

## SAFARI 2000 MAS Flight 00155

The SAFARI 2000 MAS contains 146 GB of data. Individual HDF files may exceed the size of a CD, and are best written to DVD. You may use this automated interface to order data from selected tracks (flight segments). If you require large portions of this data, we recommend that you contact us by email or phone and make special arrangements.

### Flight #00-155

#### RBG Images

[Click Image](#)

Track #10



R: 11.99 microns  
G: 8.54 microns  
B: 4.54 microns

Track #11

#### Summary Information

Date: **September 01, 2000**

ER-2 Flight Number: **00-155**

Location: **Northern South Africa and Mozambique**

Principal Investigator: **Dr. Michael King (NASA GSFC)**

Flight Scientist: **Chris Moeller (UW CIMSS)**

Additional Sensors: **AirMISR, CLS, LAS, MAS, MOPITT-A, S-HIS, SSFR** (see [Instrument Status](#) below)

#### 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**

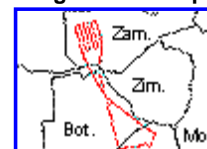
#### Level-1B Browse Imagery

Straight Line Flight Tracks: **16 processed**

Scanlines Processed: **96868**

[Solar Azimuth and Zenith Angles](#)

#### Flight Track Map

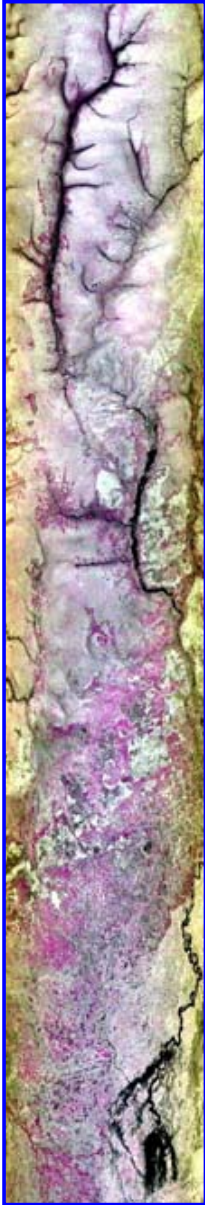


[Click to enlarge](#)

#### 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 (msl)
	<a href="#">01</a>	16:55-17:22	307	22.35-20.53	28.68-26.06	9999	19187
	<a href="#">02</a>	17:22-17:27	308	20.53-20.15	26.06-25.53	2030	20121
	<a href="#">03</a>	17:27-17:53	329	20.12-17.56	25.50-23.93	9586	19994
	<a href="#">04</a>	17:53-18:05	339	17.55-16.25	23.93-23.41	4572	19918
	<a href="#">05</a>	18:06-18:24	346	16.24-14.22	23.41-22.91	6883	19966
	<a href="#">06</a>	18:28-18:47	165	14.16-16.14	23.27-23.78	6850	19971
	<a href="#">07</a>	18:51-19:09	350	16.02-14.05	24.11-23.61	6784	19948
	<a href="#">08</a>	19:13-19:32	164	13.98-15.96	23.95-24.46	6817	19950
	<a href="#">09</a>	19:36-19:54	350	15.89-13.90	24.78-24.27	6878	20007
	<a href="#">10</a>	19:59-20:16	164	13.85-15.75	24.65-25.14	6527	19862
	<a href="#">11</a>	20:17-20:32	189	15.81-17.55	25.14-24.92	5777	19979
	<a href="#">12</a>	20:33-20:41	177	17.57-18.47	24.92-25.00	2992	20016
	<a href="#">13</a>	20:41-21:07	168	18.48-21.34	25.00-25.76	9999	19983
	<a href="#">14</a>	21:07-21:32	165	21.34-24.04	25.76-26.50	9294	19986
	<a href="#">15</a>	21:34-21:35	103	24.12-24.16	26.60-26.82	686	20024



R: 11.99 microns  
G: 8.54 microns  
B: 4.54 microns

	<a href="#">16</a>	21:36-21:39	87	24.16-24.12	26.85-27.23	1194	20028
<a href="#">All images in sequence</a>							

### ER-2 Flight Log

Author: **Chris Moeller**  
Mission Scientist: **Dr. Michael King**  
ER-2 Pilot: **Jim Barrilleaux**  
Takeoff: **01Sep2000 0000 UTC**  
Landing: **01Sep2000 0000 UTC**  
Duration: **05:45:00**

#### Objective:

Map evening fires in Zambia with MAS and under fly Terra for MODIS L1B and cloud mask validation in nighttime conditions.

#### Key Flight Legs:

The ER-2 flew northwest to Zambia in clear sky on transit to 18 minute leg (220 km) centered Mongu airport (15°15'S, 23°09'E) where MPL is operating. Over flew MPL at 0815 UTC providing collocated up and down looking lidar measurements. Mongu flight line aligned at 346° to parallel the Terra orbital track (21:15 UTC overpass). ER-2 proceeded to fly five additional parallel 18 minute legs east of Mongu line, spaced for contiguous MAS coverage (about 20 km separation) to map evening burning in Zambia. Many fires, some linear, some circular observed by pilot. ER-2 then flew around Zimbabwean air space to align on track parallel to Terra orbital track for transit back to base. Clear skies at 21:15 UTC for Terra overpass (22°05'S, 25°58'E; 1.3° view angle) and during entire flight.

No AERONET sites were overflown during this mission.

#### Pilot Report:

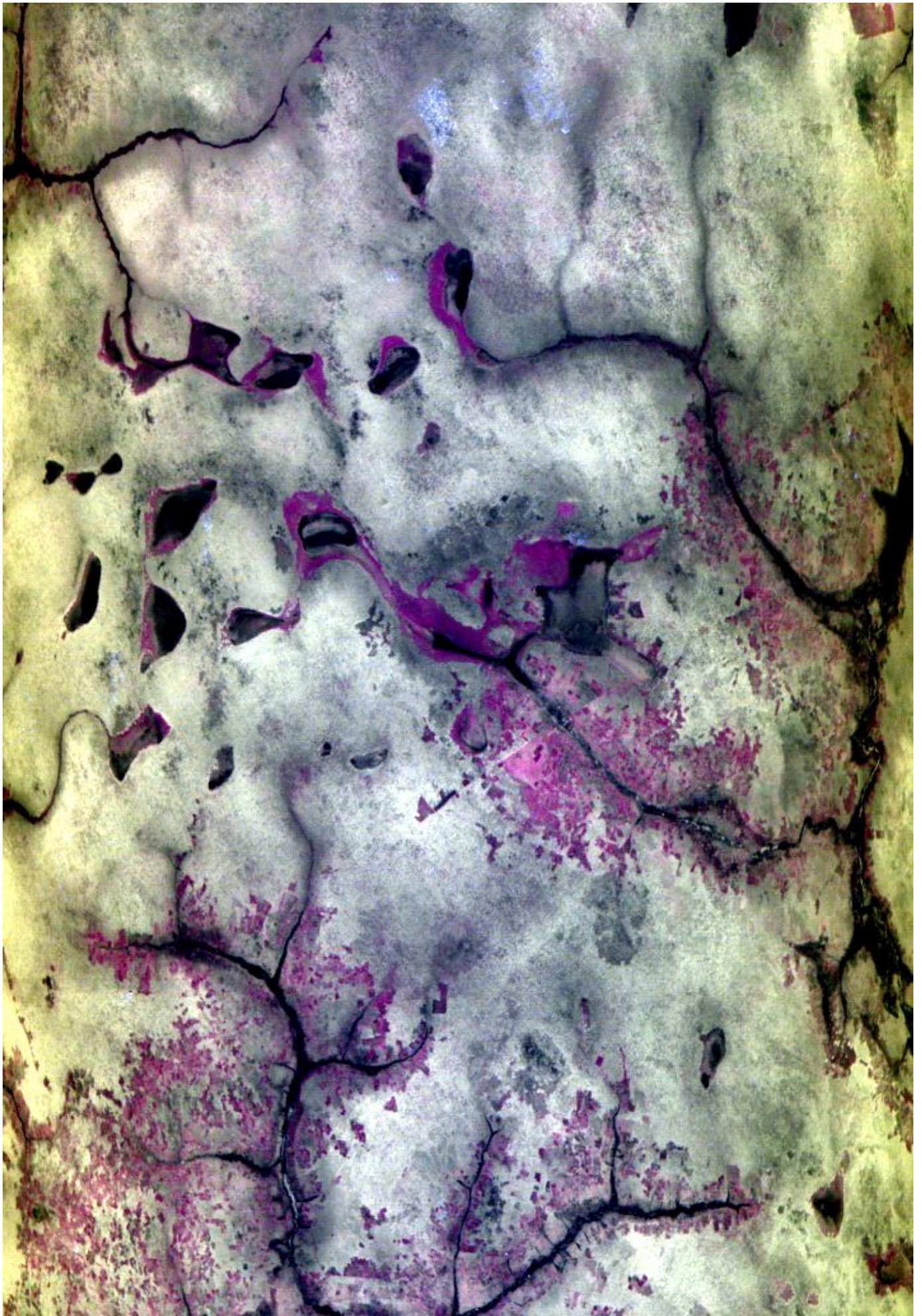
The skies were cloud free and the visibility good. The pilot noted large fire at 17:47:10 UTC (18:13S, 24:19E).

