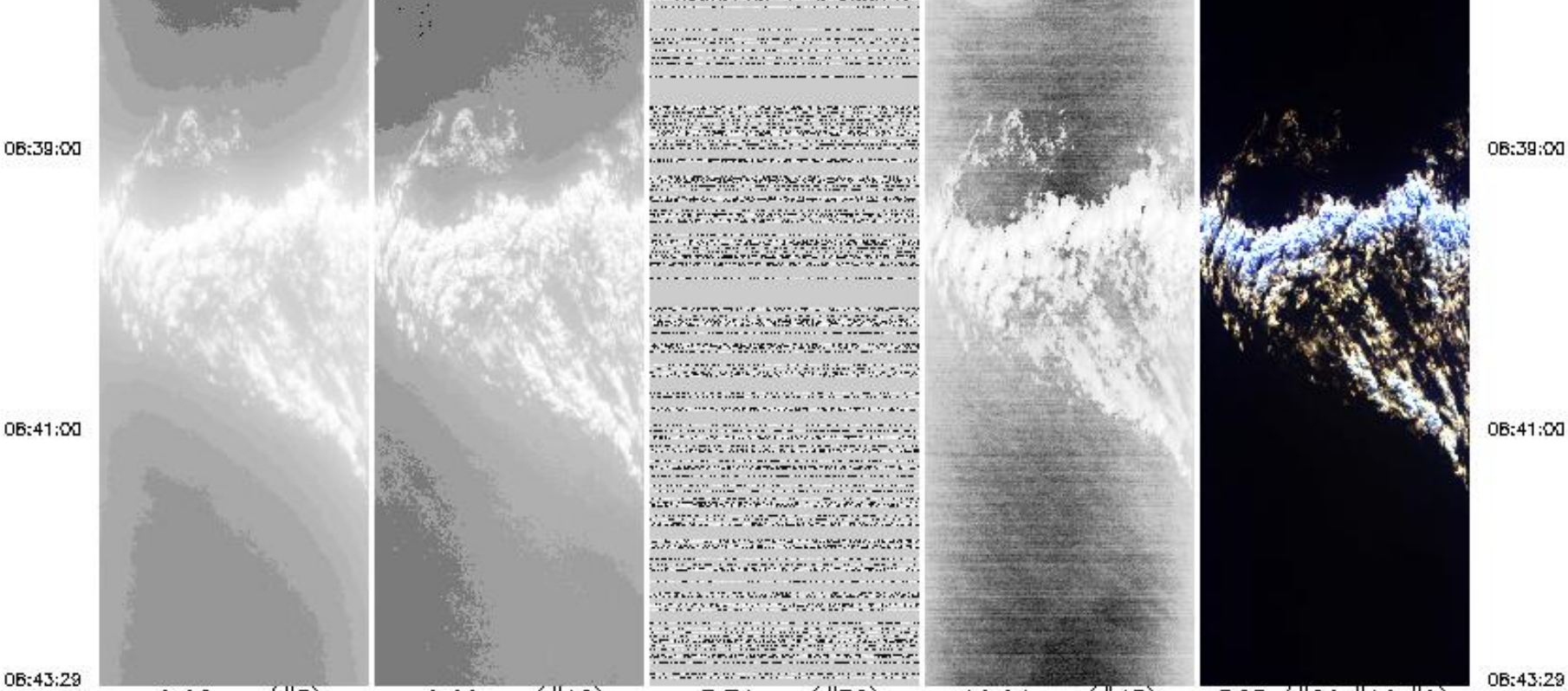
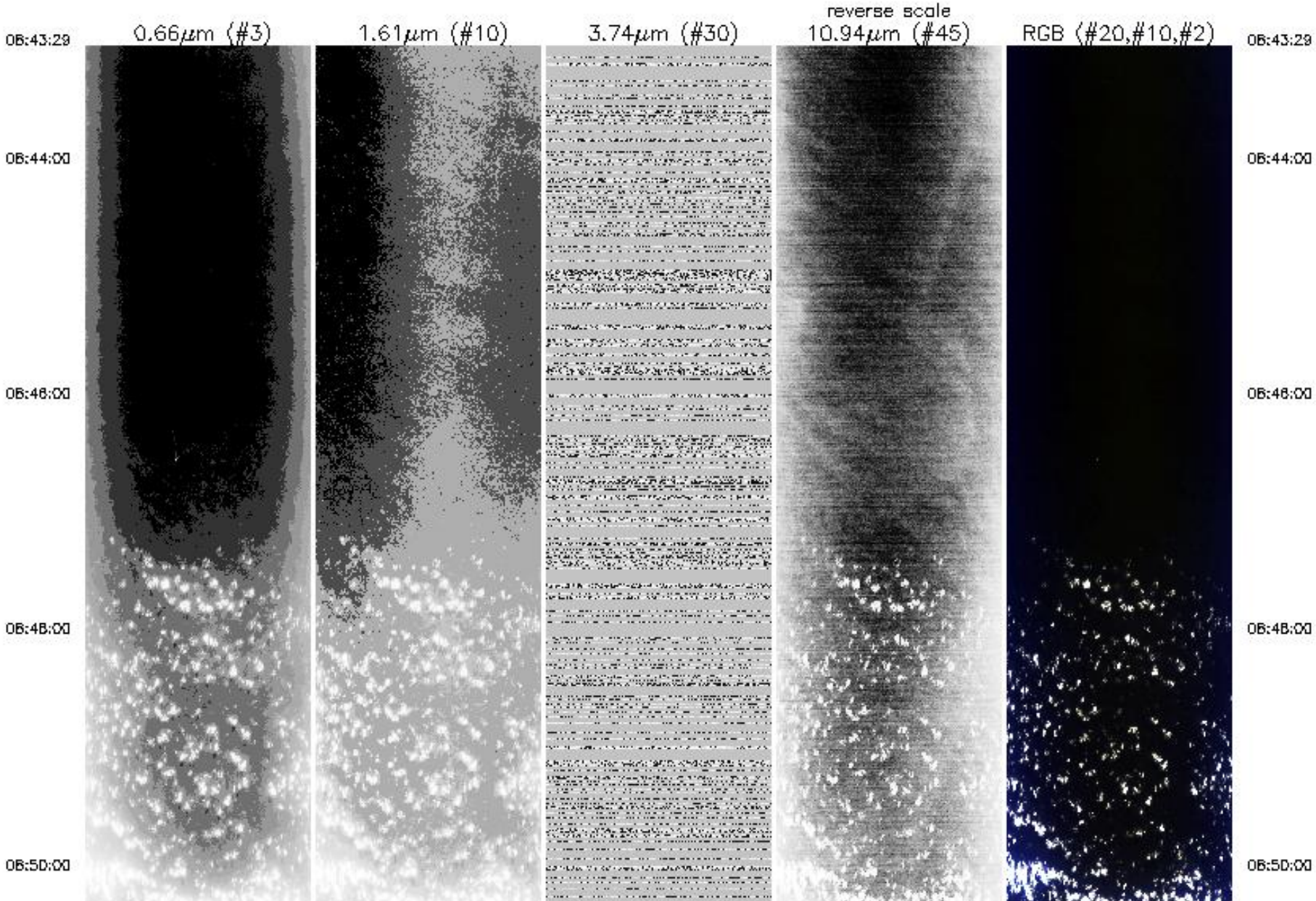


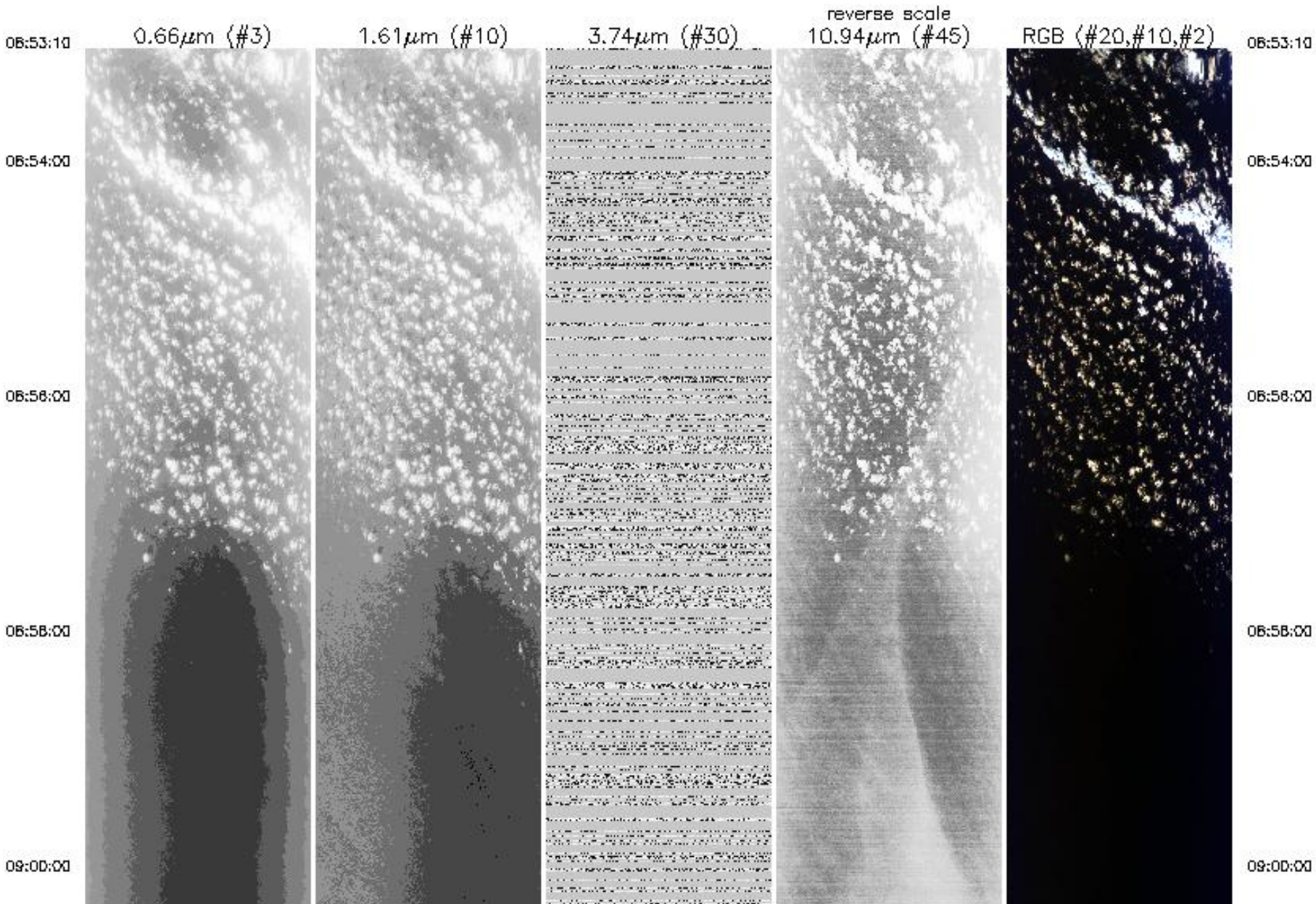

Upper Left Lat, Lon = −29.0°, 33.6°
Lower Right Lat, Lon = −31.9°, 33.2°
Aircraft Heading = 195.3°
Solar Zenith = 47.8°
GPS Altitude = 20302. m (MSL)

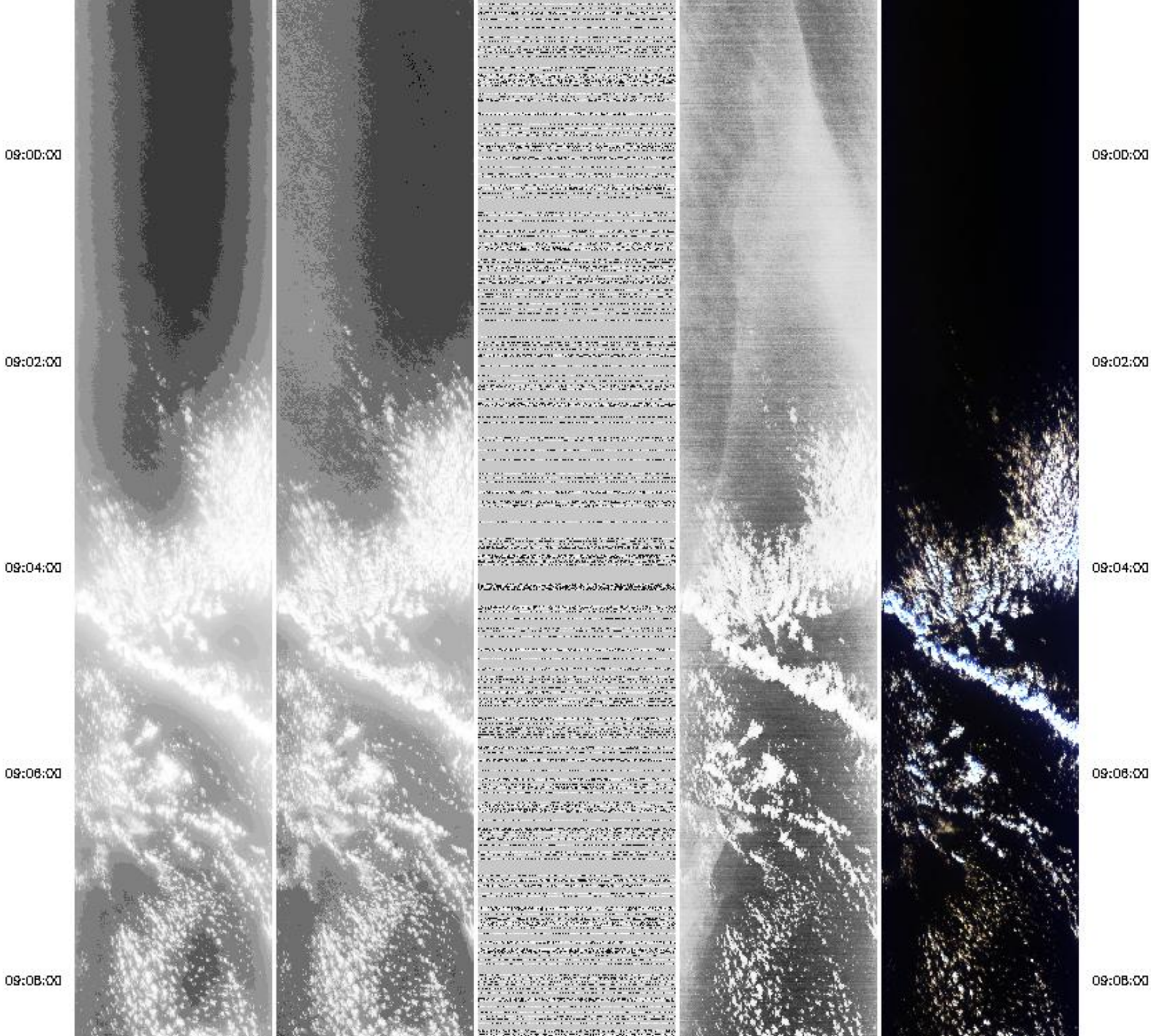
MODIS Airborne Simulator Browse Imagery
SAFARI 2000 Campaign – 17 Aug 2000
Indian Ocean
Flight #00–147 Track #5




Upper Left Lat, Lon = −31.8°, 32.8°
Lower Right Lat, Lon = −32.7°, 32.9°
Aircraft Heading = 196.2°
Solar Zenith = 48.0°
GPS Altitude = 20277. m (MSL)

MODIS Airborne Simulator Browse Imagery
SAFARI 2000 Campaign – 17 Aug 2000
S.A. Indian Ocean
Flight #00–147 Track #6