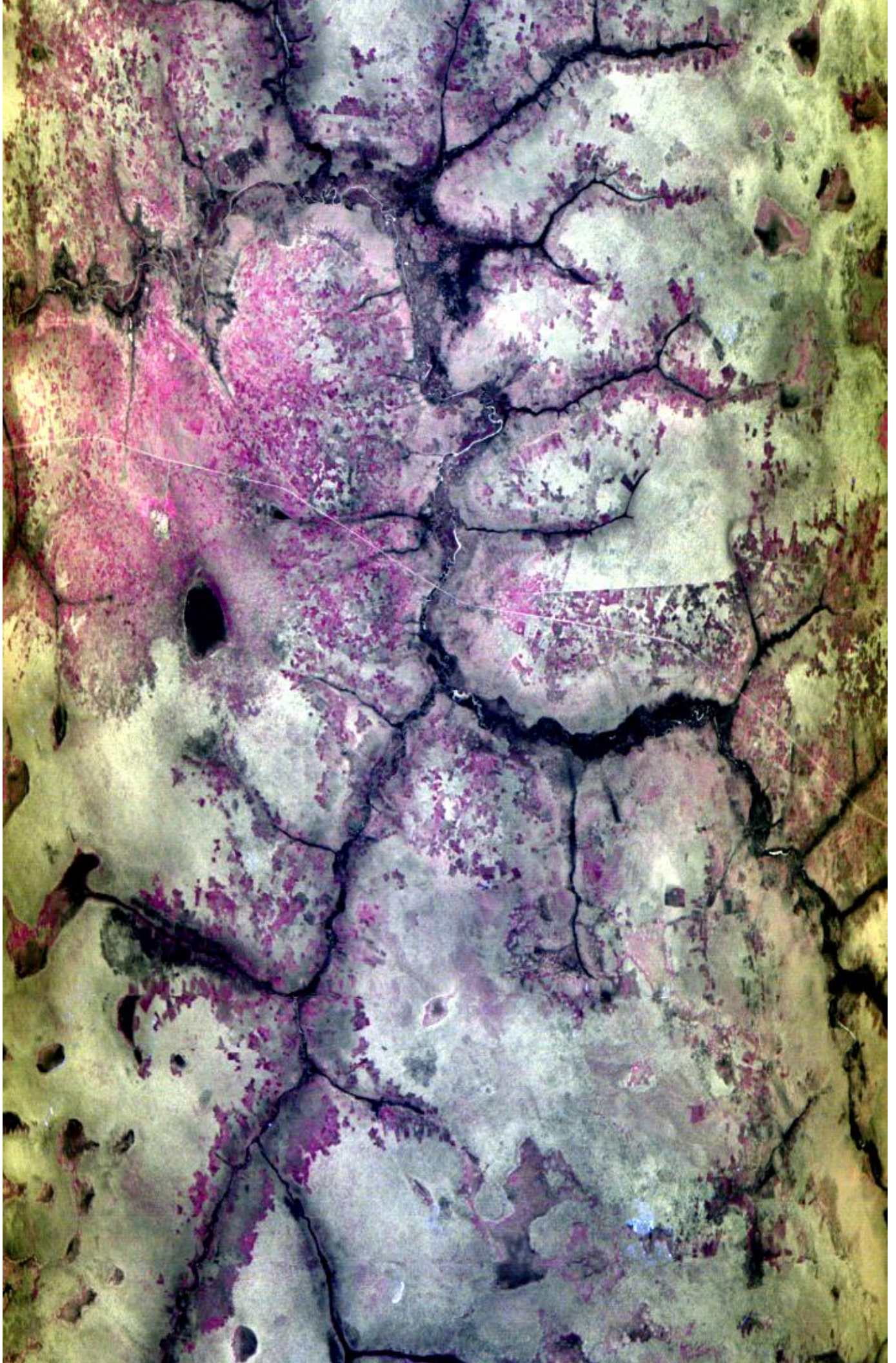
#### Meteorology:

A cold front runs southeastwards from the Transkei coast with the south Atlantic high pressure cell ridging across the southern parts of the sub continent. A cell of high pressure is centered over the southern parts of Zimbabwe and is controlling the circulation over the northern provinces of South Africa where it remains hot and dry. Cloudy areas around the coast from the southwestern Cape to Durban. Cloudy areas over the southern and southwestern interior. Fog along the Namibian coast. Fine elsewhere with a high fire danger rating over the Northern Province.

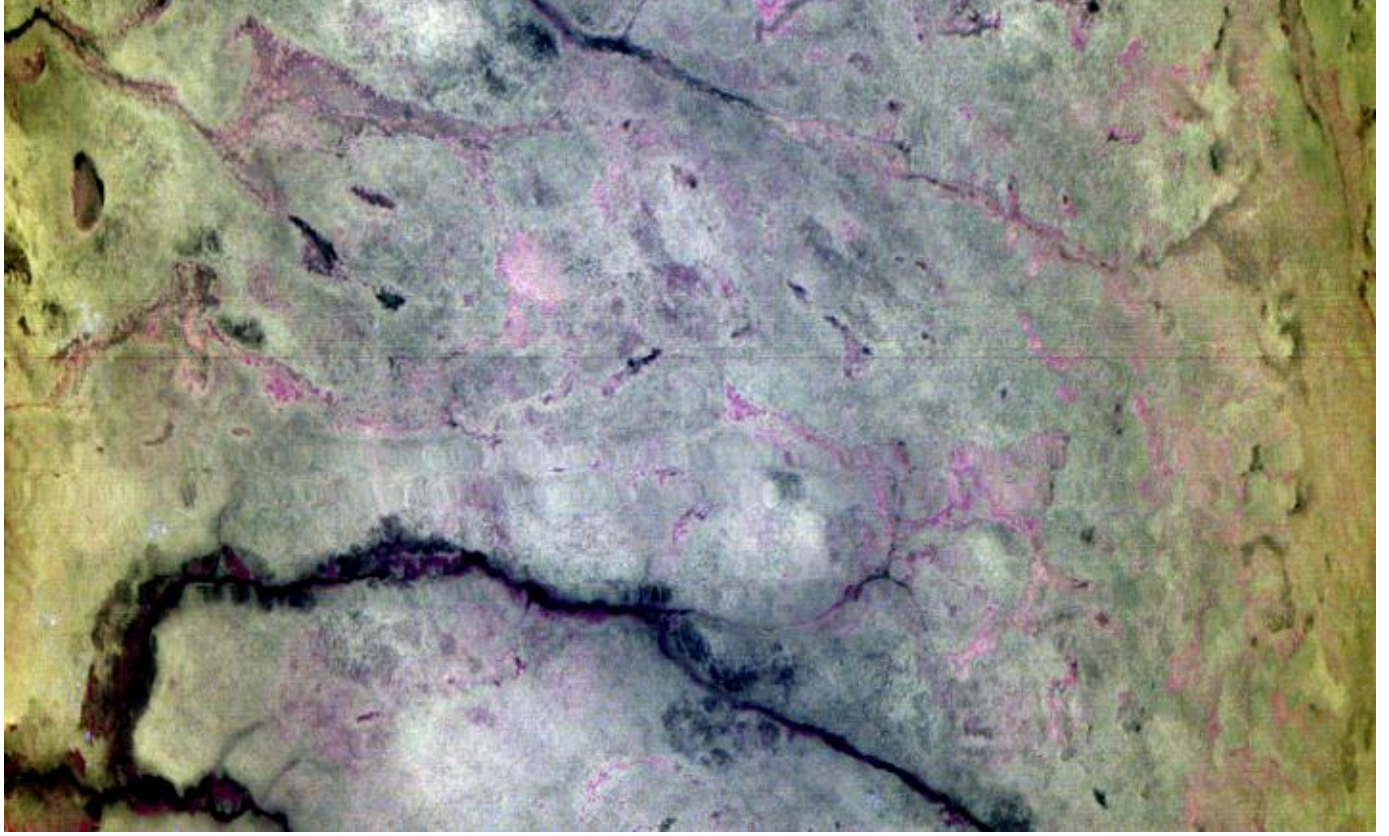
#### Instrument Status:

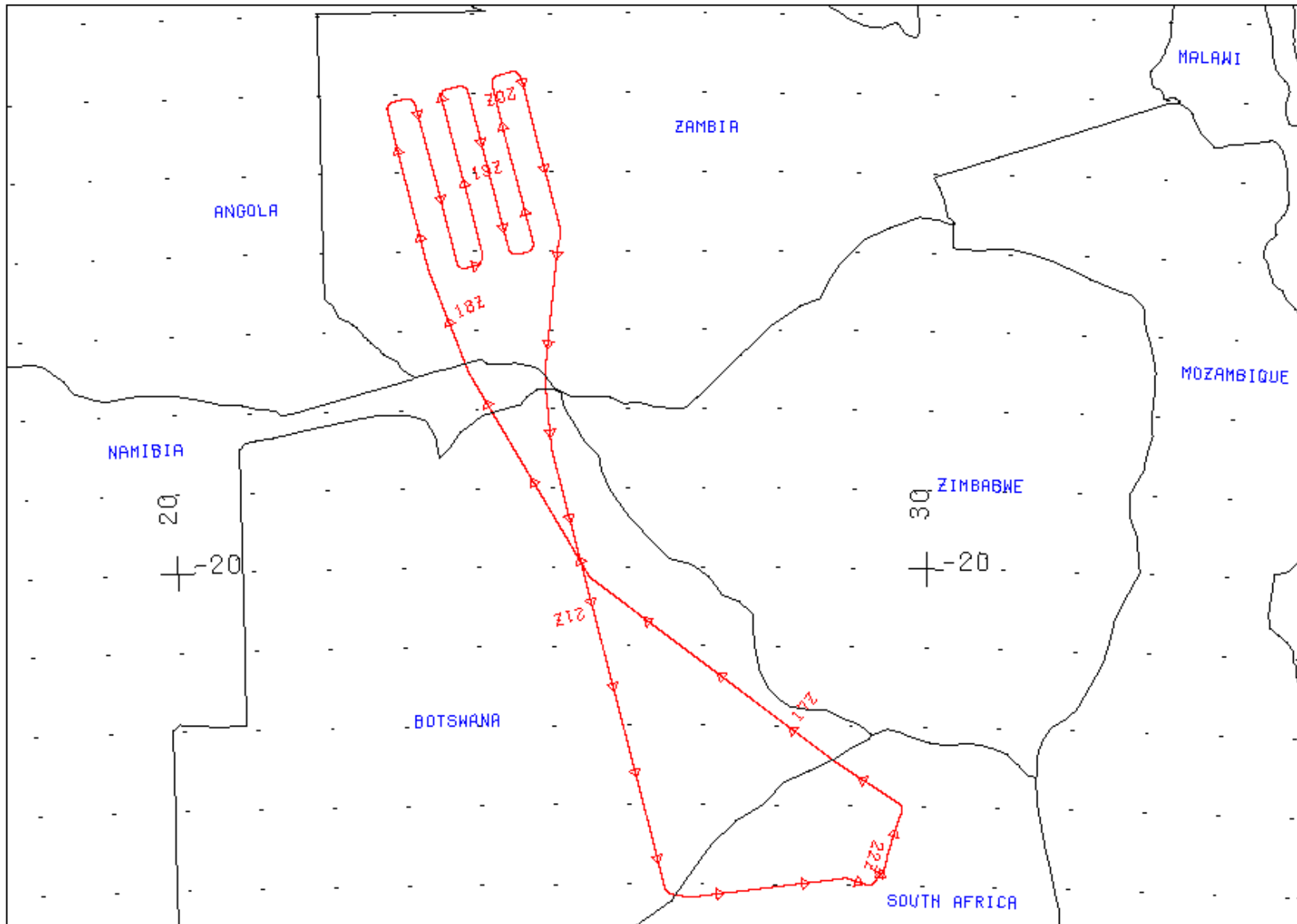
- AirMISR (Airborne Multi-angle Imaging Spectroradiometer): Not on plane; being repaired
- CLS (Cloud Lidar System): Lidar worked properly, but navigation data not recorded
- LAS (Leonardo Airborne Simulator): not operated (ballast)
- MAS (MODIS Airborne Simulator): worked well
- MOPITT-A (MOPITT Airborne Simulator): Worked well
- S-HIS (High-resolution Interferometer Sounder): operated in nadir mode; worked well
- SSFR (Solar Spectral Flux Radiometer): Worked well











FLIGHT 00-155

1 SEPTEMBER 2000

A/C 809

SAFARI

FLIGHT 00-155

1 SEPTEMBER 2000

A/C 809

SAFARI

SOUTH AFRICA



50 MAS Configuration for 00-155 01 Sep 2000 Night Flight (Botswana)

01	01	16	0	0.037414	0.0000	0.452	0.472	0.493	0.100	1981.92
02	02	16	0	0.040191	0.0000	0.534	0.554	0.577	0.100	1857.88
03	03	16	0	0.027289	0.0000	0.635	0.658	0.689	0.100	1549.55
04	04	16	0	0.031968	0.0000	0.687	0.708	0.731	0.100	1386.41
05	05	16	0	0.024332	0.0000	0.729	0.750	0.773	0.100	1260.07
06	06	16	0	0.025099	0.0000	0.810	0.830	0.855	0.100	1053.65
07	07	16	0	0.024992	0.0000	0.853	0.874	0.895	0.100	962.82
08	08	16	0	0.020067	0.0000	0.893	0.912	0.934	0.100	869.28
09	09	16	0	0.021658	0.0000	0.933	0.954	0.974	0.100	784.92
10	10	16	0	0.003459	0.0000	1.586	1.612	1.640	0.100	244.16
11	11	16	0	0.006410	0.0000	1.642	1.668	1.695	0.010	227.32
12	12	16	0	0.002987	0.0000	1.698	1.722	1.749	0.010	201.29
13	13	16	0	0.002953	0.0000	1.751	1.776	1.801	0.010	176.56
14	14	16	0	0.003039	0.0000	1.805	1.830	1.855	0.010	156.28
15	15	16	0	0.002905	0.0000	1.855	1.880	1.906	0.010	139.66
16	16	16	0	0.002759	0.0000	1.906	1.932	1.956	0.100	131.21
17	17	16	0	0.002500	0.0000	1.956	1.982	2.006	0.010	122.76
18	18	16	0	0.002444	0.0000	2.006	2.032	2.057	0.010	109.78
19	19	16	0	0.002361	0.0000	2.058	2.082	2.107	0.010	98.67
20	20	16	0	0.002399	0.0000	2.107	2.132	2.157	0.010	86.28
21	21	16	0	0.005048	0.0000	2.156	2.180	2.205	0.010	76.85
22	22	16	0	0.002744	0.0000	2.205	2.230	2.255	0.010	73.57
23	23	16	0	0.002817	0.0000	2.255	2.280	2.305	0.010	68.38
24	24	16	0	0.002644	0.0000	2.306	2.330	2.354	0.010	58.53
25	25	16	0	0.002583	0.0000	2.355	2.380	2.404	0.010	57.88
26	26	16	1	0.956000	0.0000	3.105	3.180	3.261	0.001	20.15
27	27	16	1	0.960000	0.0000	3.250	3.325	3.401	0.001	17.66
28	28	16	1	0.961000	0.0000	3.405	3.475	3.559	0.001	15.05
29	29	16	1	0.949000	0.0000	3.556	3.640	3.718	0.001	13.06
30	30	16	1	0.945000	0.0000	3.702	3.770	3.847	0.001	11.39
31	31	16	1	0.942000	0.0000	3.857	3.940	4.023	0.001	9.98
32	32	16	1	0.940000	0.0000	4.014	4.095	4.183	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	4.471	4.550	4.632	0.001	5.63
36	36	16	1	0.934000	0.0000	4.622	4.700	4.784	0.001	4.87
37	37	16	1	0.933000	0.0000	4.773	4.860	4.937	0.001	4.28