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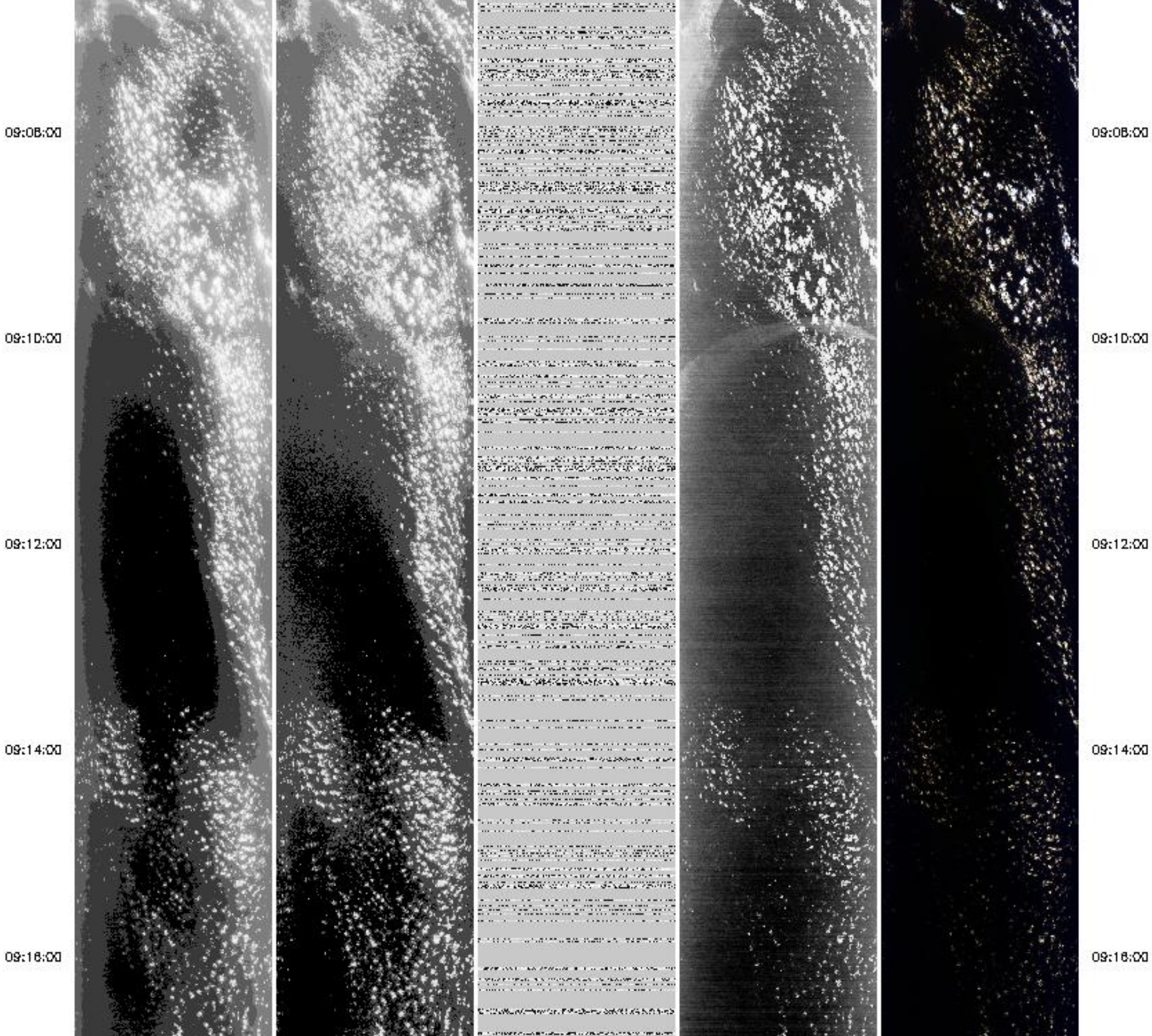
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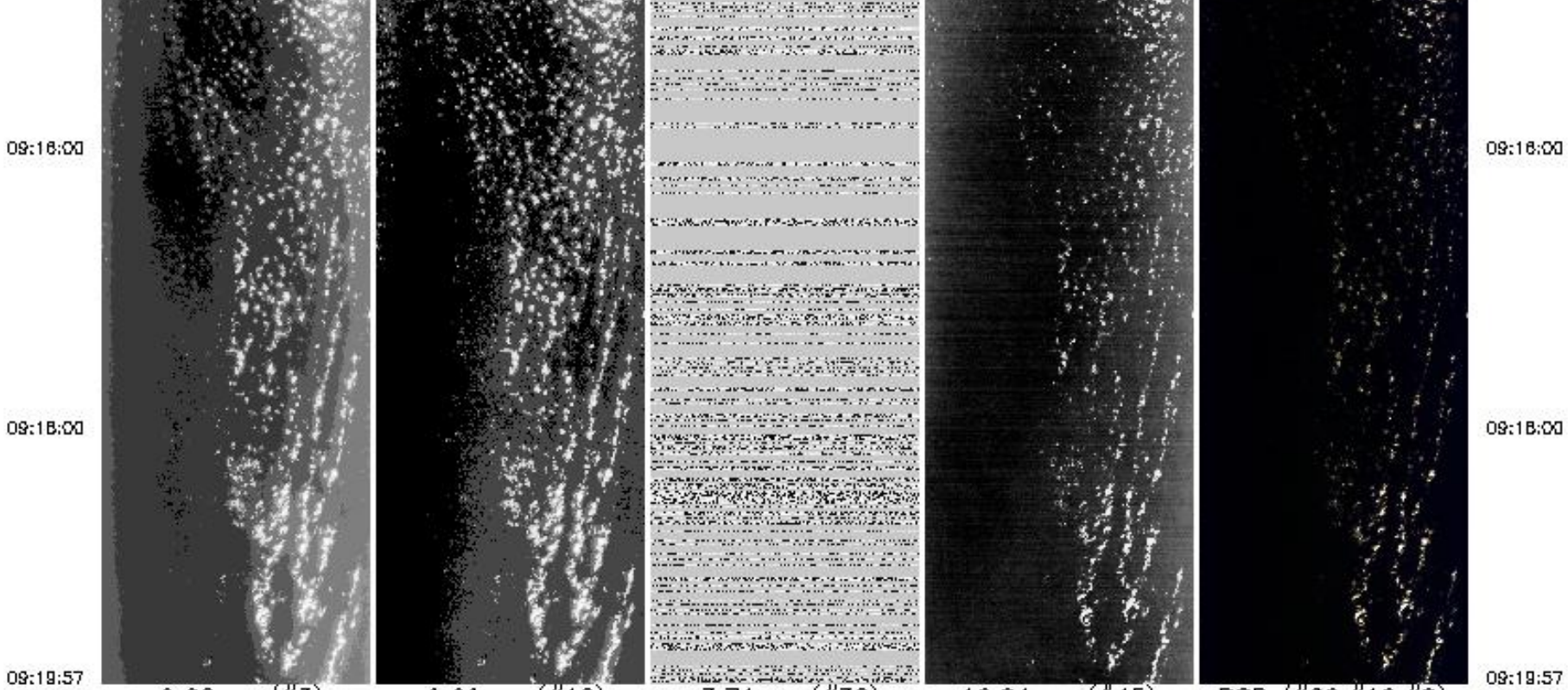
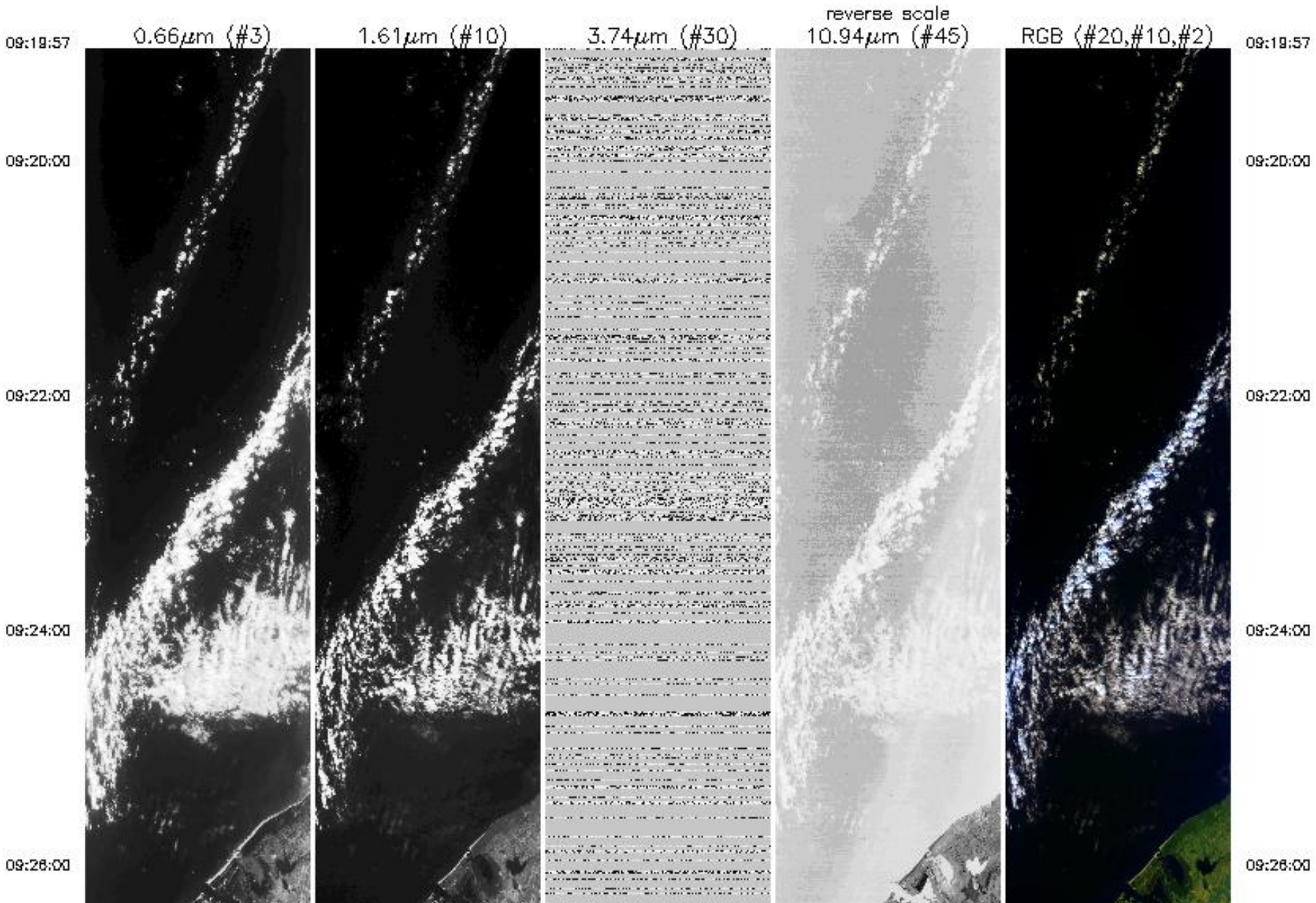
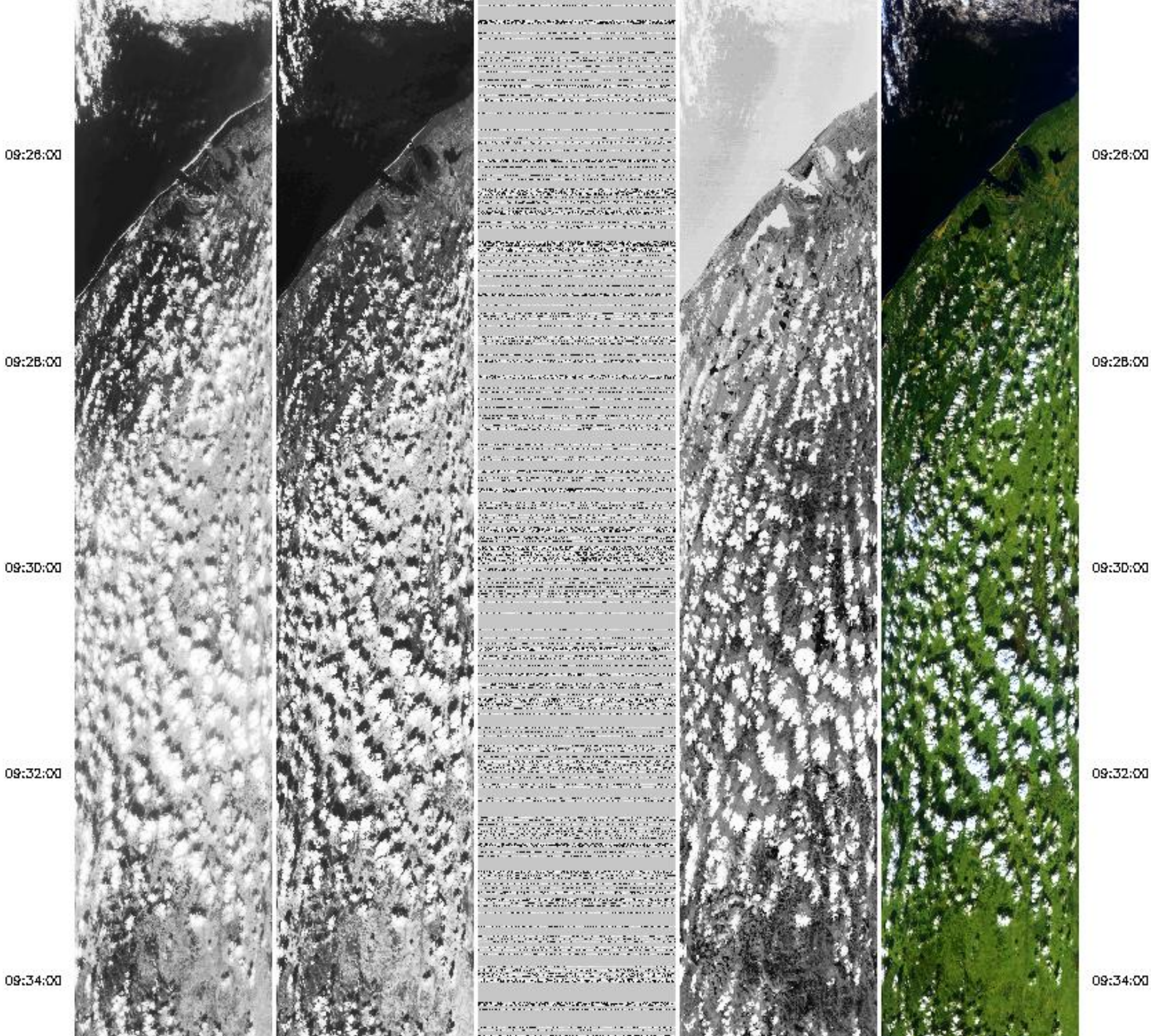



Upper Left Lat, Lon = −32.7°, 32.8°
Lower Right Lat, Lon = −29.6°, 32.0°
Aircraft Heading = 354.5°
Solar Zenith = 48.1°
GPS Altitude = 20302. m (MSL)

MODIS Airborne Simulator Browse Imagery
SAFARI 2000 Campaign – 17 Aug 2000
S.A, Swaziland
Flight #00–147 Track #7

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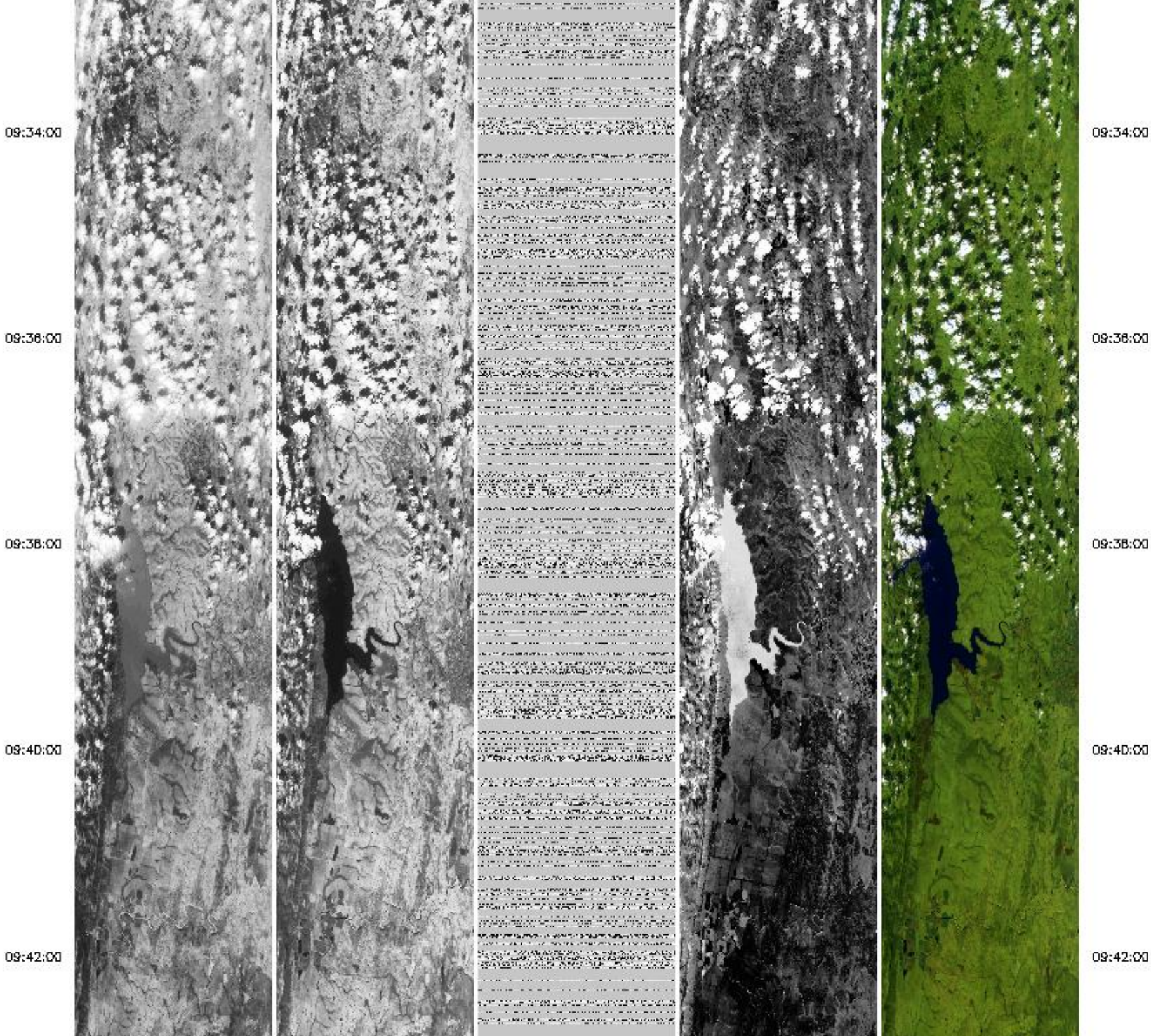
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09:42:00