38	38	16	1	0.932000	0.0000	4.917	4.990	5.084	0.001	3.80
39	39	16	1	0.931000	0.0000	5.055	5.165	5.235	0.001	3.39
40	40	16	1	0.930000	0.0000	5.215	5.315	5.371	0.001	3.03
41	41	16	1	0.932000	0.0000	5.342	5.380	5.421	0.001	2.80
42	42	16	1	0.966000	0.0000	8.330	8.564	8.759	0.010	0.45
43	43	16	1	0.963000	0.0000	9.436	9.665	9.928	0.010	0.28
44	44	16	1	0.960000	0.0000	10.218	10.474	10.711	0.010	0.20
45	45	16	1	0.957000	0.0000	10.694	10.943	11.209	0.010	0.17
46	46	16	1	0.947000	0.0000	11.684	11.953	12.208	0.010	0.12
47	47	16	1	0.943000	0.0000	12.583	12.803	13.035	0.010	0.09
48	48	16	1	0.948000	0.0000	12.939	13.193	13.446	0.010	0.08
49	49	16	1	0.939000	0.0000	13.425	13.712	14.035	0.010	0.07
50	50	16	1	0.944000	0.0000	13.953	14.193	14.403	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/meter<sup>2</sup>/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

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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/Oct_00/
SRF_FTP	ftp://asapdata/mas/srf/Oct_00/
NavDataSource	ER2 navigation recorder
NavDataPath	/nav/2000/er2/00-155
TbackBand	45, 47, 31, 273.0
GranuleVersion	1.0.0
MetadataVersion	1.0.0

-----  
 -----  
 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

MODIS AIRBORNE SIMULATOR (MAS) FLIGHT LINE  
 INFORMATION FOR 01 Sep 2000  
 NASA FLIGHT NUMBER 00-155

START OF FLIGHT LINE					END OF FLIGHT				
LINE	FLIGHT DATA								
LINE	TIME	LAT	LON	SOLAR	TIME	LAT	LON		
SOLAR	SCAN	HEAD	ALT	ZEN	AZIM	HH:MM:SS	DEG	DEG	
ZEN	AZIM	LINES	DEG	M (GPS)					
1	16:55:21	-22.355	28.677	104.6	272.7	17:22:07	-20.534	26.061	108.3
271.8	9999	307.2	19187						
2	17:22:07	-20.534	26.061	108.3	271.8	17:27:33	-20.153	25.529	109.1
271.7	2030	308.2	20121						
3	17:27:58	-20.120	25.495	109.1	271.6	17:53:37	-17.562	23.934	113.7
271.1	9586	329.1	19994						
4	17:53:45	-17.549	23.927	113.7	271.1	18:05:59	-16.247	23.412	116.1
271.0	4572	338.7	19918						
5	18:06:01	-16.242	23.410	116.1	271.0	18:24:27	-14.215	22.906	120.0
271.0	6883	345.5	19966						
6	18:28:58	-14.162	23.271	121.5	270.7	18:47:18	-16.142	23.780	126.4
268.0	6850	165.0	19971						
7	18:51:39	-16.019	24.110	127.7	267.7	19:09:48	-14.053	23.607	131.7
268.1	6784	350.0	19948						
8	19:13:56	-13.980	23.949	133.0	267.8	19:32:10	-15.964	24.458	137.8
264.1	6817	164.1	19950						
9	19:36:13	-15.888	24.776	139.1	263.7	19:54:37	-13.905	24.268	143.2
264.6	6878	349.6	20007						
10	19:59:29	-13.848	24.648	144.7	264.1	20:16:57	-15.748	25.139	149.1
258.9	6527	163.7	19862						
11	20:17:28	-15.807	25.138	149.2	258.7	20:32:55	-17.550	24.920	152.2
253.1	5777	188.7	19979						
12	20:33:06	-17.571	24.919	152.2	253.0	20:41:06	-18.469	24.997	153.8

249.5	2992	176.9	20016						
13	20:41:13	-18.482	24.998	153.8	249.4	21:07:58	-21.338	25.759	158.7
233.5	9999	167.8	19983						
14	21:07:59	-21.338	25.759	158.7	233.5	21:32:51	-24.040	26.503	161.1
212.9	9294	165.3	19986						
15	21:34:00	-24.125	26.599	161.2	211.7	21:35:50	-24.161	26.815	161.5
209.8	686	103.0	20024						
16	21:36:08	-24.164	26.852	161.6	209.5	21:39:20	-24.122	27.231	162.1
206.2	1194	86.5	20028						

NUMBER OF FILES FOR THIS FLIGHT = 16  
 TOTAL NUMBER OF SCAN LINES = 96868  
 DATE THESE FILES WERE PROCESSED = 19-Sep-2002  
 DATE THIS LIST WAS CREATED = Mon Sep 23

12:27:34 PDT 2002

GRANULE VERSION = 2

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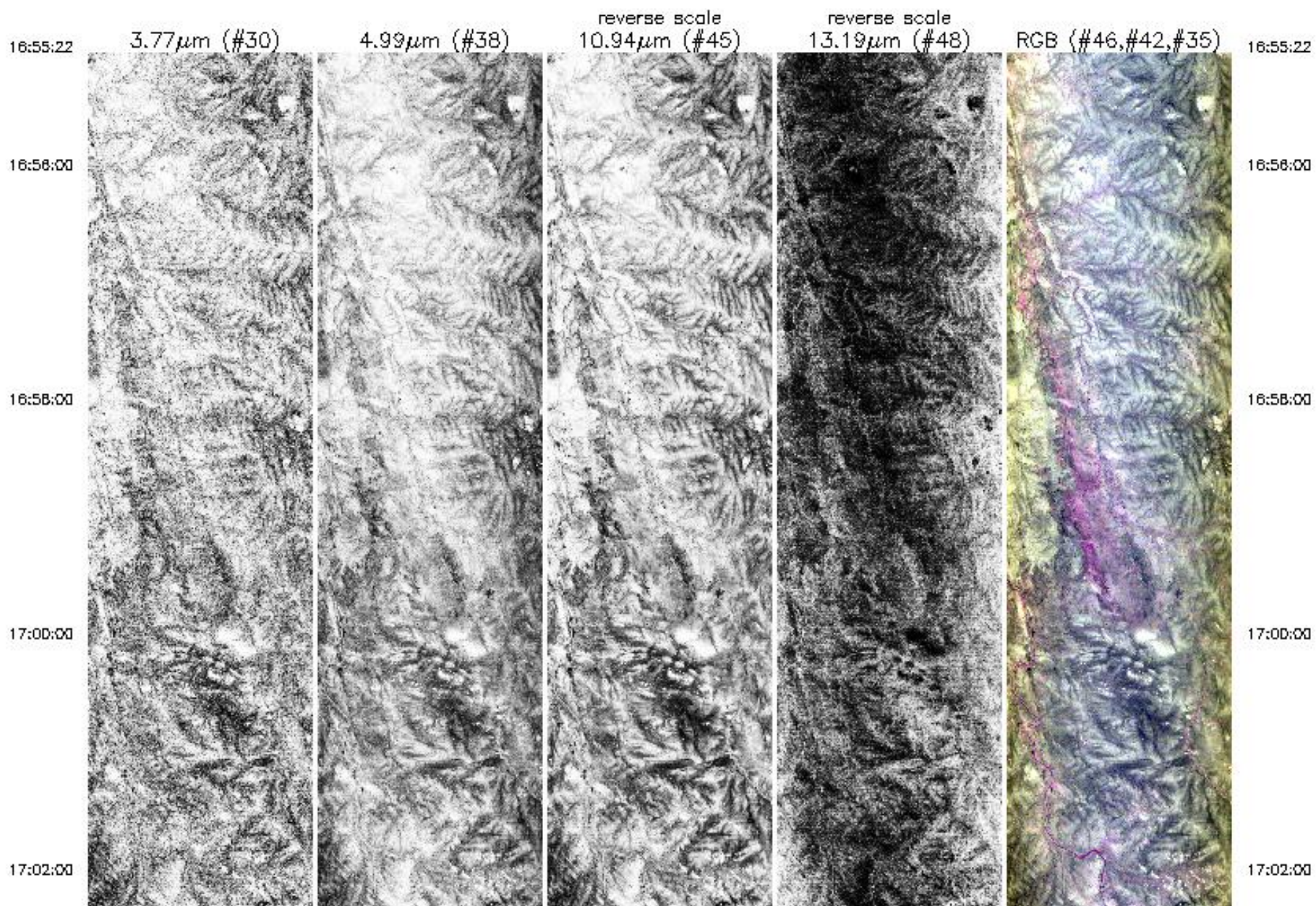
GLOBAL ATTRIBUTES