Upper Left Lat, Lon = −29.6°, 32.4°

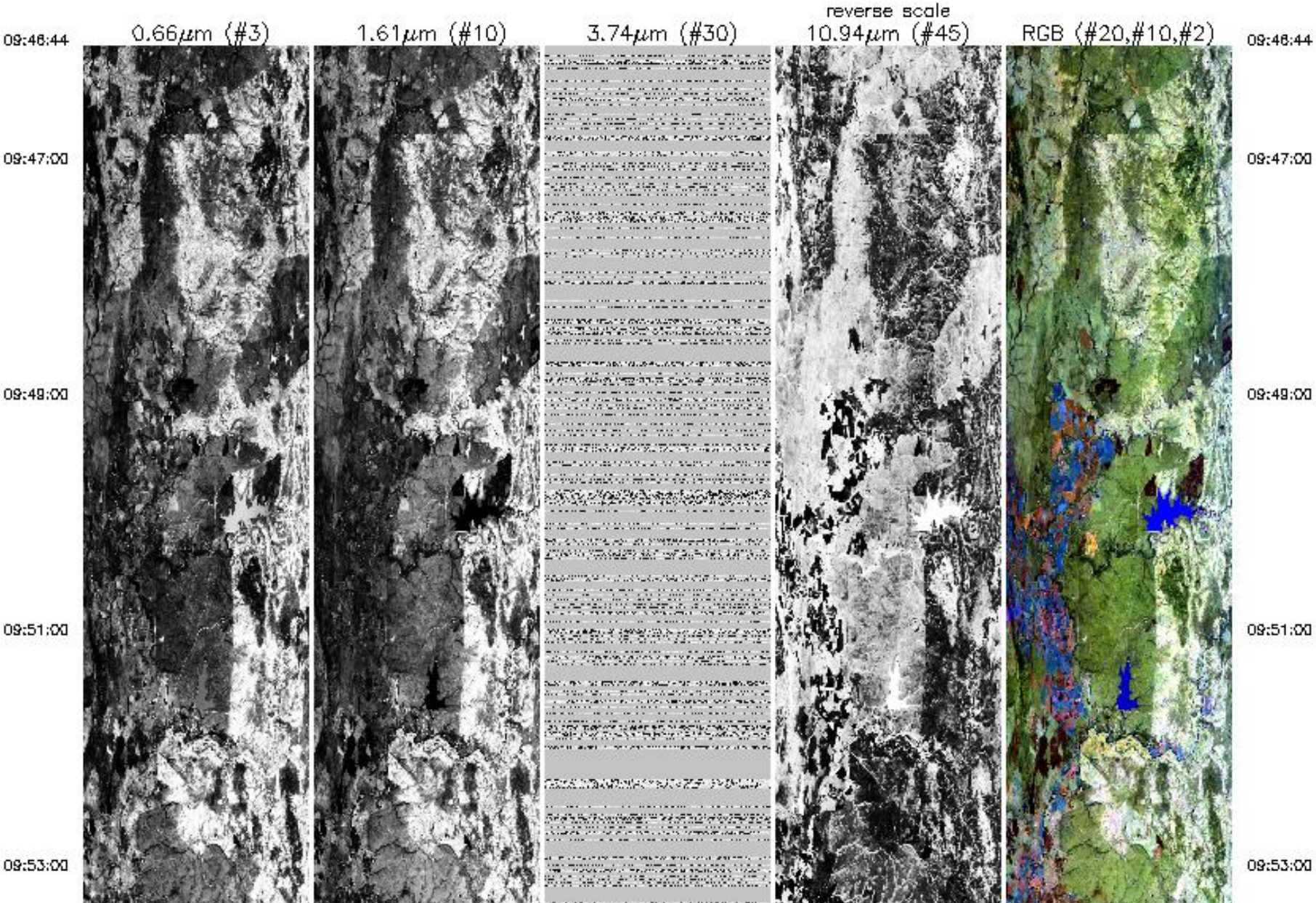
Lower Right Lat, Lon = −26.6°, 31.6°

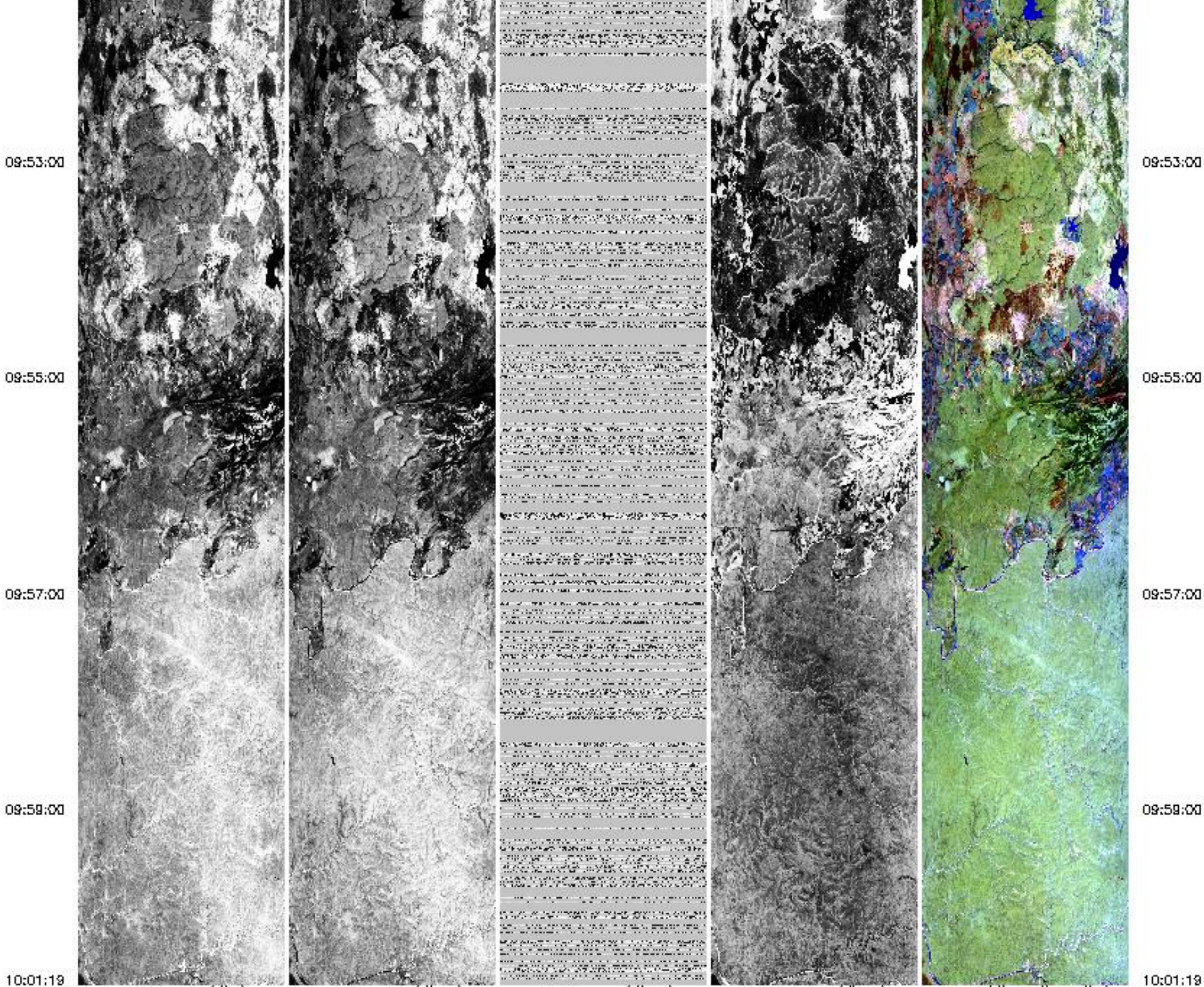
Aircraft Heading = 353.7°

Solar Zenith = 43.6°

GPS Altitude = 20486. m (MSL)

MODIS Airborne Simulator Browse Imagery
SAFARI 2000 Campaign – 17 Aug 2000
South Africa
Flight #00–147 Track #8





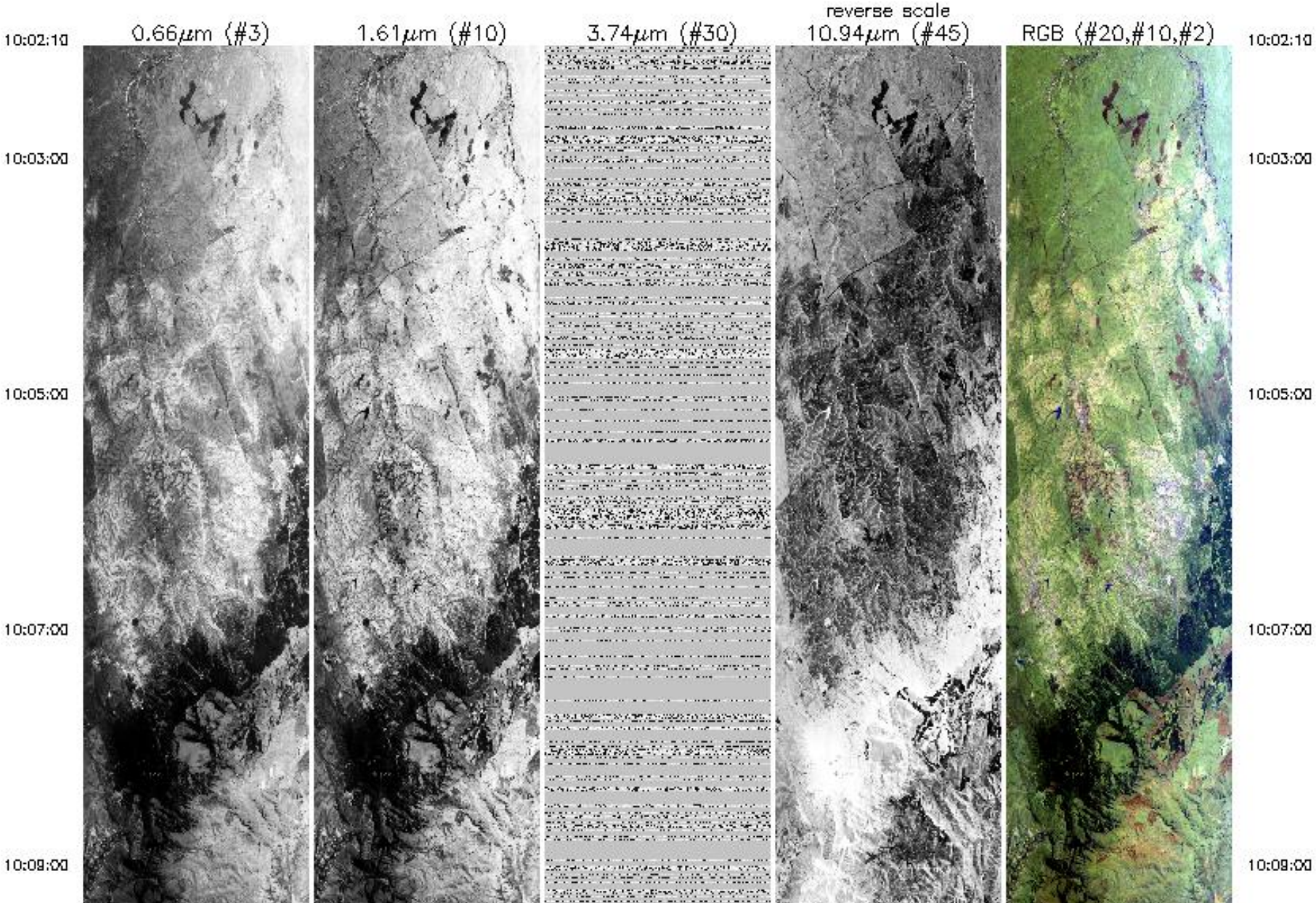

Upper Left Lat, Lon = −26.6°, 32.0°

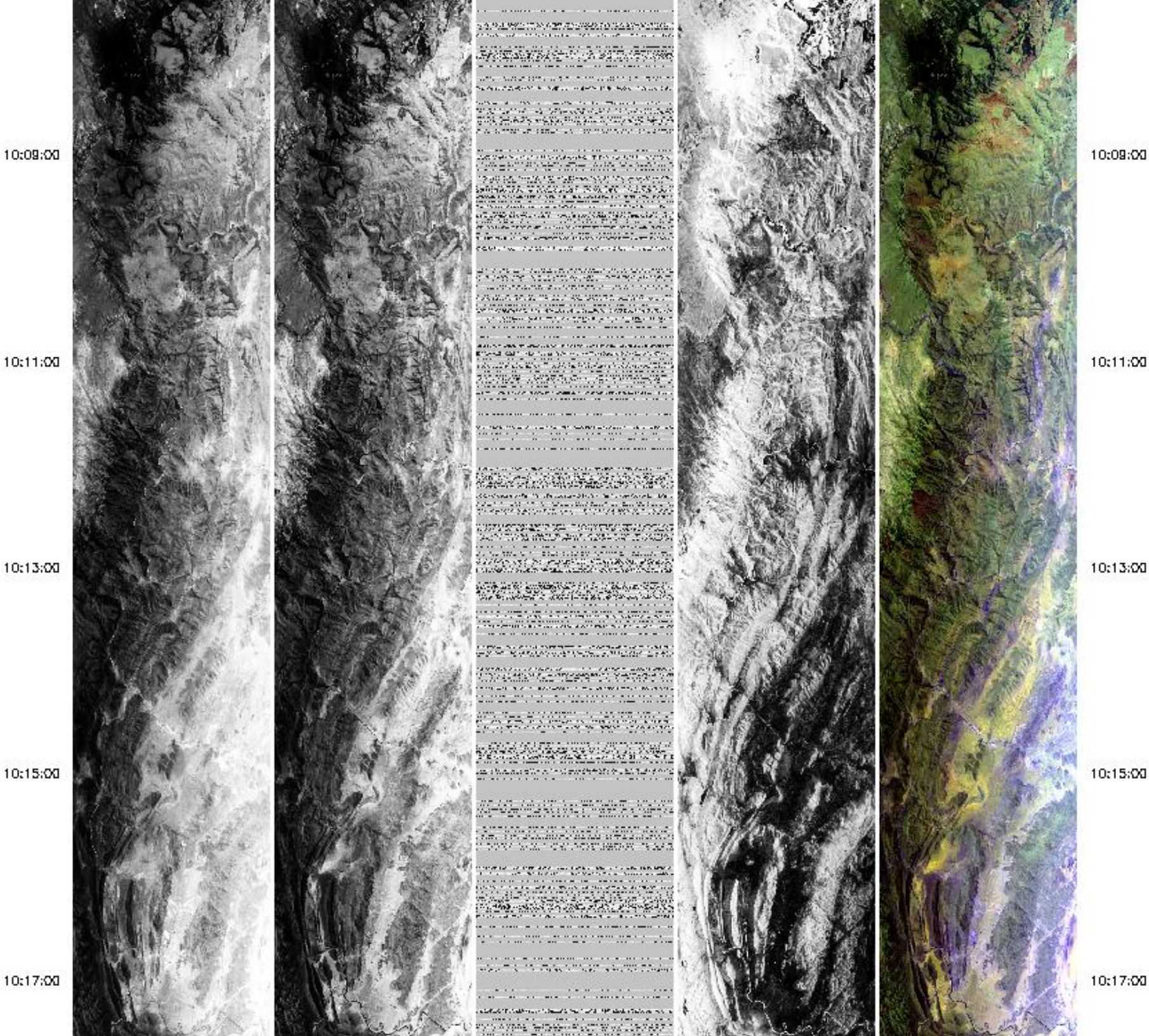
Lower Right Lat, Lon = −25.0°, 31.4°


0.66$\mu$m (#3) | 1.61$\mu$m (#10) | 3.74$\mu$m (#30) | 10.94$\mu$m (#45) reverse scale | RGB (#20,#10,#2)

Upper Left Lat, Lon = −26.6°, 32.0°
Lower Right Lat, Lon = −25.0°, 31.4°
Aircraft Heading = 356.3°
Solar Zenith = 39.9°
GPS Altitude = 20590. m (MSL)

MODIS Airborne Simulator Browse Imagery
SAFARI 2000 Campaign – 17 Aug 2000
South Africa
Flight #00–147 Track #9

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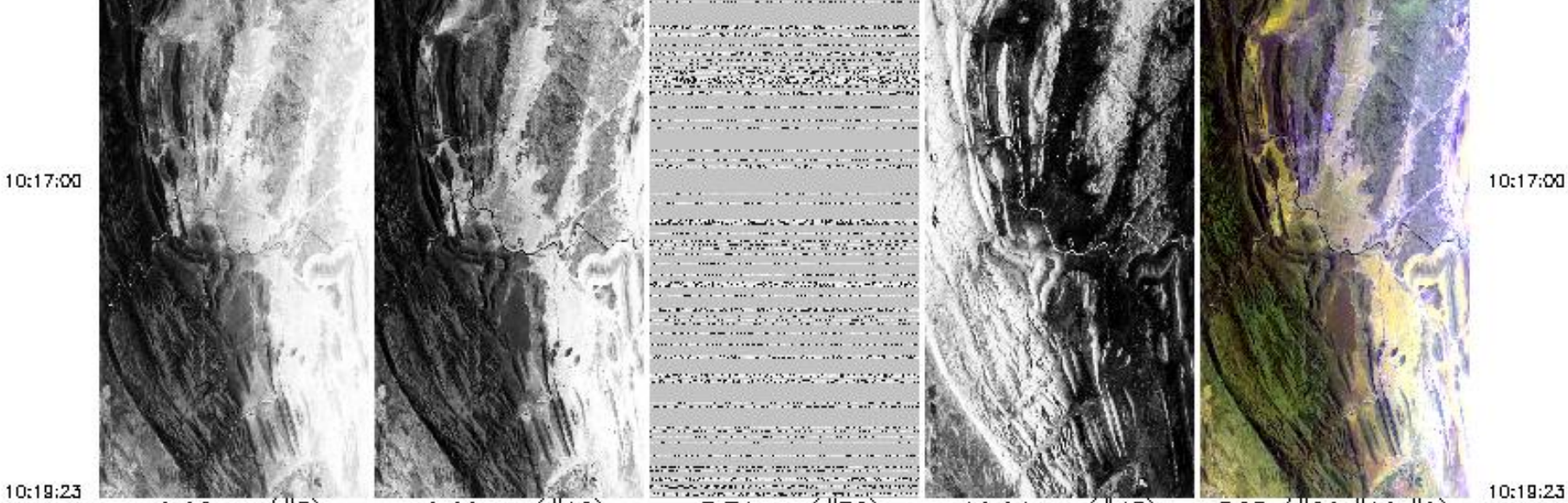
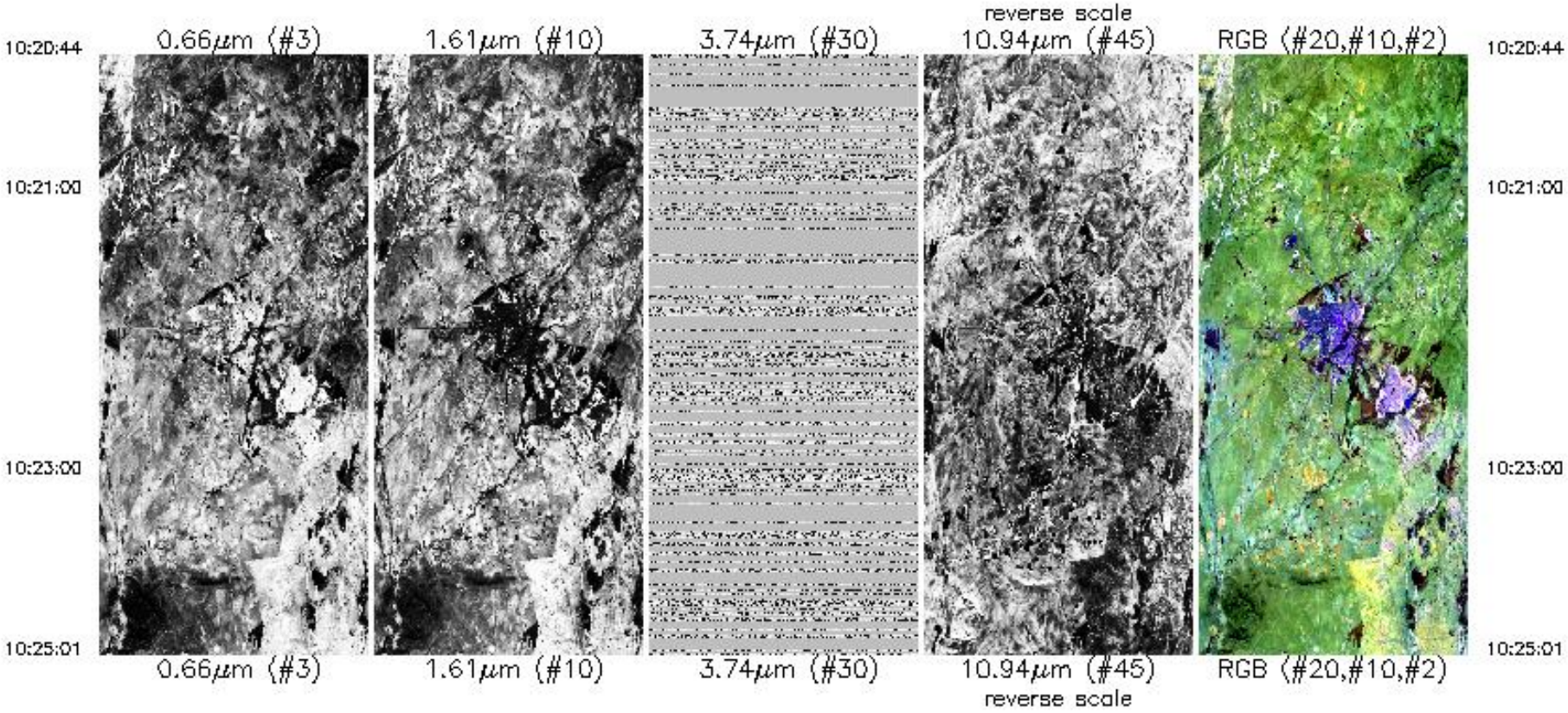