Attribute Name	Description
-----	-----
CreationDate	19-Sep-2002 19:00:03
AircraftPlatform	NASA ER-2 (809)
NavFormatCode	Format (A-1)
LocationCode	Inertial (INU)
AltitudeCode	Inertial (INU)
NavDataSource	ER2 navigation recorder
NavDataPath	/nav/2000/er2/00-155
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	00-155
FlightDate	01 Sep 2000

SiteLineRun	void
GeographicArea	Botswana
SRF_FTP	ftp://asapdata/mas/srf/Oct_00/
SRF_dataset	/rarray/calibrat/mas/srf/Oct_00/
FlightLineNumber	1
TotalFlightLines	16
DataUsersGuideSource	<a href="http://ltpwww.gsfc.nasa.gov/MAS/">http://ltpwww.gsfc.nasa.gov/MAS/</a>
SoftwareVersion	Level-1b Version 10.1.1 UR
CalibrationVersion	Version 1.0 Calibration
data_set	MAS SAFARI 2000
day_night_flag	N
granule_version	2
metadata_version	2.0.0
data_quality	Good
Other_Aircraft_Sensors	AirMISR, CLS, MOPPIT-A, Leonardo
Principal_Investigator	King
lat_UL	-22.23287
lon_UL	28.77297
lat_UR	-22.47600
lon_UR	28.58296
lat_LL	-20.40280
lon_LL	26.17055
lat_LR	-20.66246
lon_LR	25.95032
begin_date	20000831 165522
end_date	20000831 172208
RunTime	714,480 ms, or 71 ms/scanline
CompletionDate	19-Sep-2002 19:19:40
producer_granule_id	
MASL1B_00155_01_20000831_1655_1722_V02.hdf	

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MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign – 01 Sep 2000  
Botswana  
Flight #00-155 Track #1





17:02:00

17:04:00

17:06:00

17:08:00

17:10:00



17:02:00

17:04:00

17:06:00

17:08:00

17:10:00

17:10:00



17:12:00



17:14:00



17:16:00



17:18:00



17:10:00

17:12:00

17:14:00

17:16:00

17:18:00

17:18:00



3.77  $\mu\text{m}$  (#30)

17:20:00



4.99  $\mu\text{m}$  (#38)



10.94  $\mu\text{m}$  (#45)  
reverse scale



13.19  $\mu\text{m}$  (#48)  
reverse scale



RGB (#46,#42,#35)

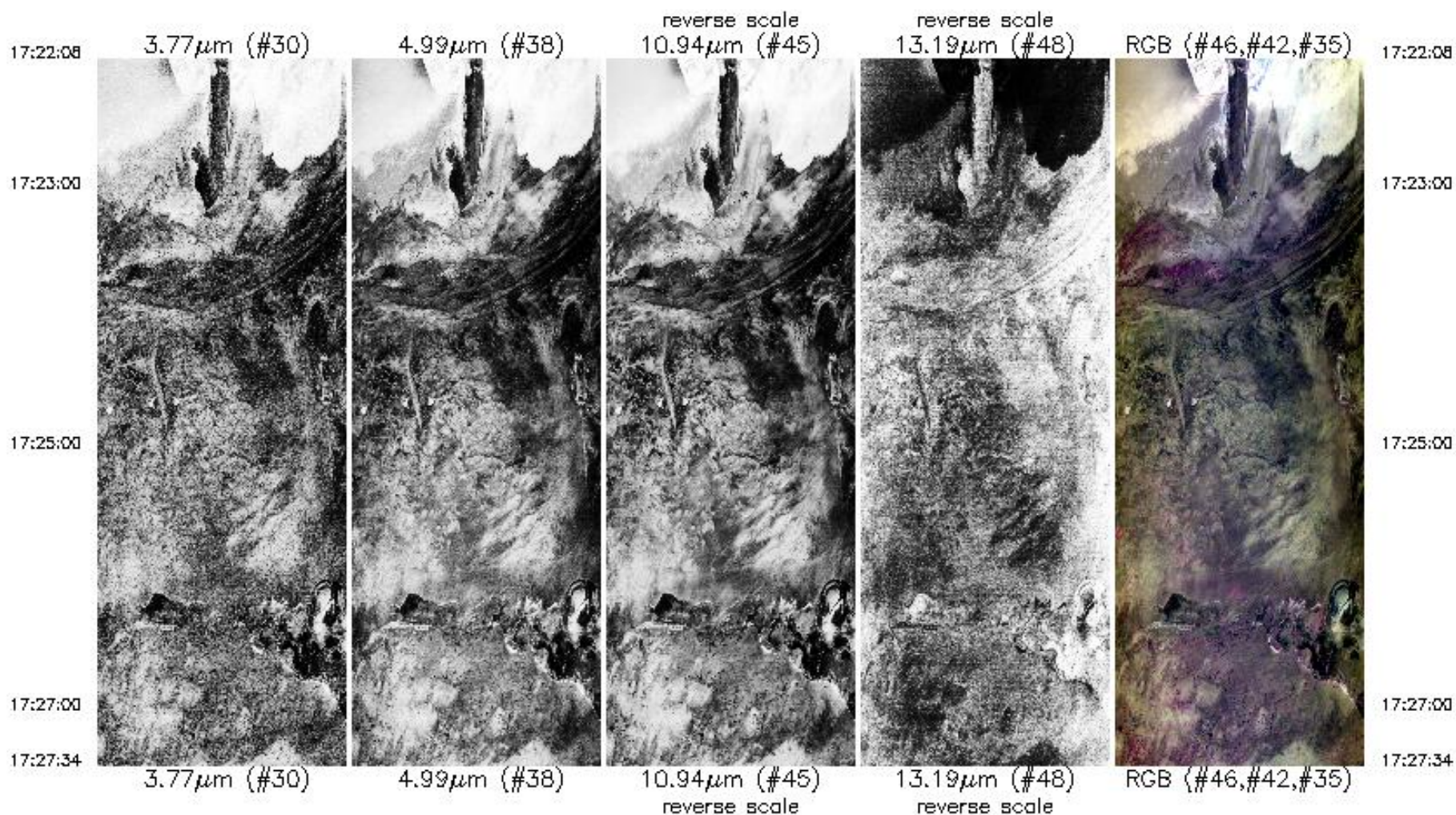
17:18:00

17:20:00

17:22:08

Upper Left Lat, Lon =  $-22.2^\circ$ ,  $28.8^\circ$   
Lower Right Lat, Lon =  $-20.7^\circ$ ,  $26.0^\circ$   
Aircraft Heading =  $305.9^\circ$   
Solar Zenith =  $104.7^\circ$   
GPS Altitude = 19596. m (MSL)

MODIS Airborne Simulator Browse Imagery  
 SAFARI 2000 Campaign – 01 Sep 2000  
 Botswana  
 Flight #00-155 Track #2



Upper Left Lat, Lon =  $-20.4^{\circ}$ ,  $26.2^{\circ}$   
 Lower Right Lat, Lon =  $-20.3^{\circ}$ ,  $25.4^{\circ}$   
 Aircraft Heading =  $308.5^{\circ}$   
 Solar Zenith =  $108.4^{\circ}$   
 GPS Altitude = 20114. m (MSL)

3.77 $\mu$ m (#30)

4.99 $\mu$ m (#38)

10.94 $\mu$ m (#45)  
reverse scale

13.19 $\mu$ m (#48)  
reverse scale

RGB (#46,#42,#35)

Upper Left Lat, Lon = -20.4°, 26.2°

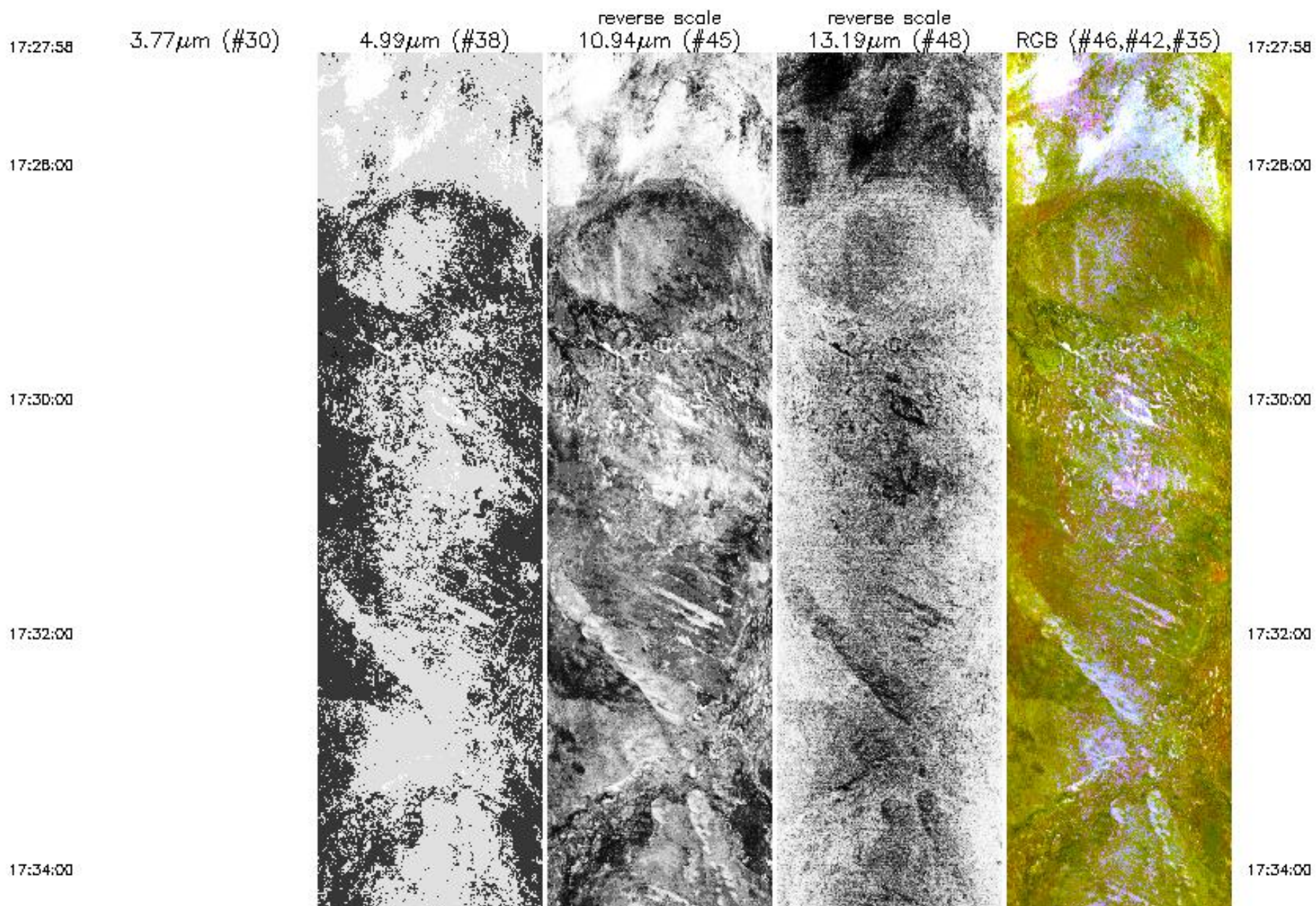
Lower Right Lat, Lon = -20.3°, 25.4°

Aircraft Heading = 308.5°

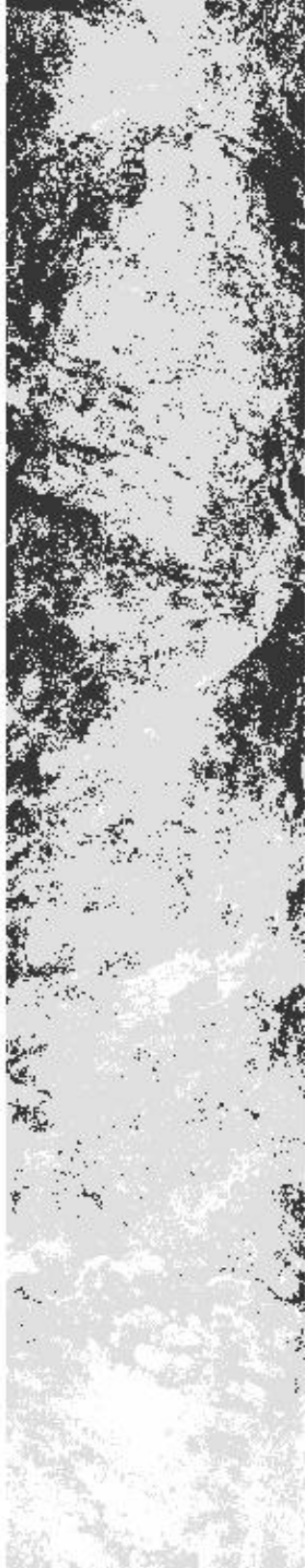
Solar Zenith = 108.4°

GPS Altitude = 20114. m (MSL)

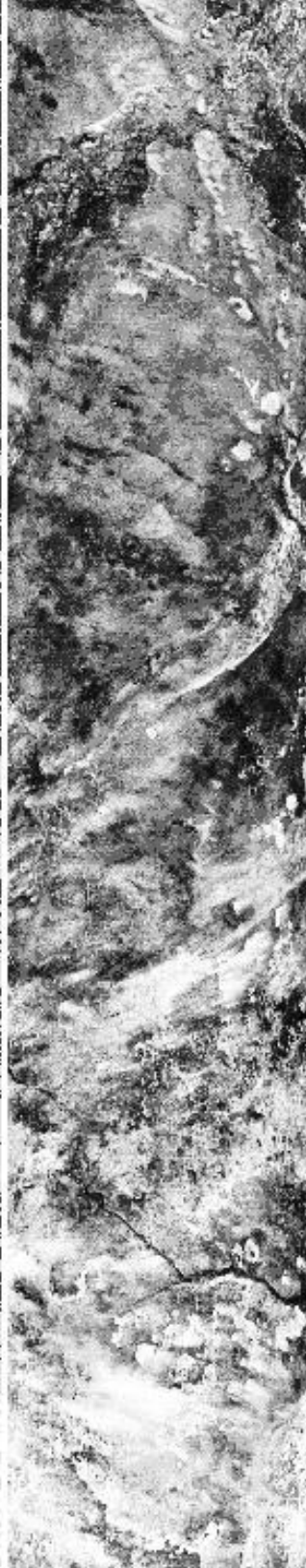
MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign – 01 Sep 2000  
Botswana  
Flight #00-155 Track #3