Upper Left Lat, Lon = −24.7°, 31.6°
Lower Right Lat, Lon = −24.4°, 29.5°
Aircraft Heading = 295.4°
Solar Zenith = 38.0°
GPS Altitude = 20623. m (MSL)

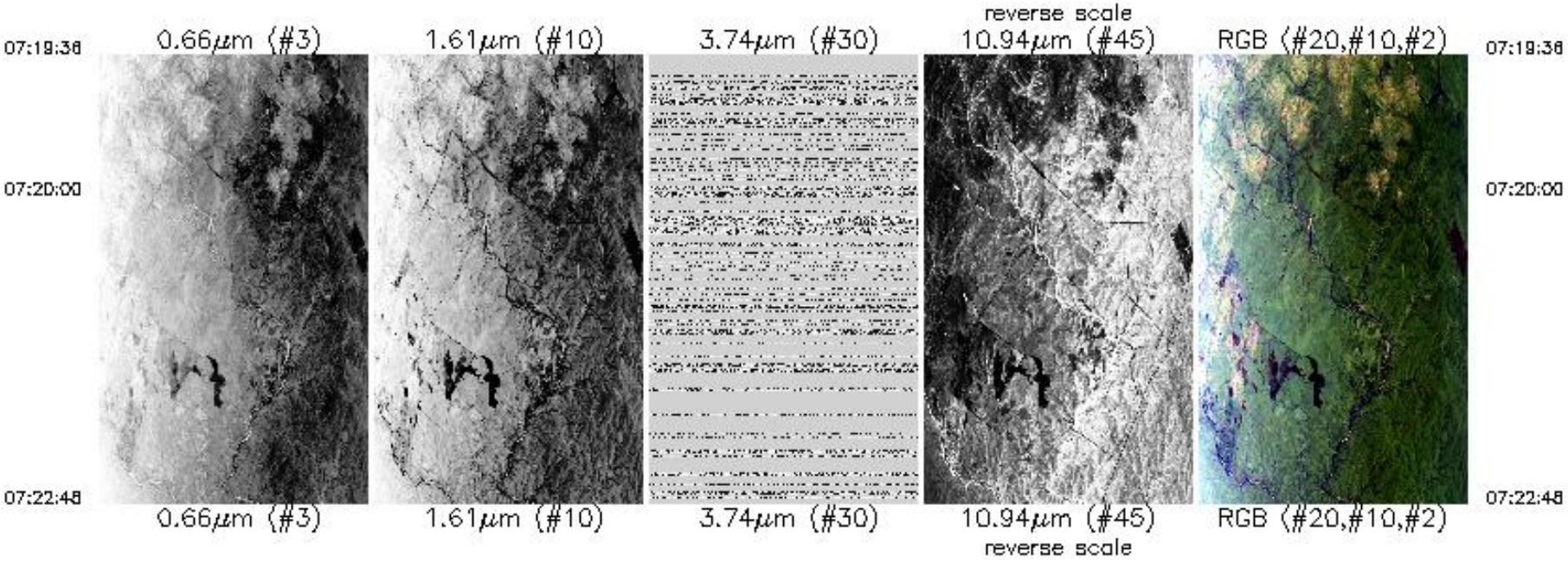
MODIS Airborne Simulator Browse Imagery
SAFARI 2000 Campaign – 17 Aug 2000
South Africa
Flight #00–147 Track #10




Upper Left Lat, Lon = −24.1°, 29.6°
Lower Right Lat, Lon = −23.6°, 29.3°
Aircraft Heading = 0.5°
Solar Zenith = 37.5°
GPS Altitude = 20627. m (MSL)

# Flight #00-147 Browse Imagery

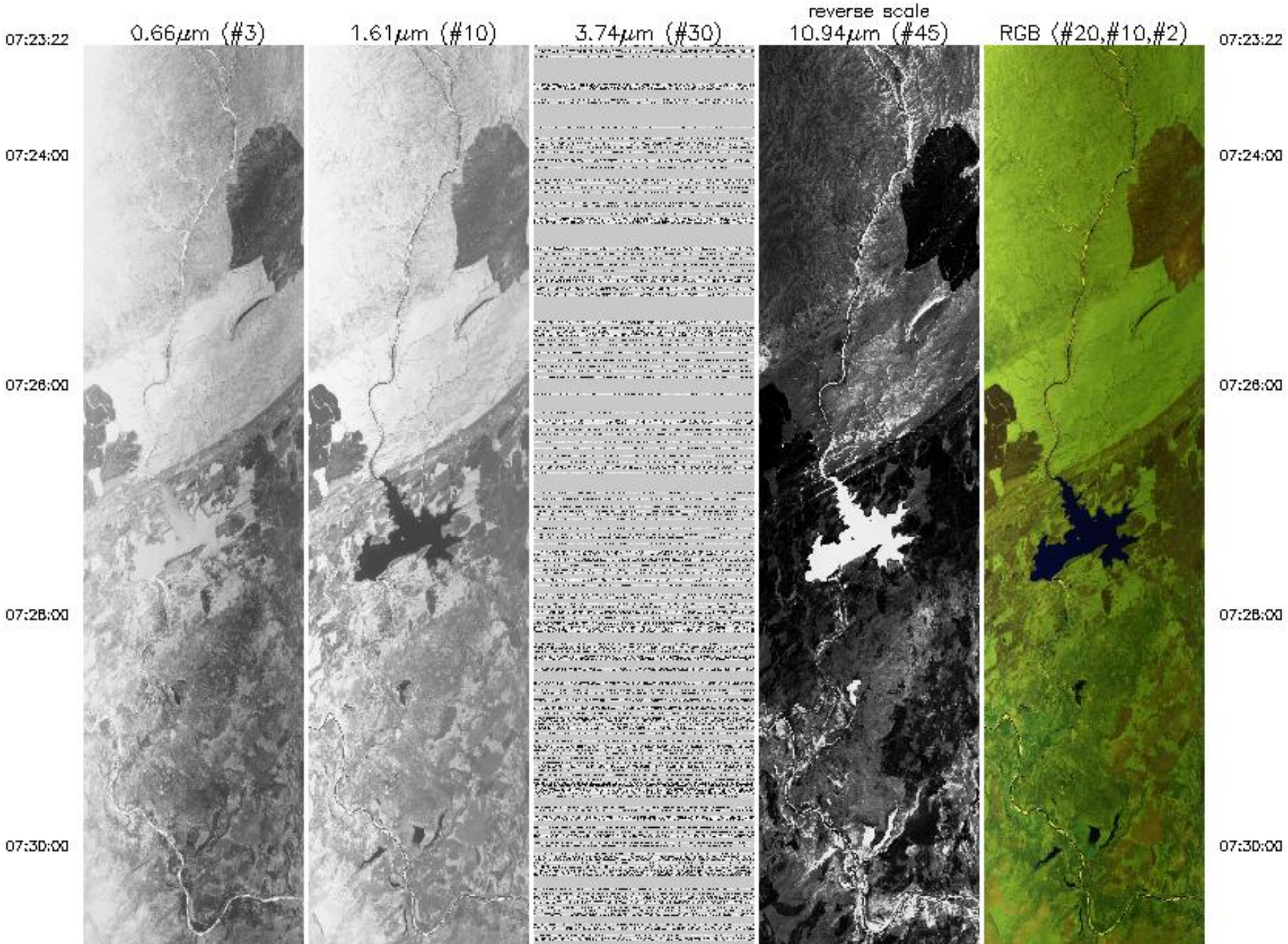
MODIS Airborne Simulator Browse Imagery
SAFARI 2000 Campaign – 17 Aug 2000
S.A, Mozambique
Flight #00–147 Track #1




Upper Left Lat, Lon = −24.8°, 31.2°
Lower Right Lat, Lon = −24.8°, 31.7°
Aircraft Heading = 143.9°
Solar Zenith = 54.4°
GPS Altitude = 20225. m (MSL)

MODIS Airborne Simulator Browse Imagery
SAFARI 2000 Campaign – 17 Aug 2000
Indian Ocean
Flight #00–147 Track #2

MODIS Airborne Simulator Browse Imagery
SAFARI 2000 Campaign – 17 Aug 2000
Indian Ocean
Flight #00–147 Track #2

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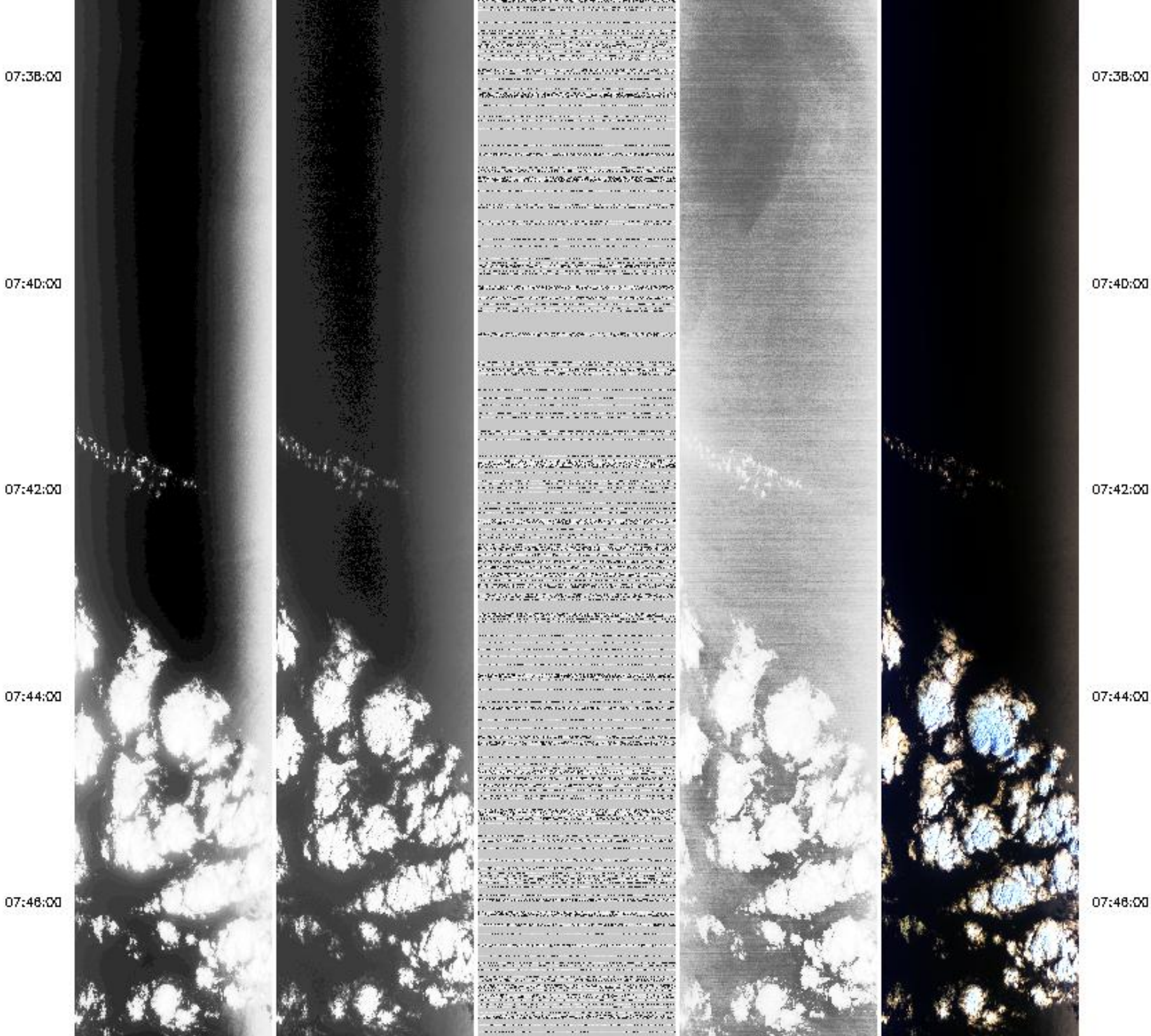
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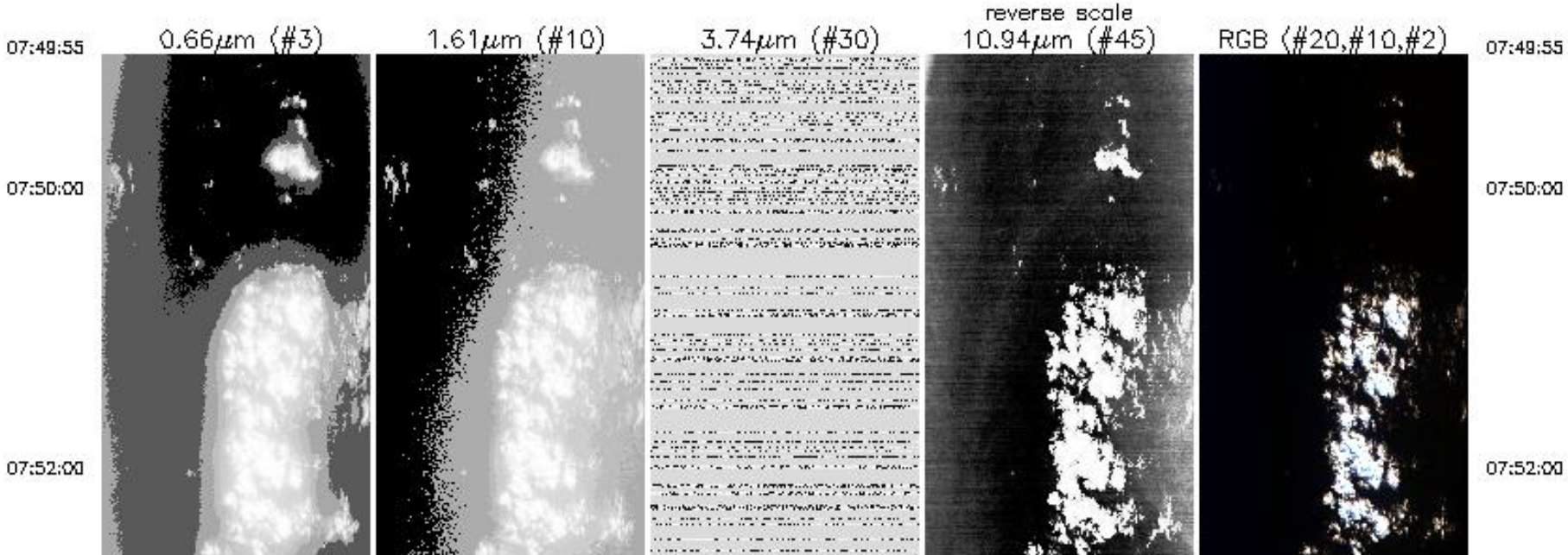
Upper Left Lat, Lon = −25.1°, 31.5°
Lower Right Lat, Lon = −25.8°, 34.6°
Aircraft Heading = 117.5°
Solar Zenith = 53.8°
GPS Altitude = 20262. m (MSL)

MODIS Airborne Simulator Browse Imagery
SAFARI 2000 Campaign – 17 Aug 2000
Indian Ocean
Flight #00–147 Track #3