17:34:00



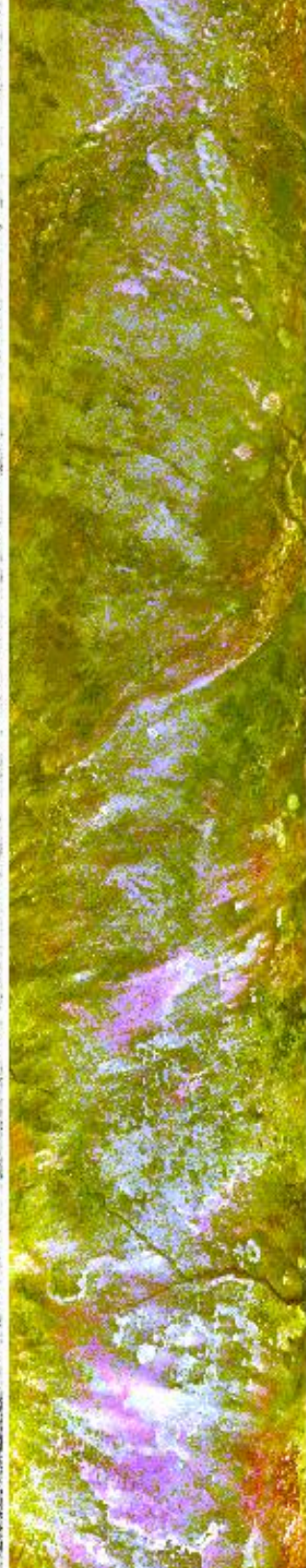
17:36:00



17:38:00



17:40:00



17:42:00

17:34:00

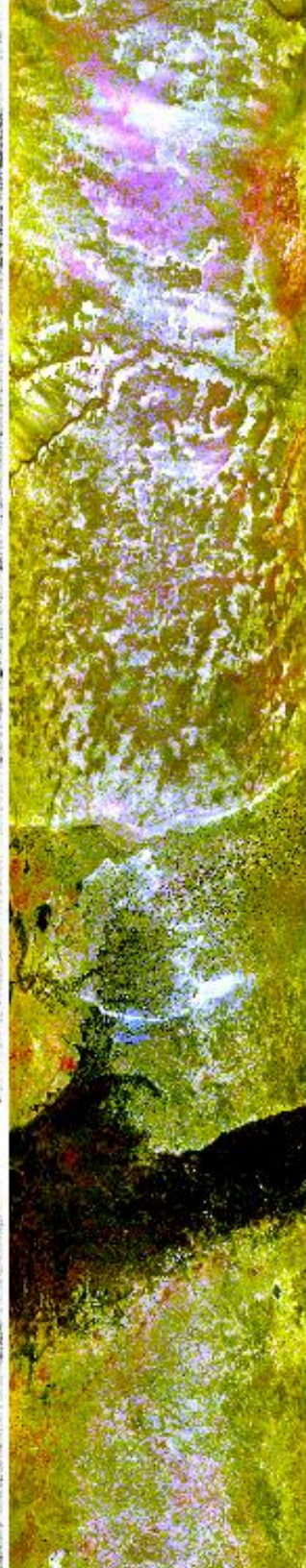
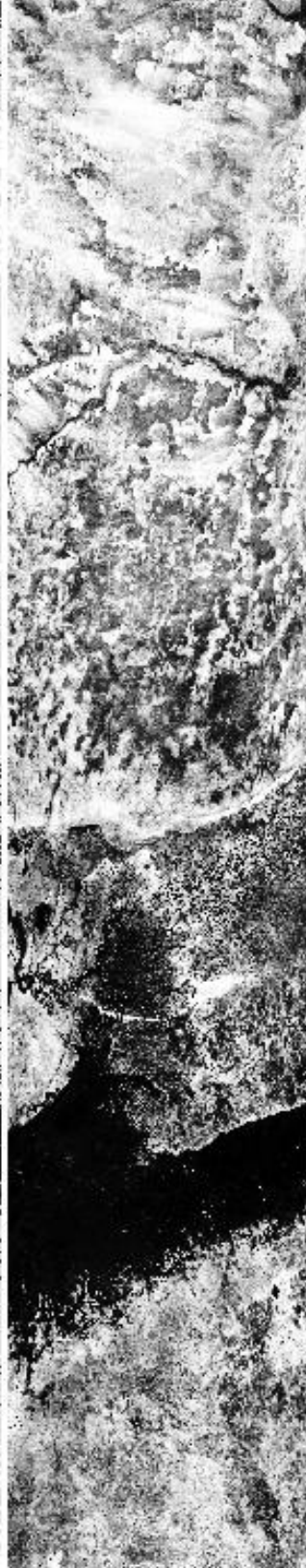
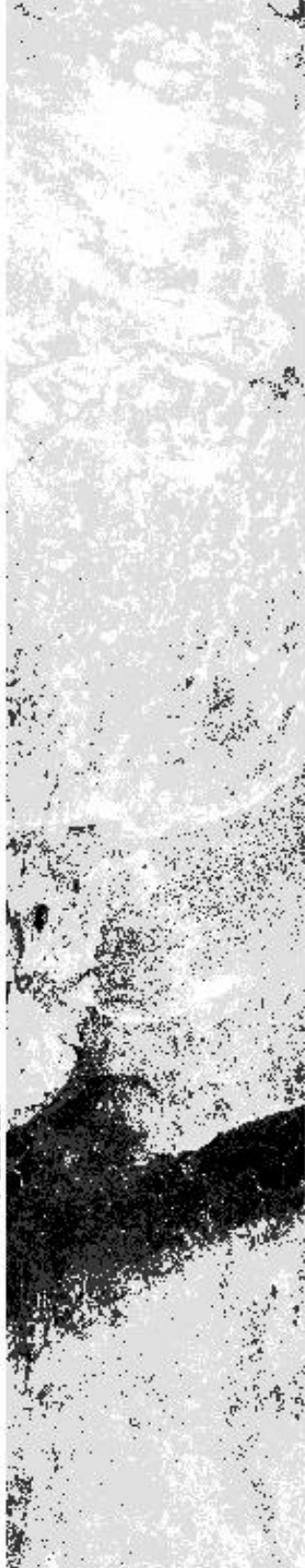
17:36:00

17:38:00

17:40:00

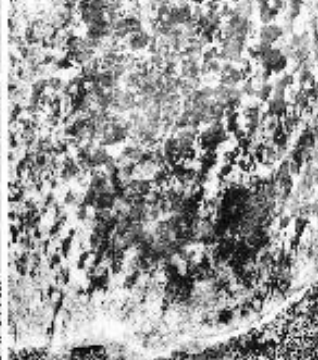
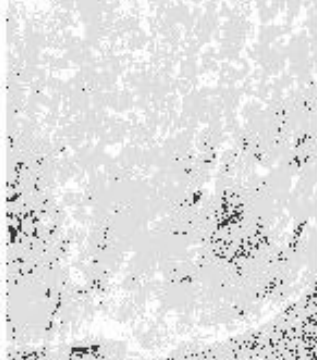
17:42:00

17:42:00



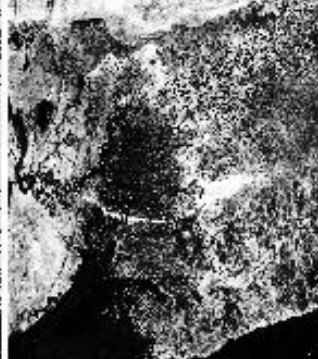
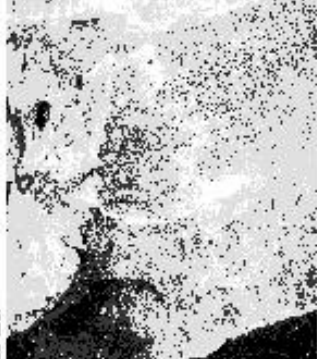
17:42:00

17:44:00



17:44:00

17:48:00



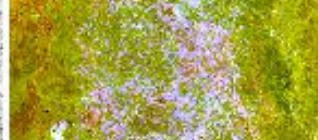
17:48:00

17:48:00



17:48:00

17:50:00



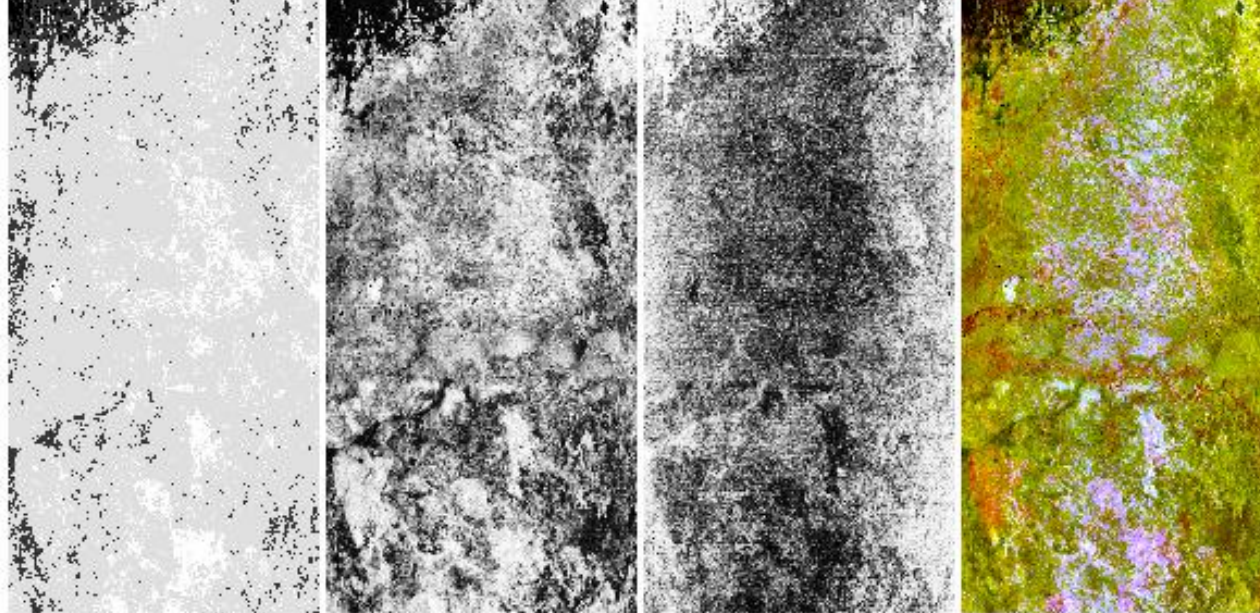
17:50:00



17:50:00

17:52:00

17:53:38



17:50:00

17:52:00

17:53:38

3.77 $\mu$ m (#30)