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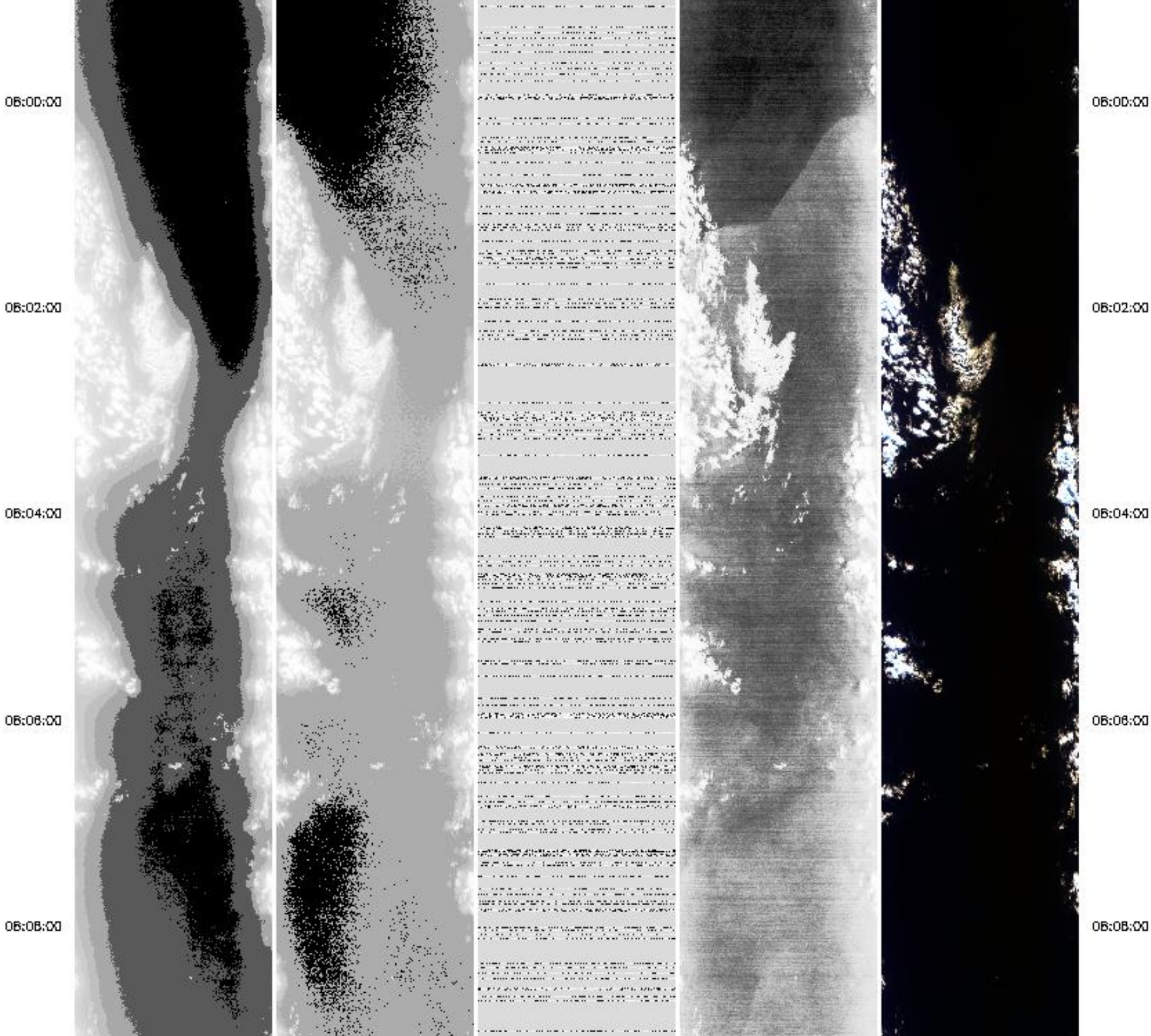
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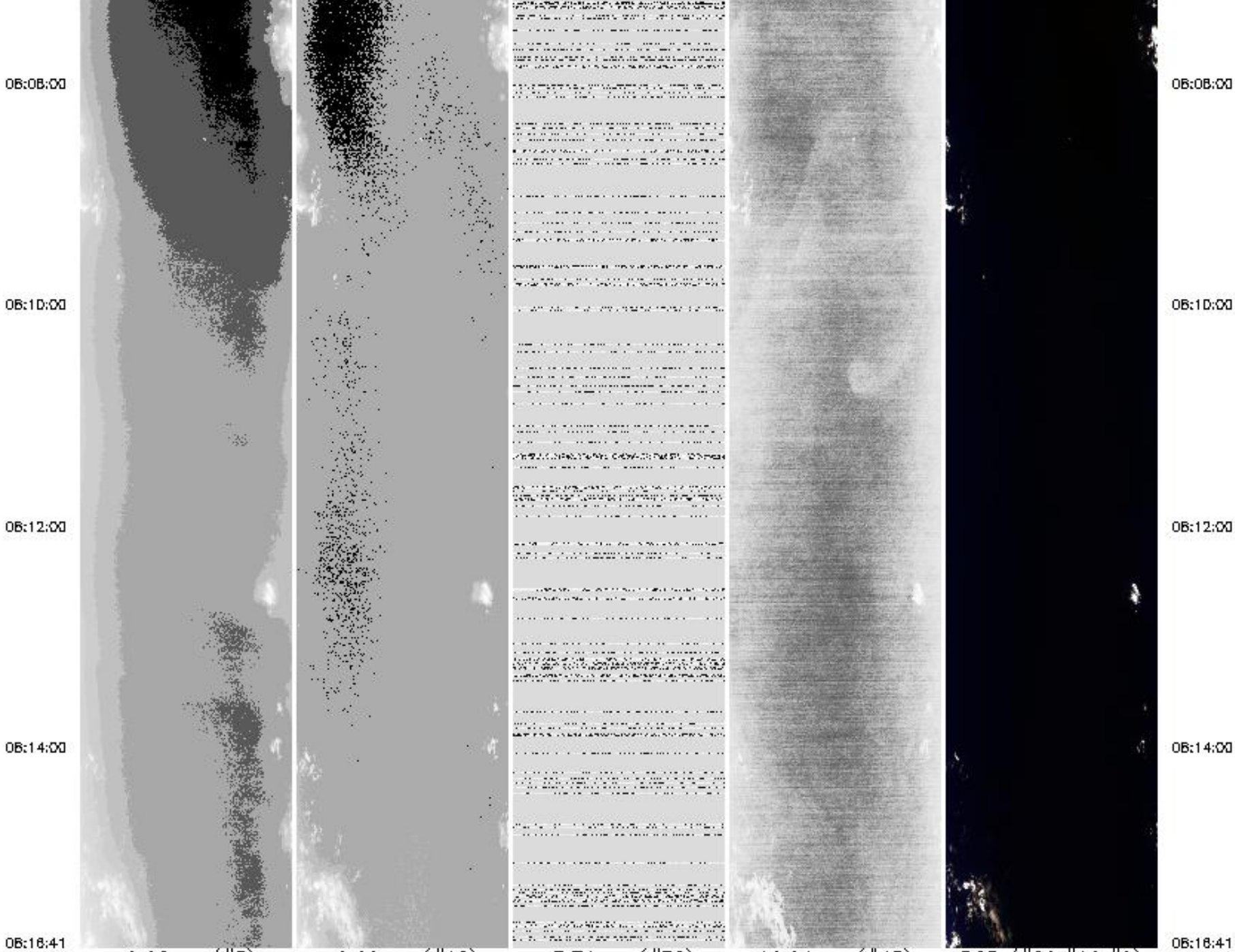
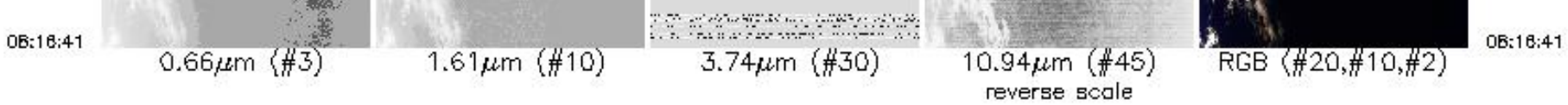
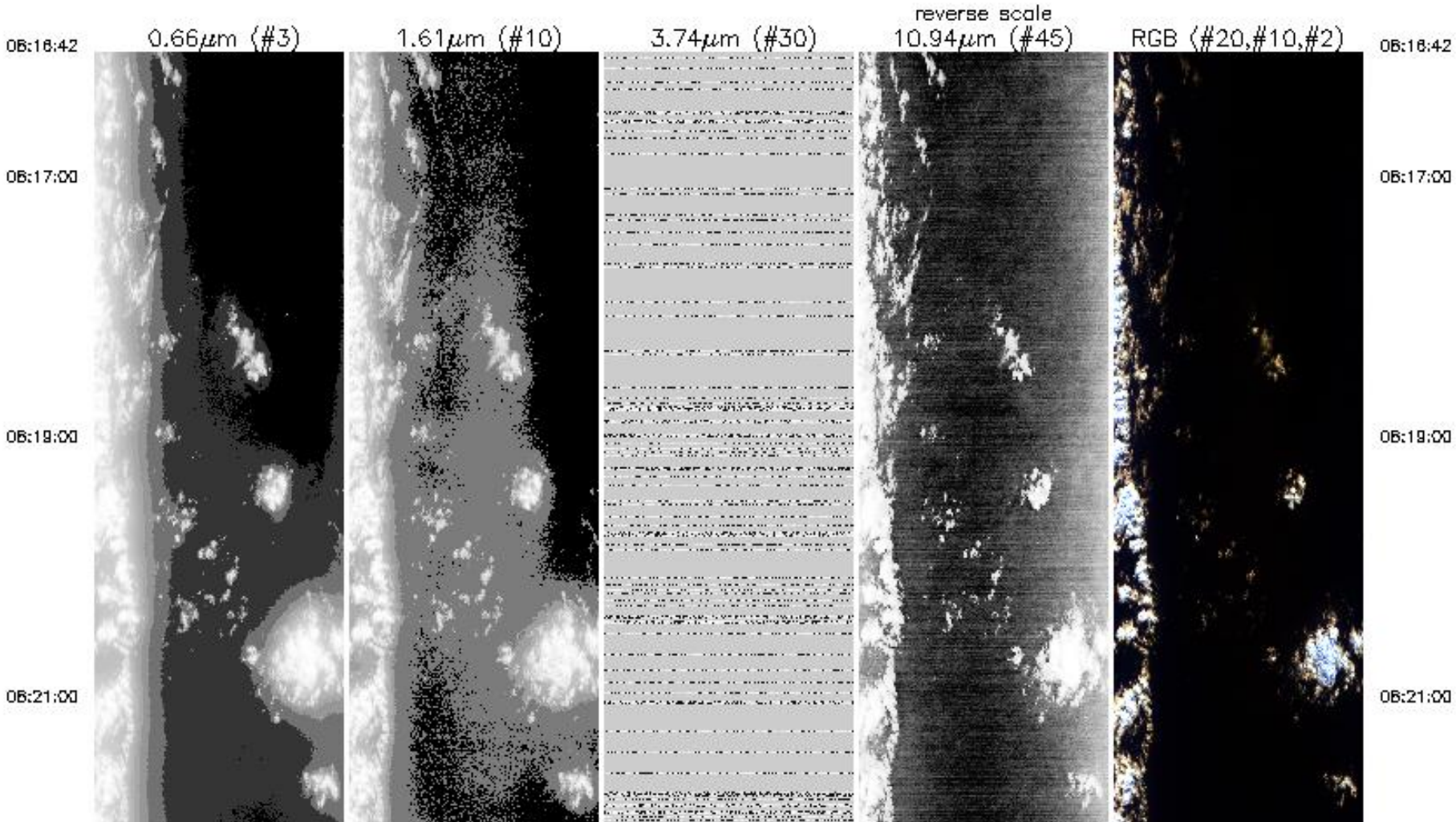


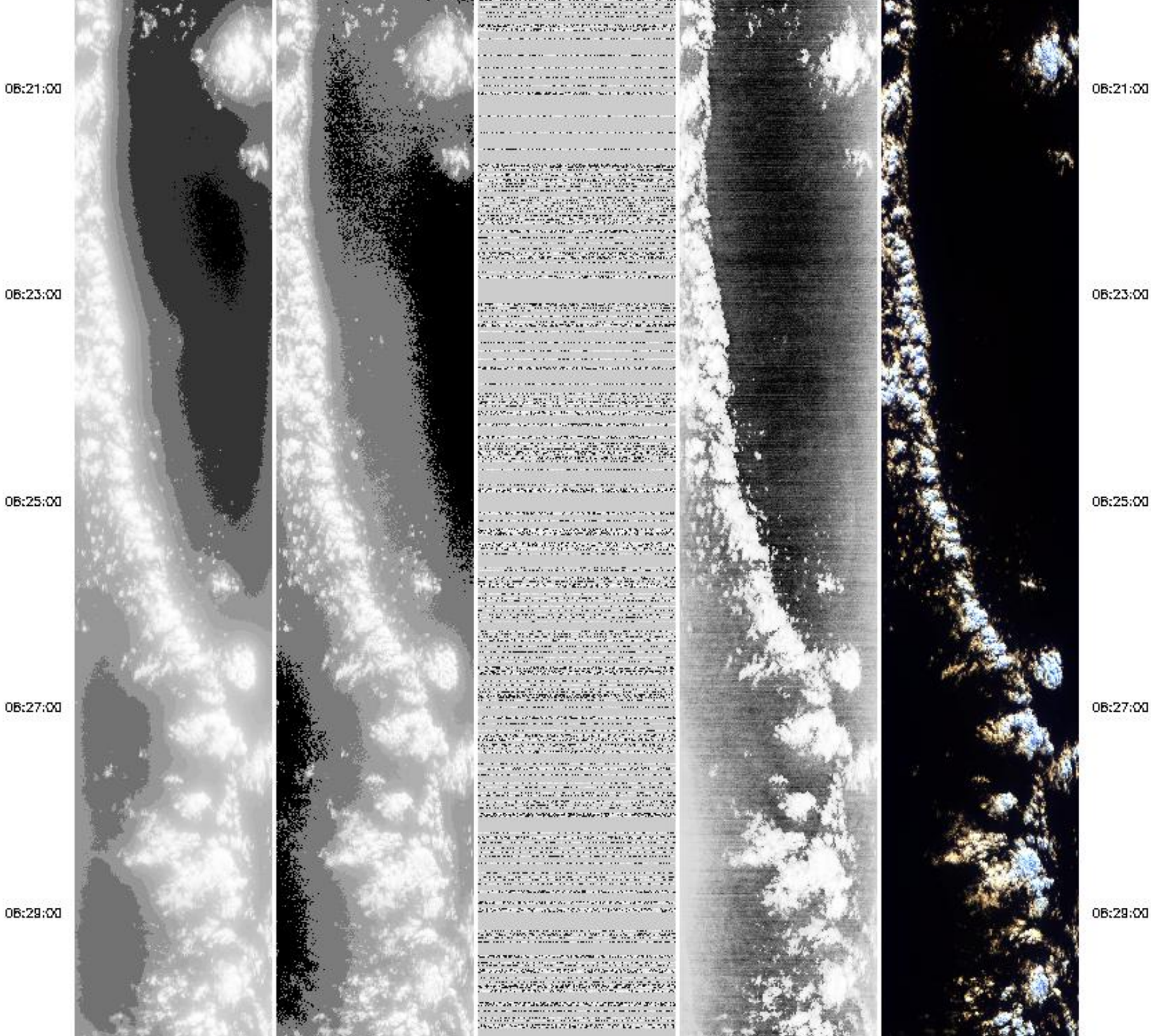

Upper Left Lat, Lon = −26.1°, 34.4°
Lower Right Lat, Lon = −29.1°, 34.0°
Aircraft Heading = 182.8°
Solar Zenith = 48.5°




Upper Left Lat, Lon = −26.1°, 34.4°
Lower Right Lat, Lon = −29.1°, 34.0°
Aircraft Heading = 182.8°
Solar Zenith = 48.5°
GPS Altitude = 20196. m (MSL)

# MODIS Airborne Simulator Browse Imagery
## SAFARI 2000 Campaign – 17 Aug 2000
## Indian Ocean
## Flight #00–147 Track #4

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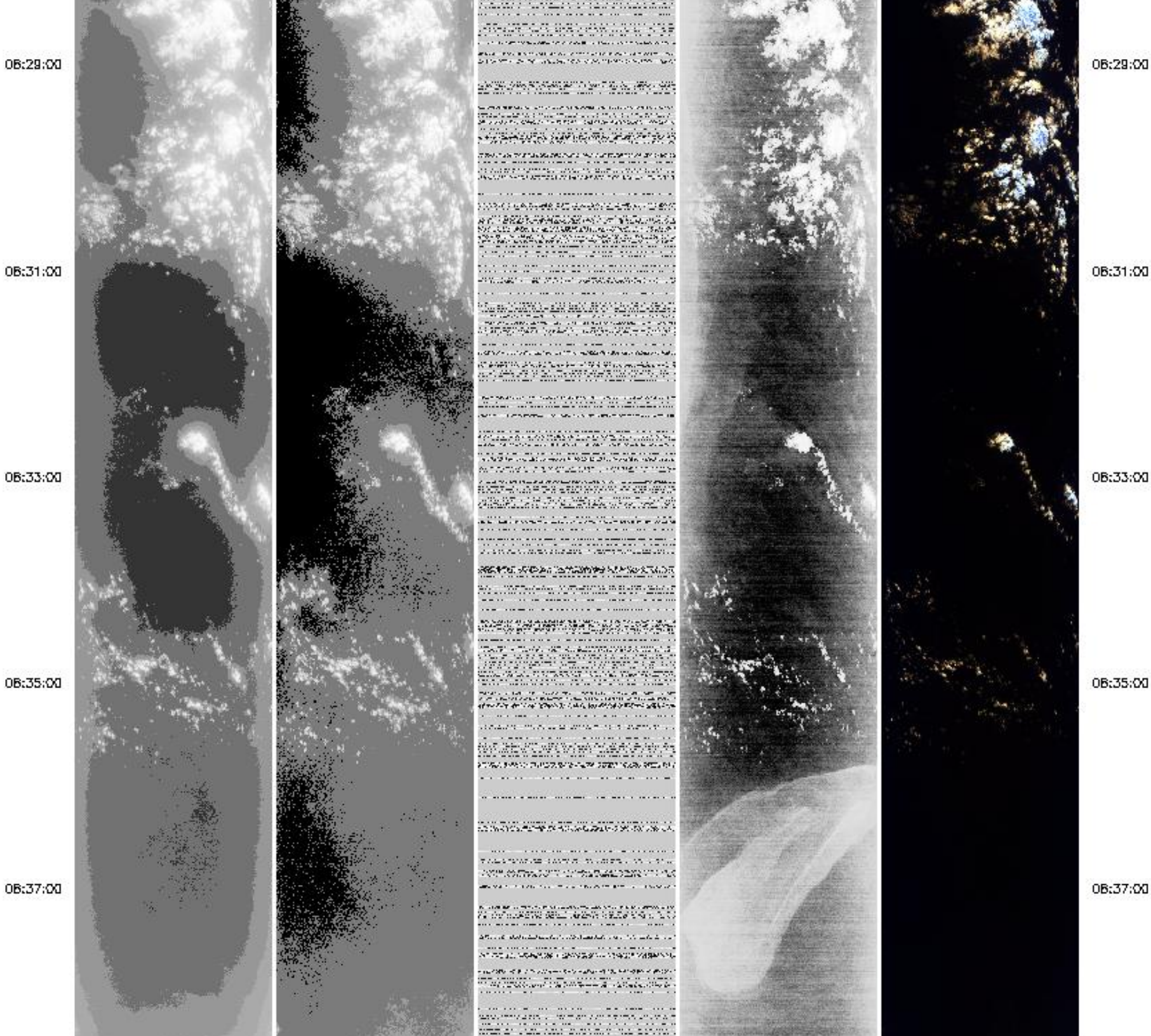
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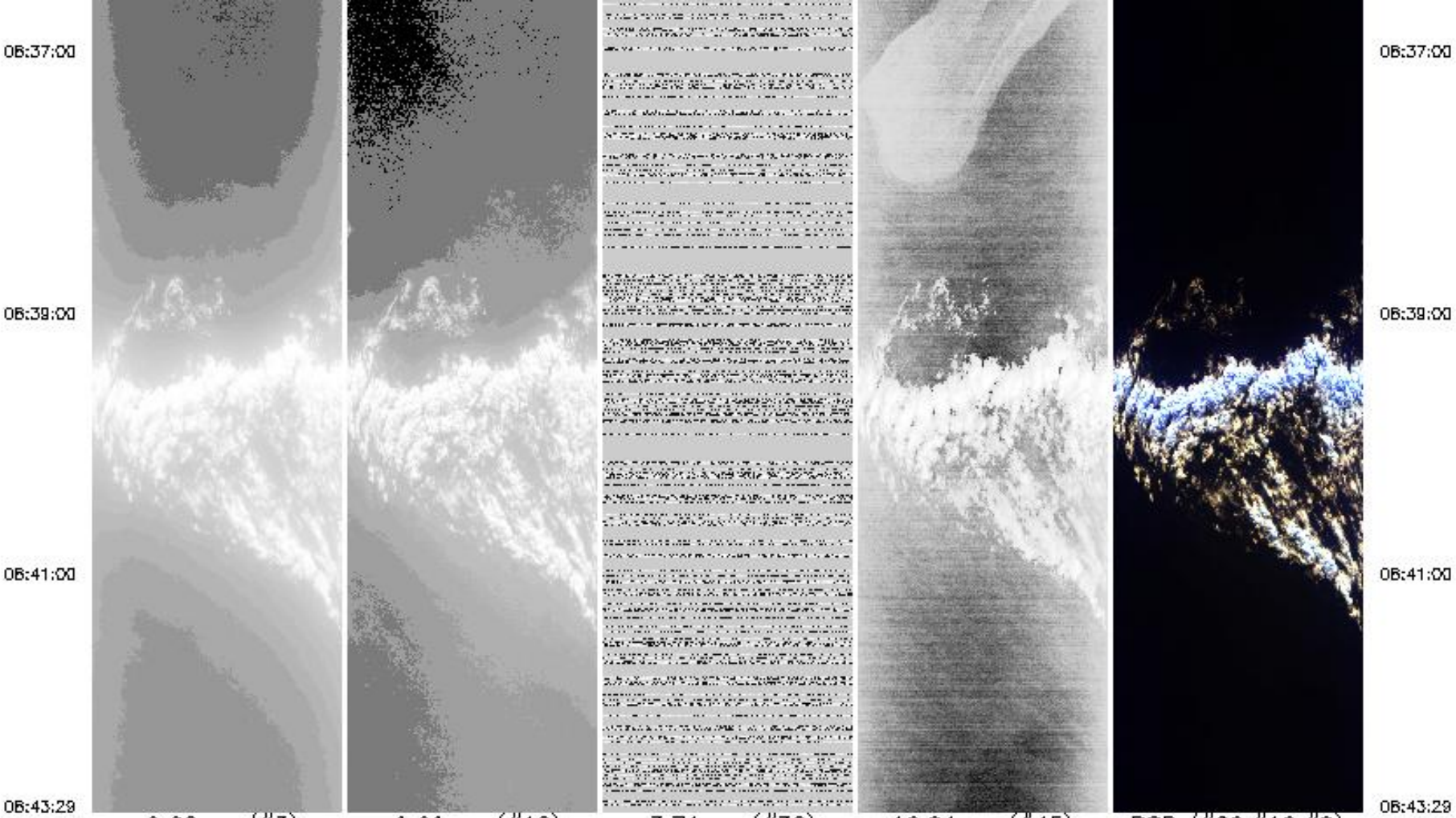
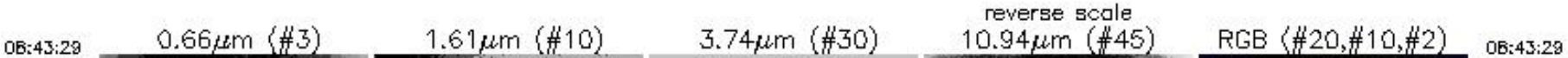
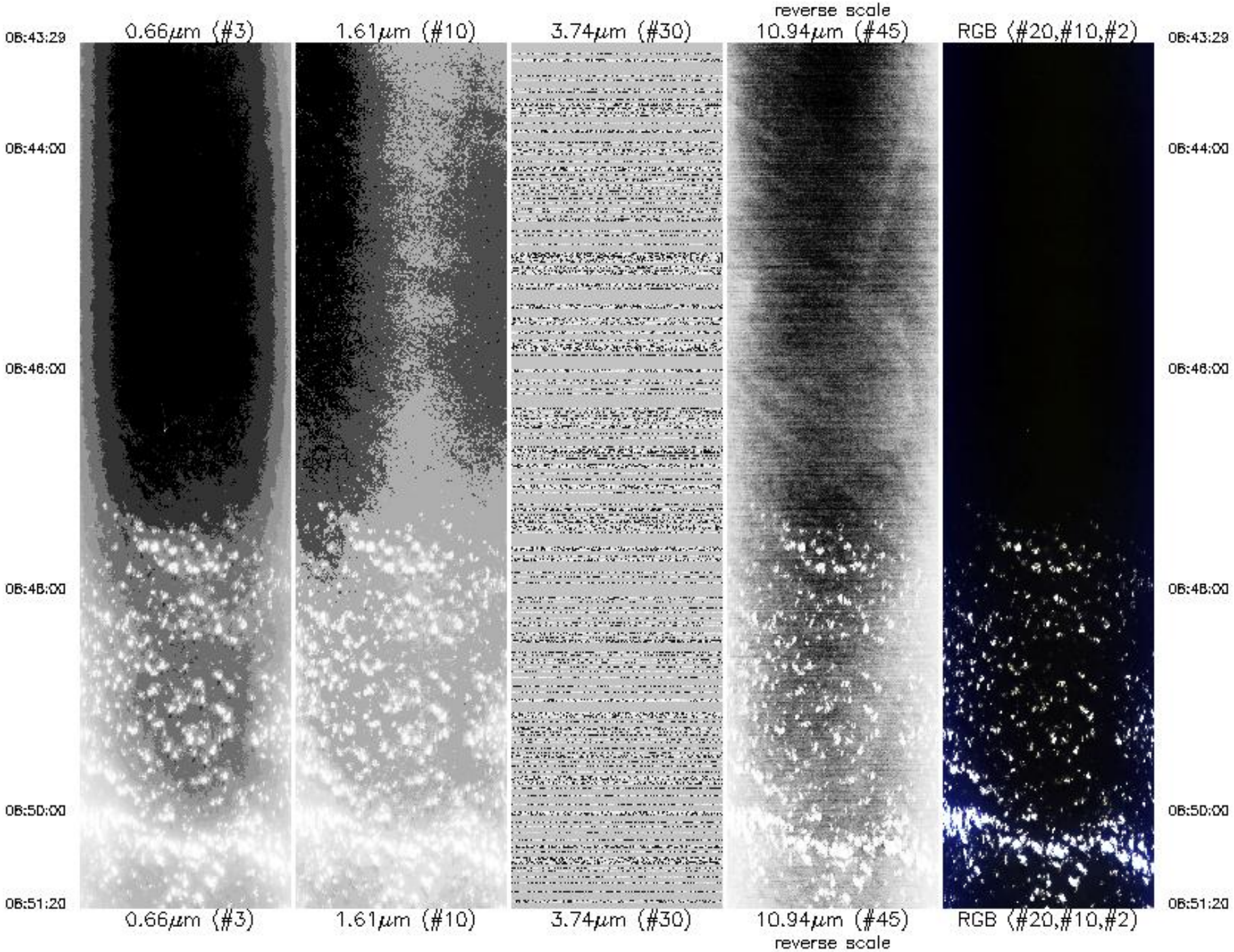



Upper Left Lat, Lon = −29.0°, 33.6°
Lower Right Lat, Lon = −31.9°, 33.2°
Aircraft Heading = 195.3°
Solar Zenith = 47.8°
GPS Altitude = 20302. m (MSL)

# MODIS Airborne Simulator Browse Imagery
## SAFARI 2000 Campaign – 17 Aug 2000
## Indian Ocean
## Flight #00–147 Track #5

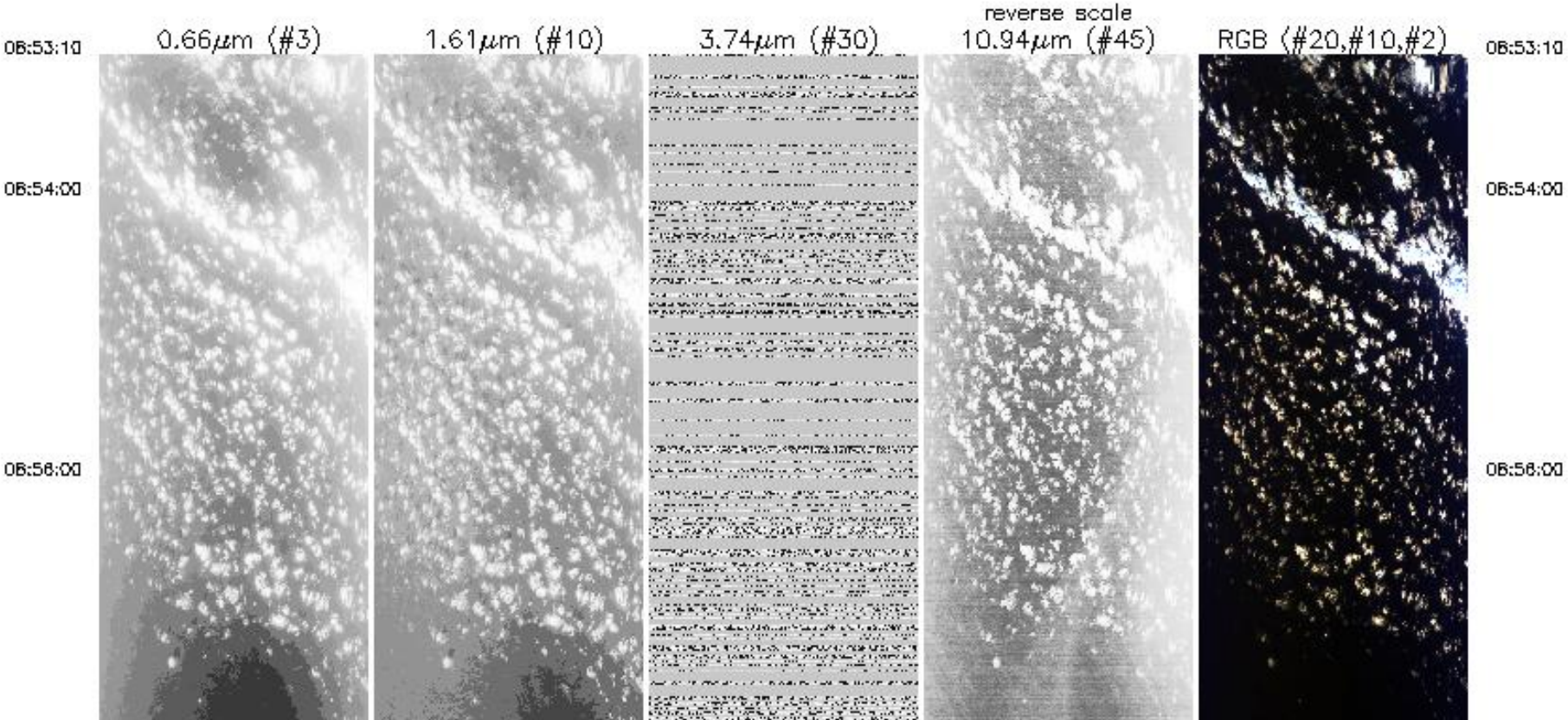


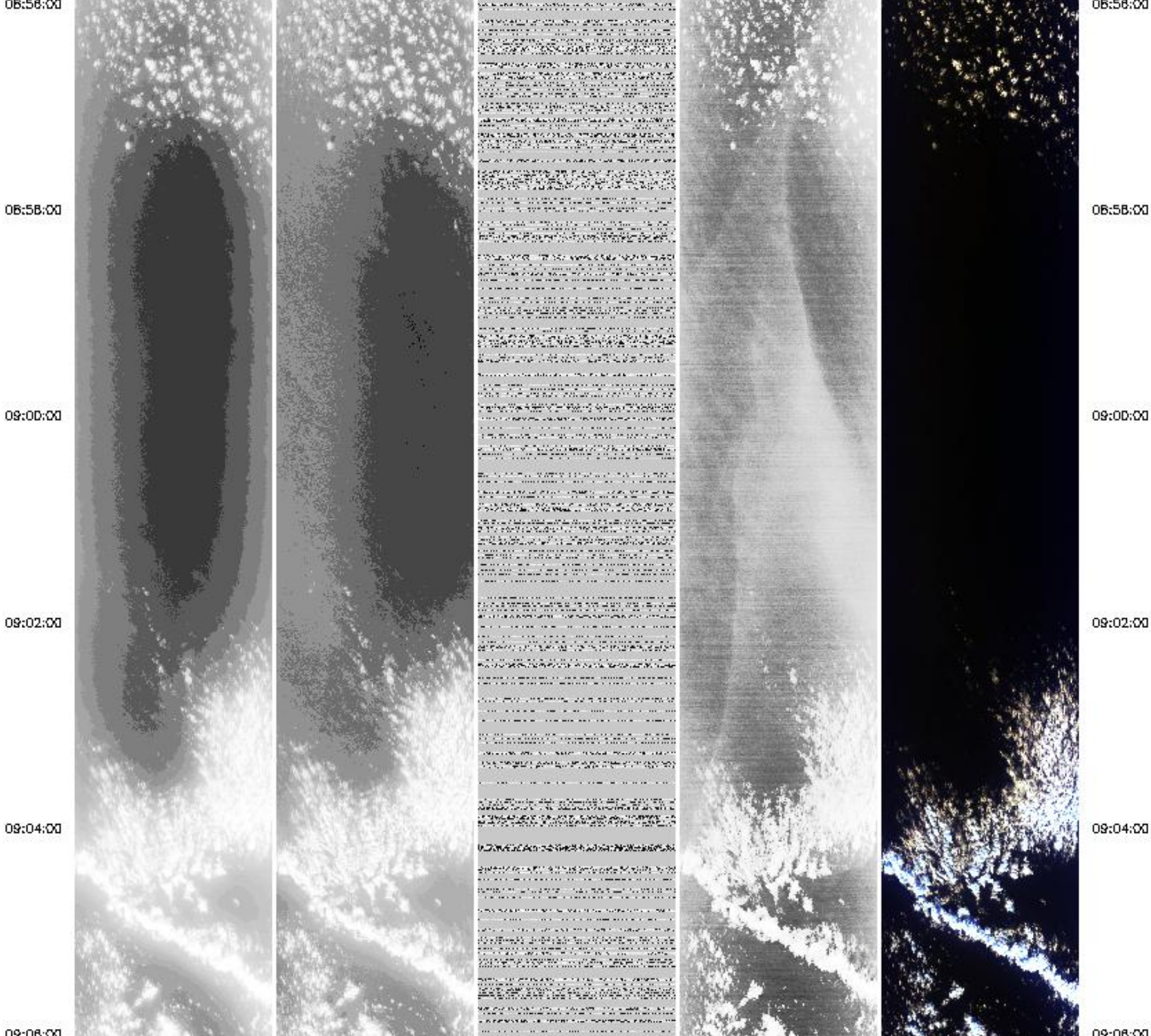
MODIS Airborne Simulator Browse Imagery
SAFARI 2000 Campaign – 17 Aug 2000
Indian Ocean
Flight #00–147 Track #5




Upper Left Lat, Lon = −31.8°, 32.8°
Lower Right Lat, Lon = −32.7°, 32.9°
Aircraft Heading = 196.2°
Solar Zenith = 48.0°
GPS Altitude = 20277. m (MSL)

MODIS Airborne Simulator Browse Imagery
SAFARI 2000 Campaign – 17 Aug 2000
S.A, Indian Ocean
Flight #00–147 Track #6

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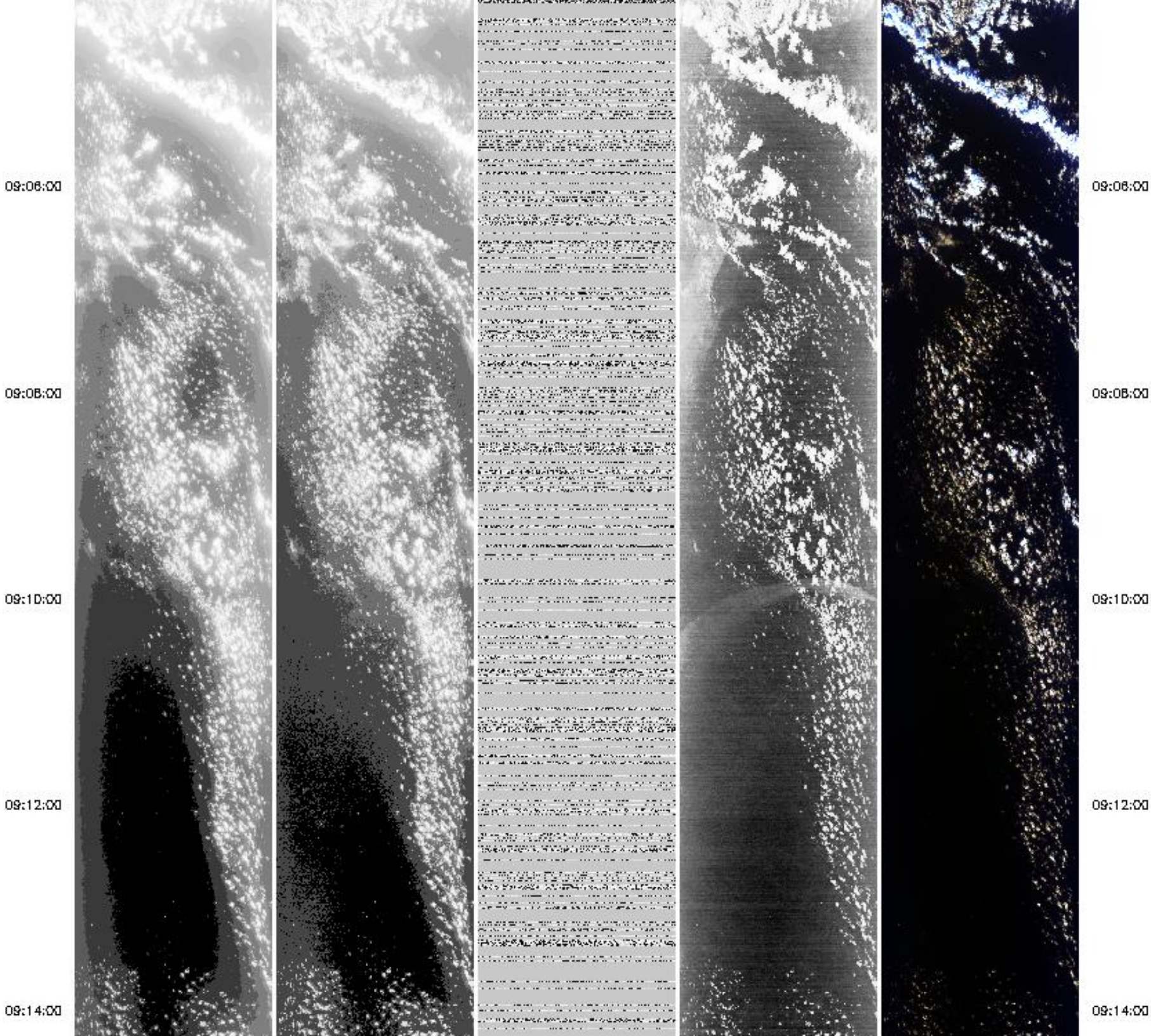
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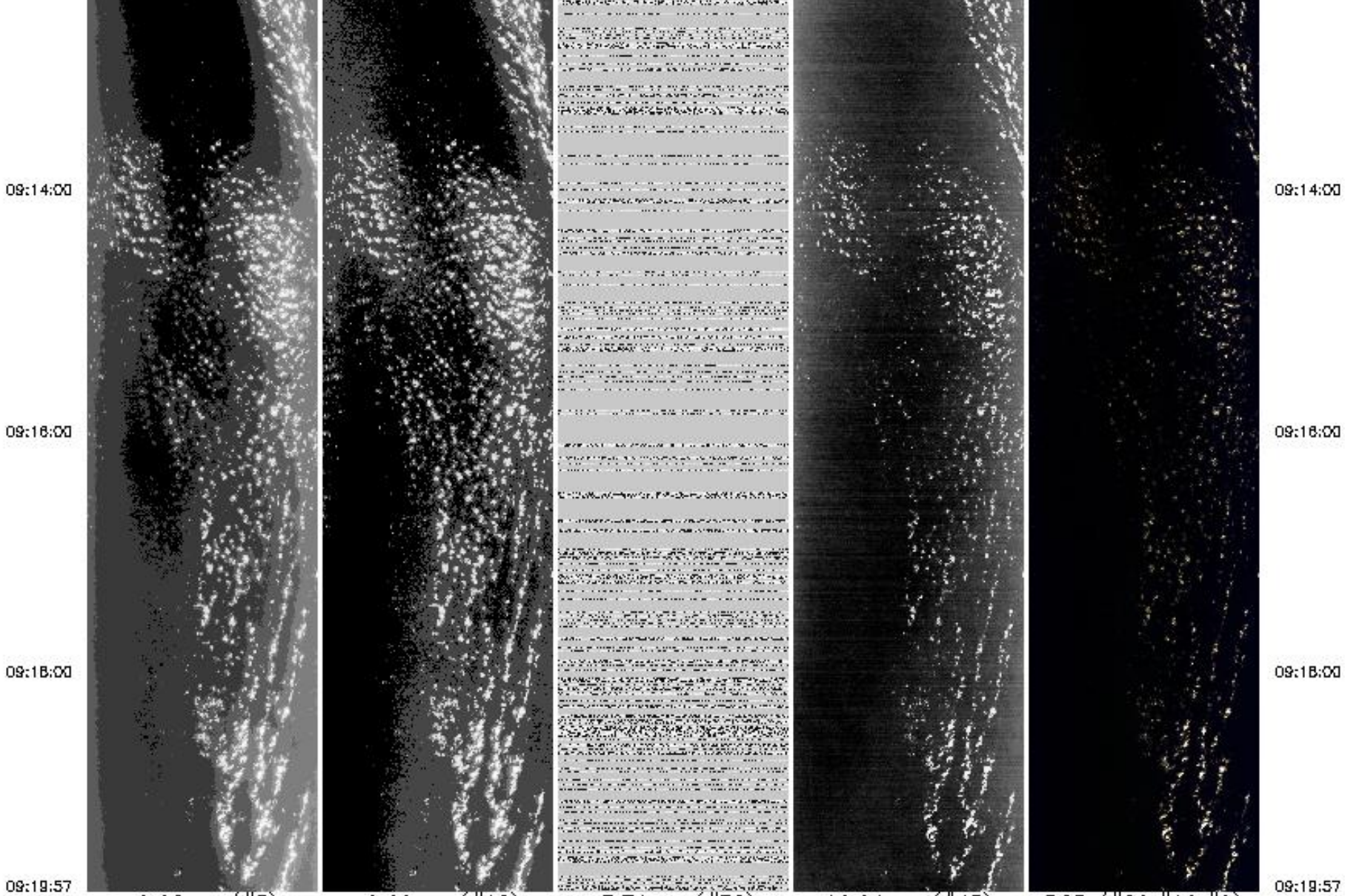
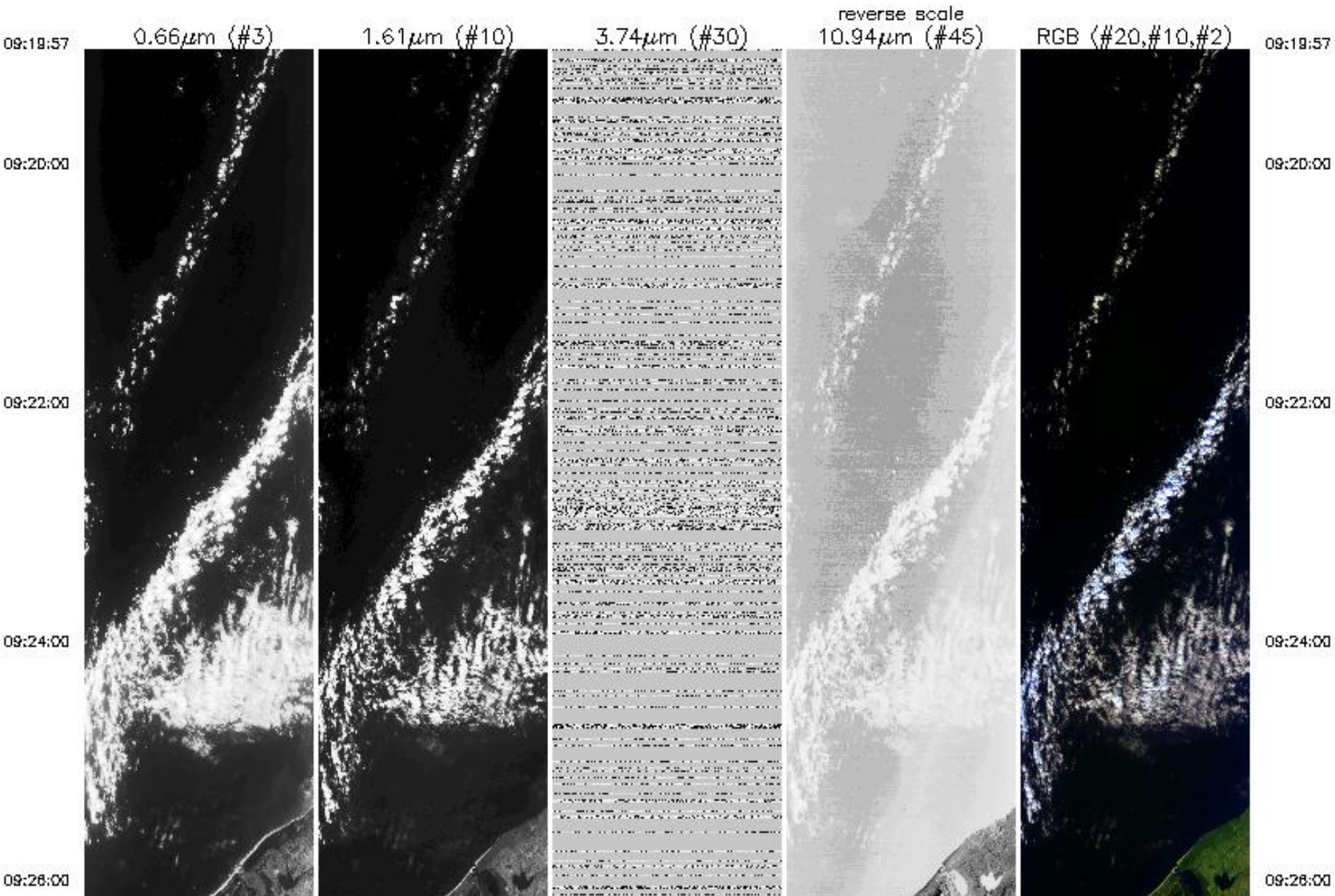
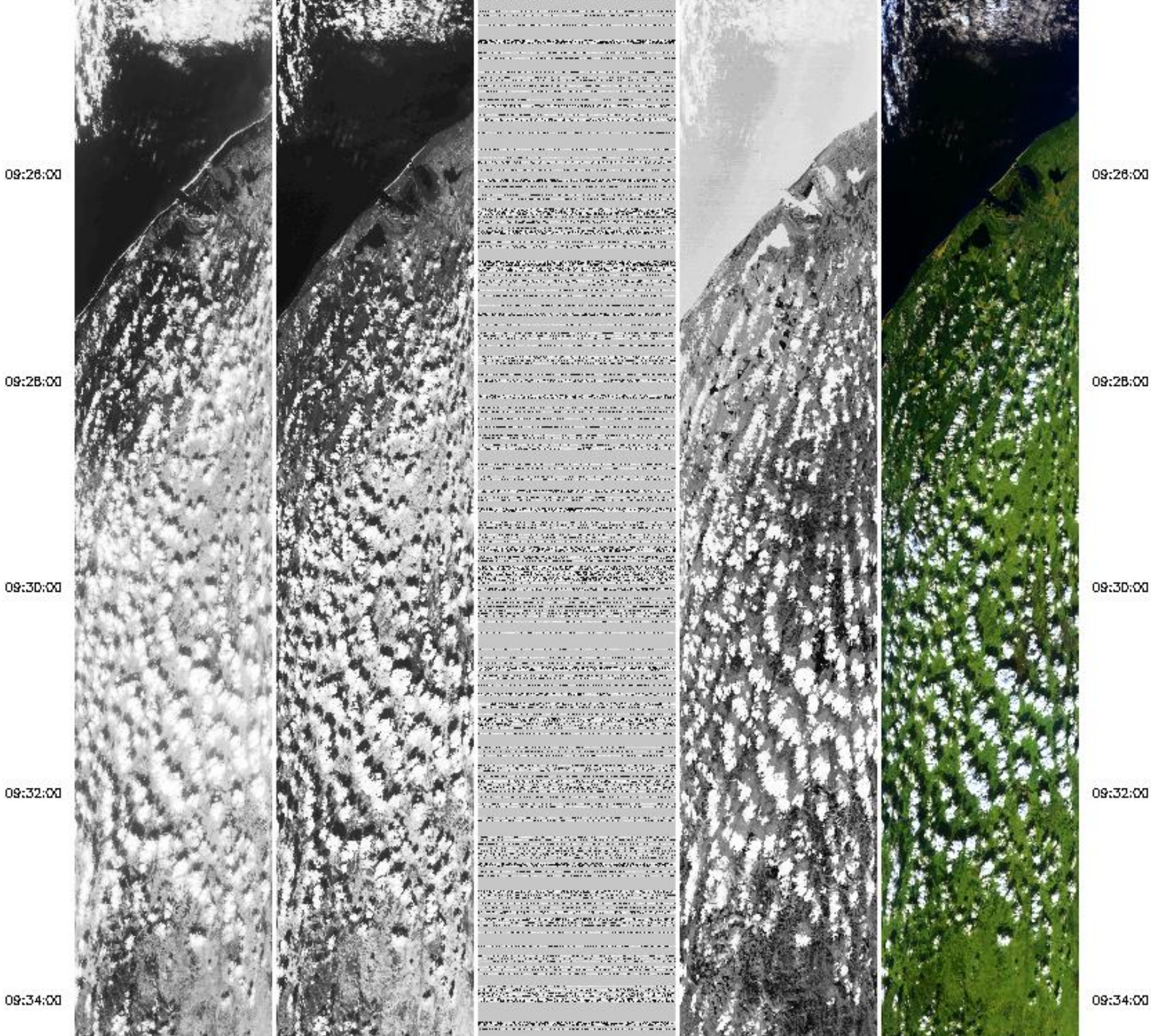



Upper Left Lat, Lon = −32.7°, 32.8°
Lower Right Lat, Lon = −29.6°, 32.0°
Aircraft Heading = 354.5°
Solar Zenith = 48.1°
GPS Altitude = 20302. m (MSL)

Lower Right Lat, Lon = −29.6°, 32.0°
Aircraft Heading = 354.5°
Solar Zenith = 48.1°
GPS Altitude = 20302. m (MSL)

# MODIS Airborne Simulator Browse Imagery
## SAFARI 2000 Campaign – 17 Aug 2000
## S.A, Swaziland
## Flight #00–147 Track #7

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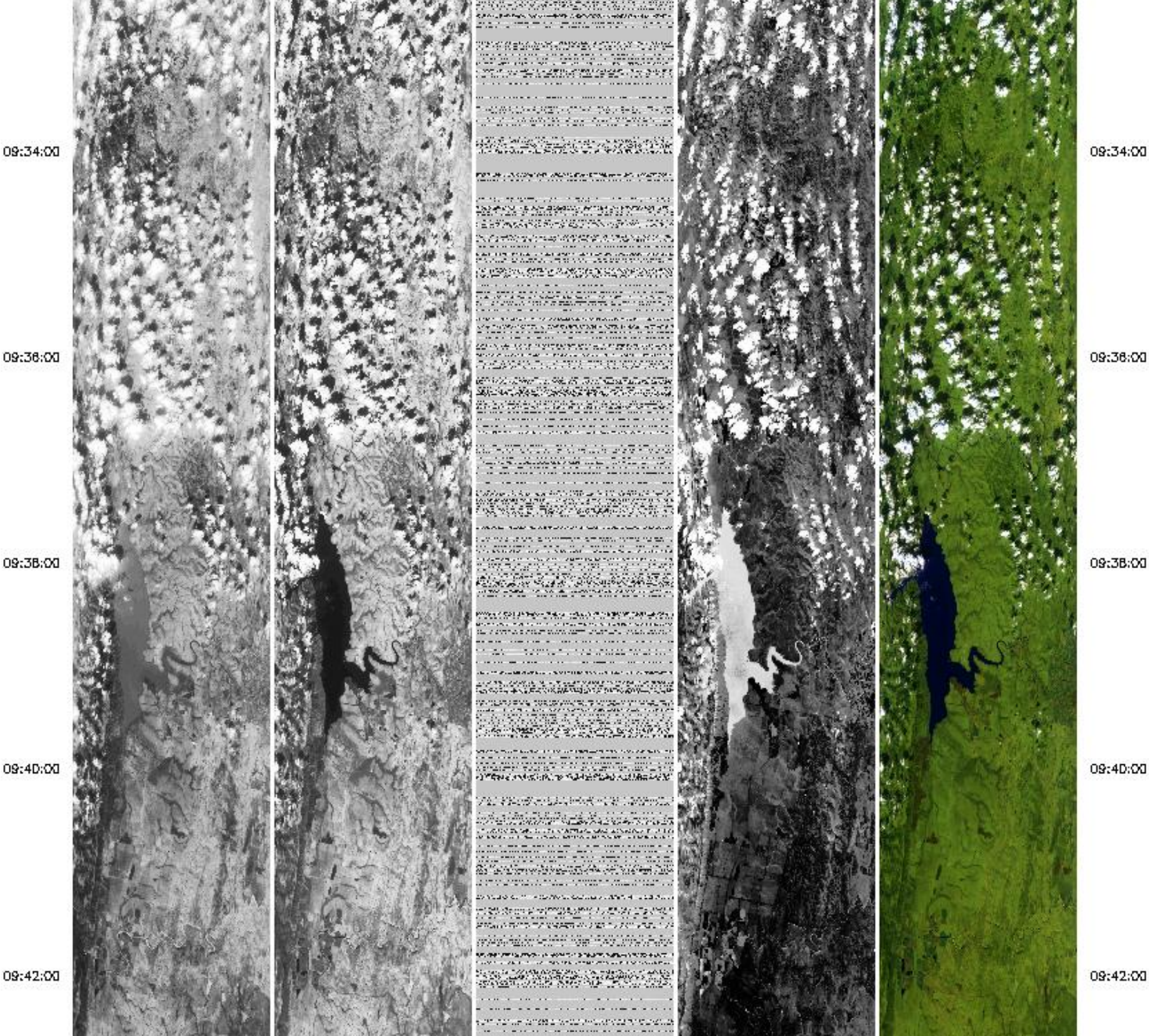
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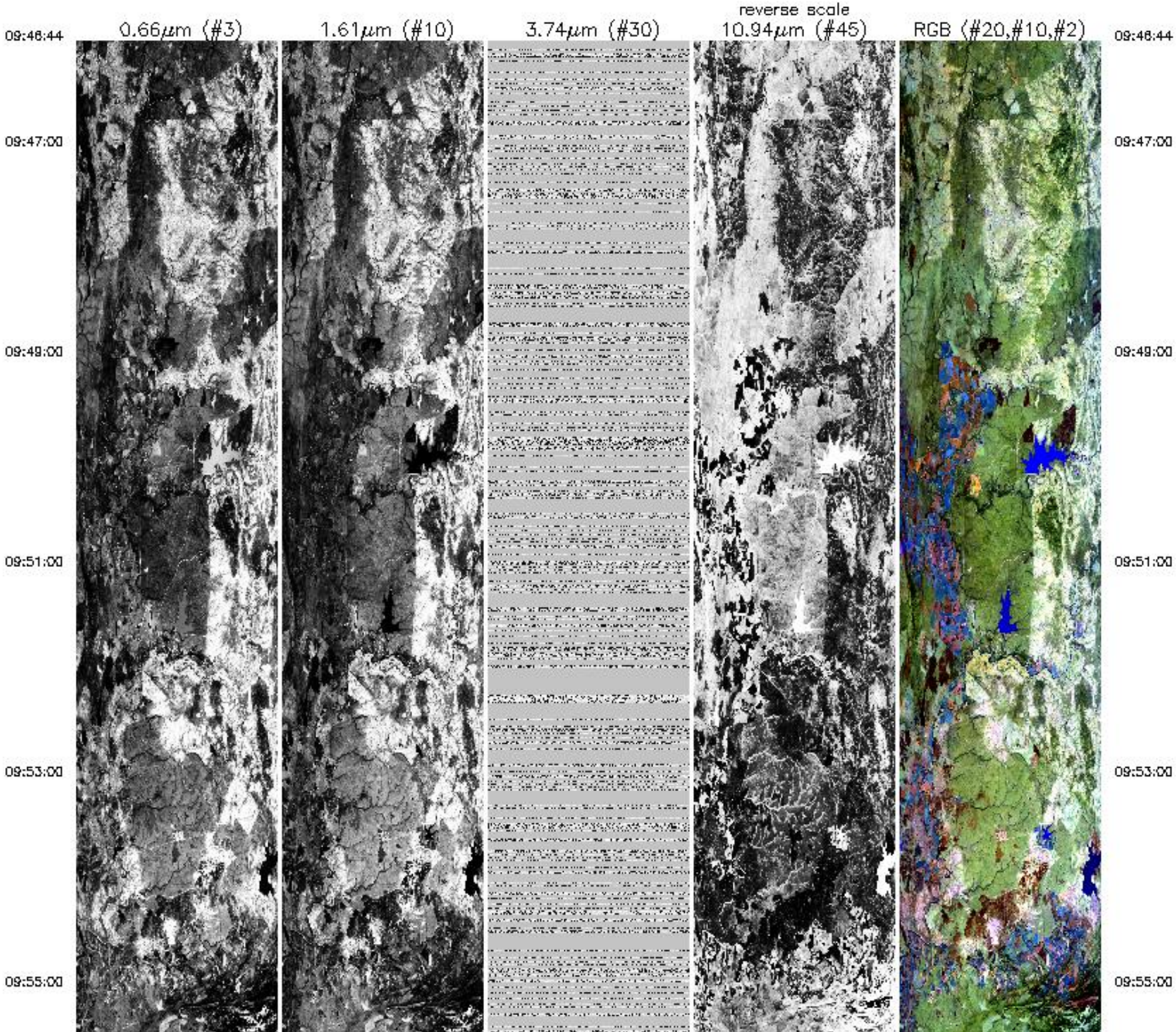
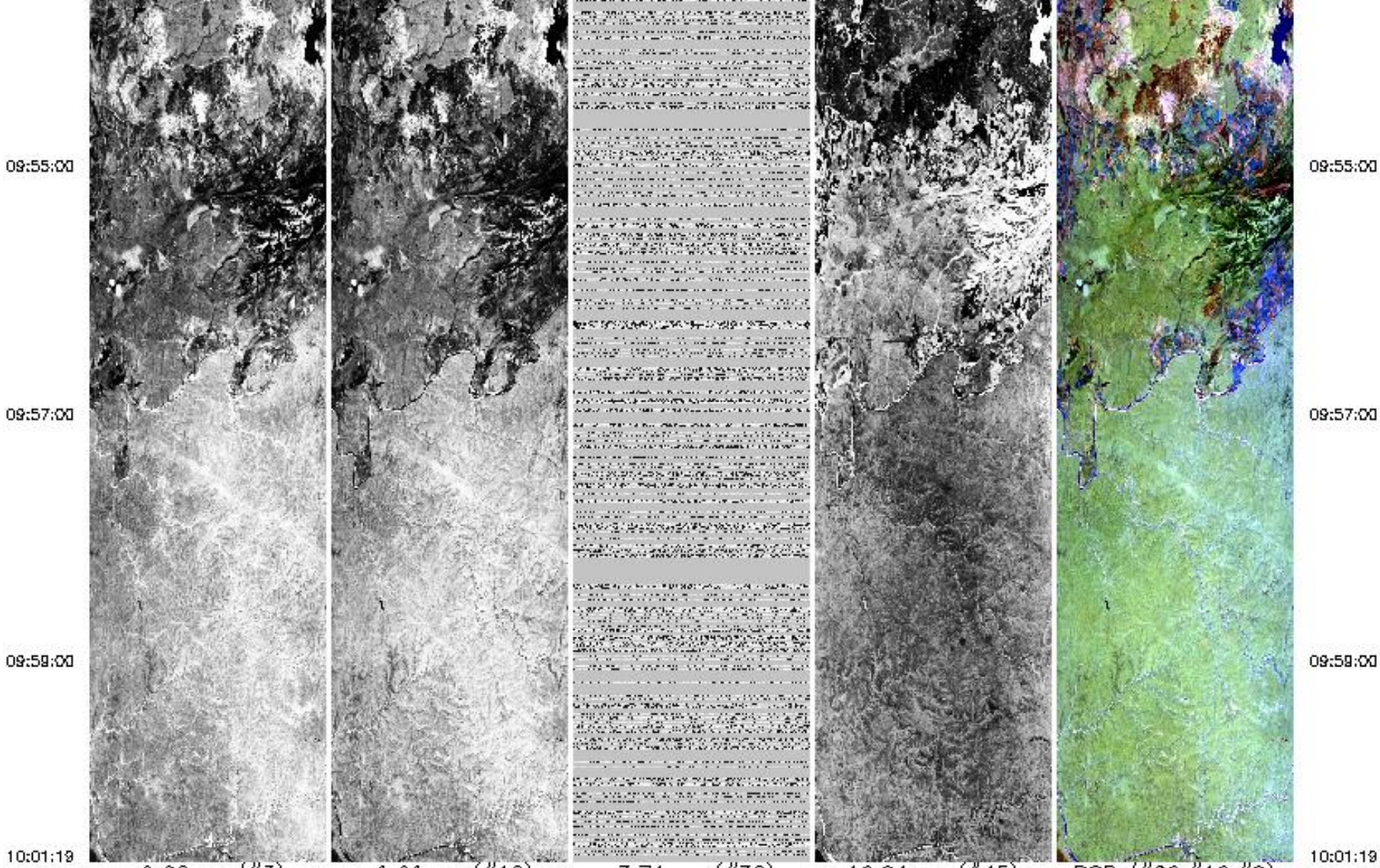
Upper Left Lat, Lon = −29.6°, 32.4°
Lower Right Lat, Lon = −26.6°, 31.6°
Aircraft Heading = 353.7°
Solar Zenith = 43.6°
GPS Altitude = 20486. m (MSL)

# MODIS Airborne Simulator Browse Imagery
## SAFARI 2000 Campaign – 17 Aug 2000
## South Africa
## Flight #00–147 Track #8


0.66μm (#3)
1.61μm (#10)
3.74μm (#30)
reverse scale
10.94μm (#45)
RGB (#20,#10,#2)
09:46:44
09:47:00
09:49:00
09:51:00
09:53:00
09:55:00




Upper Left Lat, Lon = −26.6°, 32.0°

Lower Right Lat, Lon = −25.0°, 31.4°

Aircraft Heading = 356.3°

Solar Zenith = 39.9°

GPS Altitude = 20590. m (MSL)

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South Africa
Flight #00–147 Track #9

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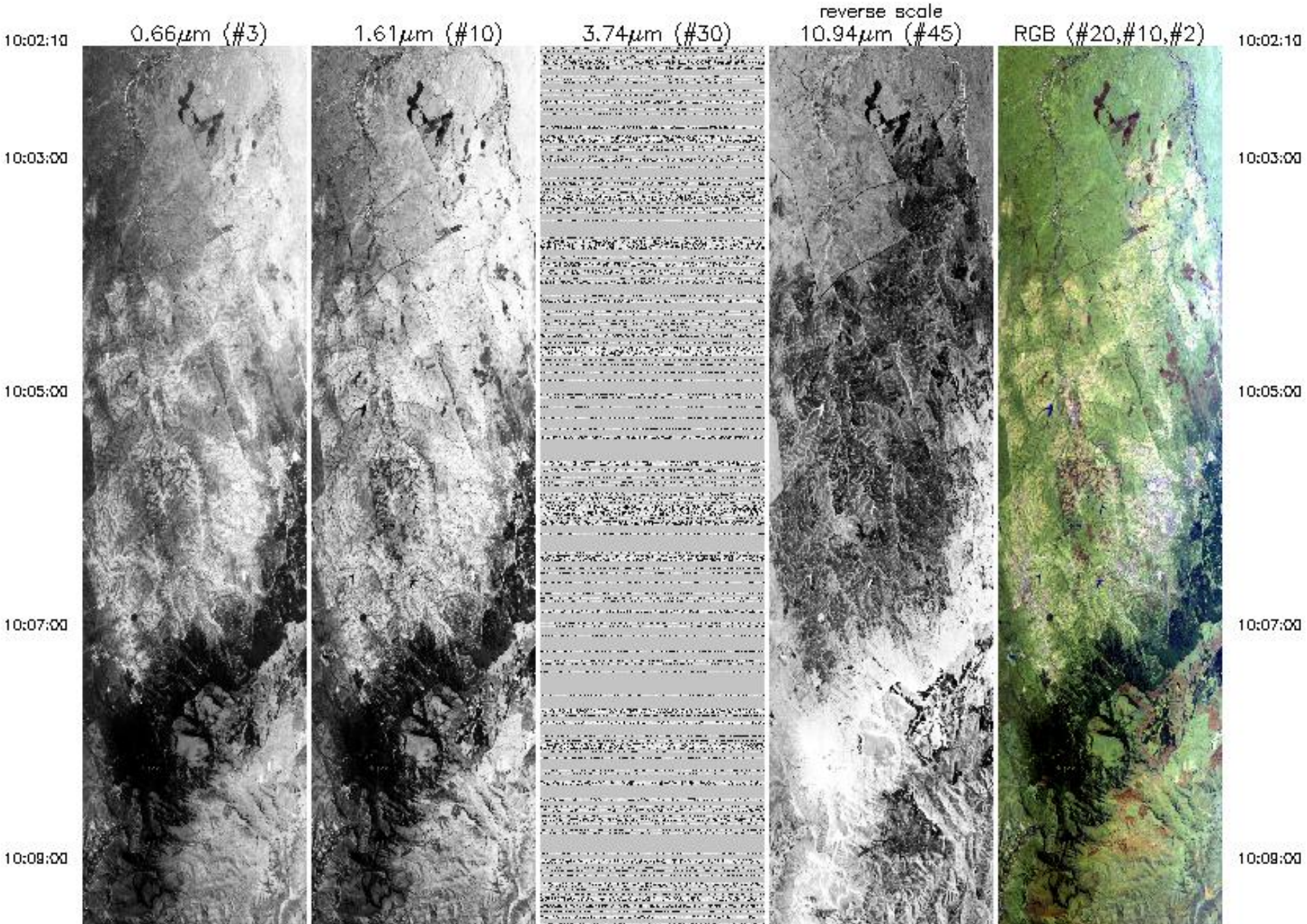
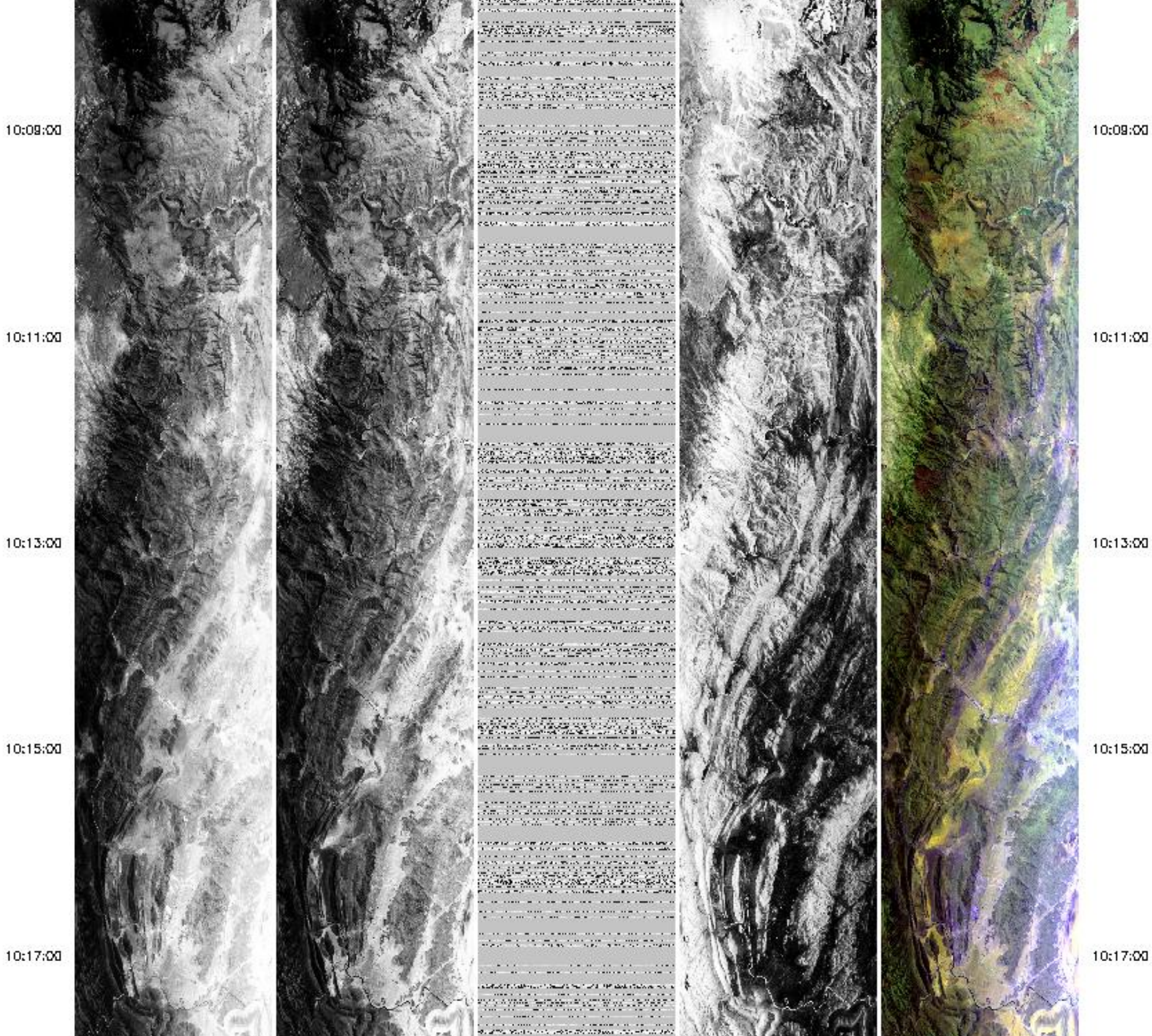
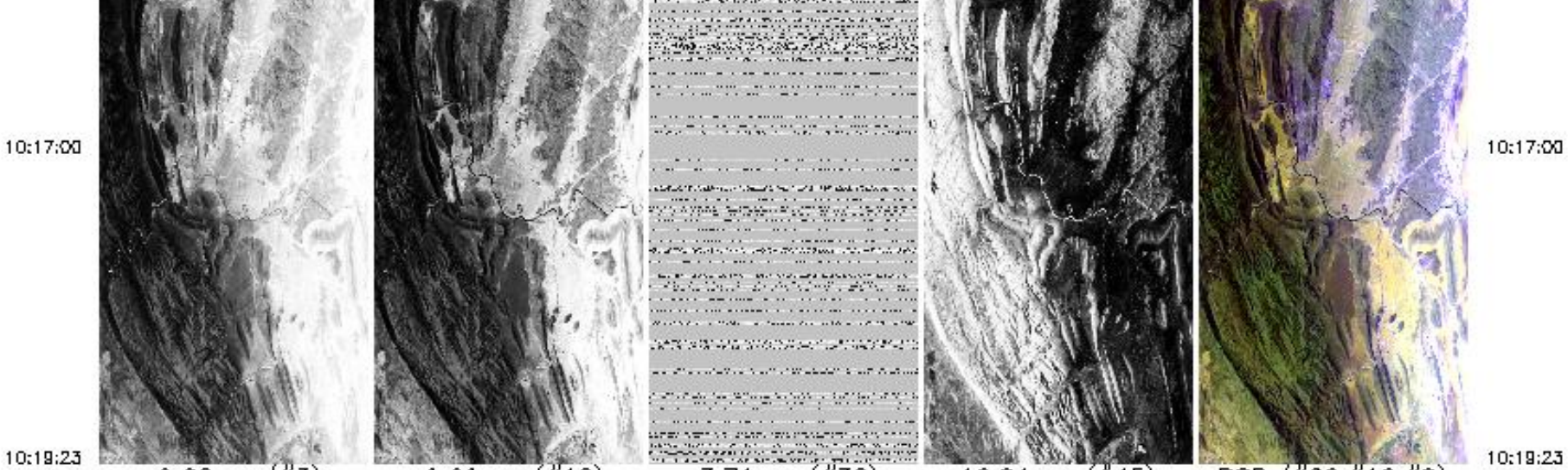
South Africa
Flight #00–147 Track #9

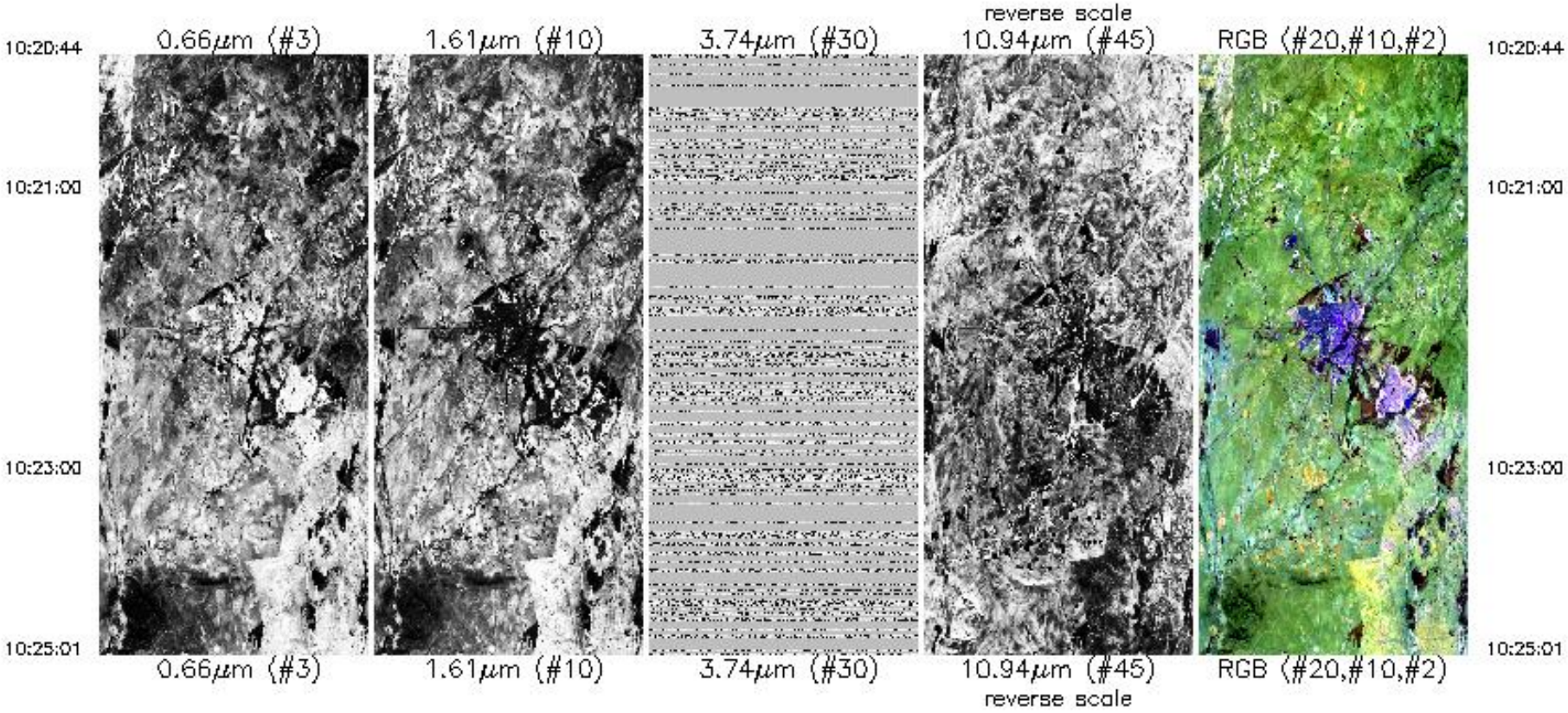



10:09:00
10:11:00
10:13:00
10:15:00
10:17:00
10:09:00
10:11:00
10:13:00
10:15:00
10:17:00




Upper Left Lat, Lon = −24.7°, 31.6°
Lower Right Lat, Lon = −24.4°, 29.5°
Aircraft Heading = 295.4°
Solar Zenith = 38.0°
GPS Altitude = 20623. m (MSL)

MODIS Airborne Simulator Browse Imagery
SAFARI 2000 Campaign – 17 Aug 2000
South Africa
Flight #00–147 Track #10




Upper Left Lat, Lon = −24.1°, 29.6°
Lower Right Lat, Lon = −23.6°, 29.3°
Aircraft Heading = 0.5°
Solar Zenith = 37.5°
GPS Altitude = 20627. m (MSL)