4.99 $\mu$ m (#38)

10.94 $\mu$ m (#45)  
reverse scale

13.19 $\mu$ m (#48)  
reverse scale

RGB (#46,#42,#35)

Upper Left Lat, Lon = -20.0°, 25.6°

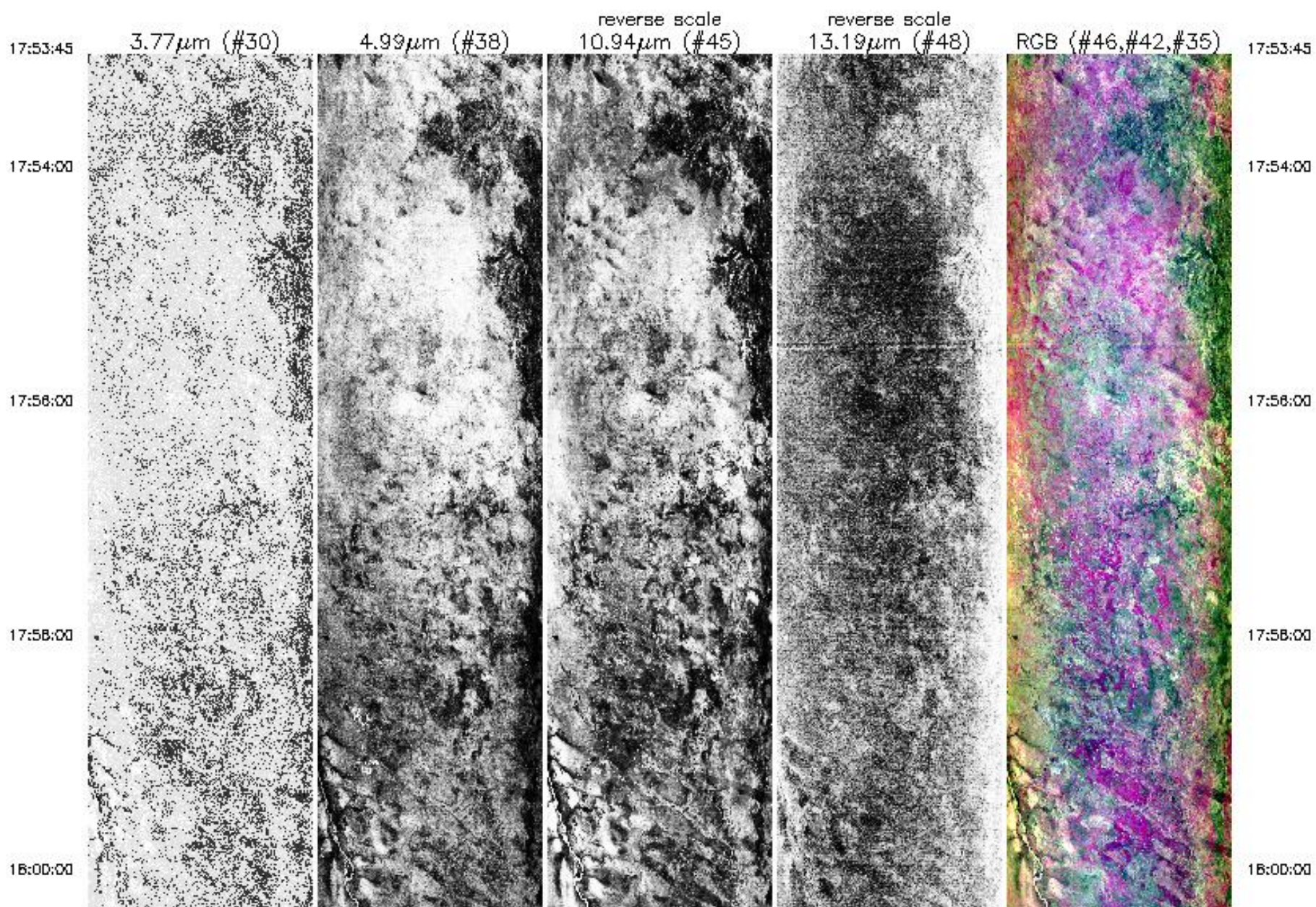
Lower Right Lat, Lon = -17.6°, 23.8°

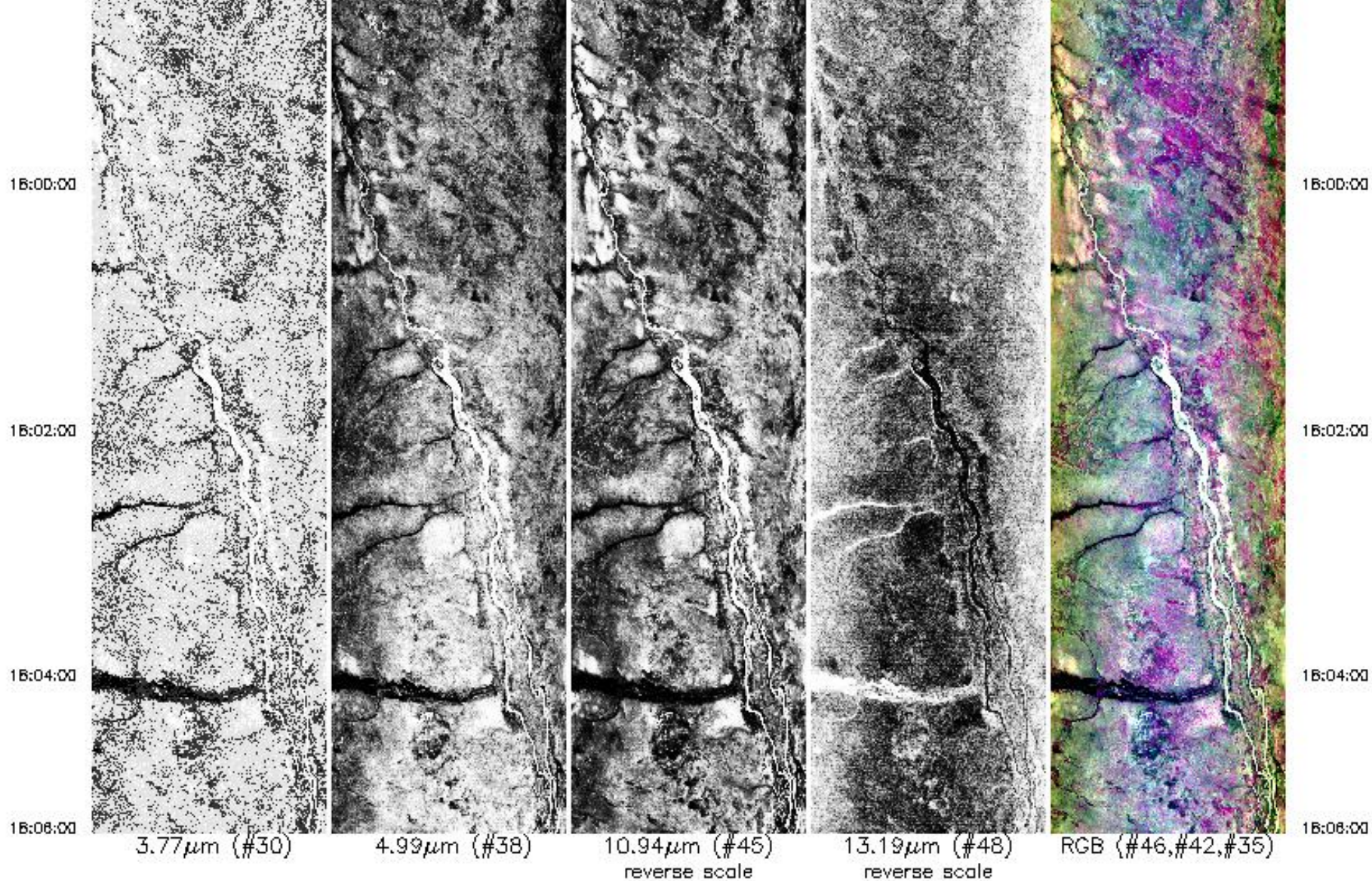
Aircraft Heading = 325.6°

Solar Zenith = 109.3°

GPS Altitude = 19940. m (MSL)

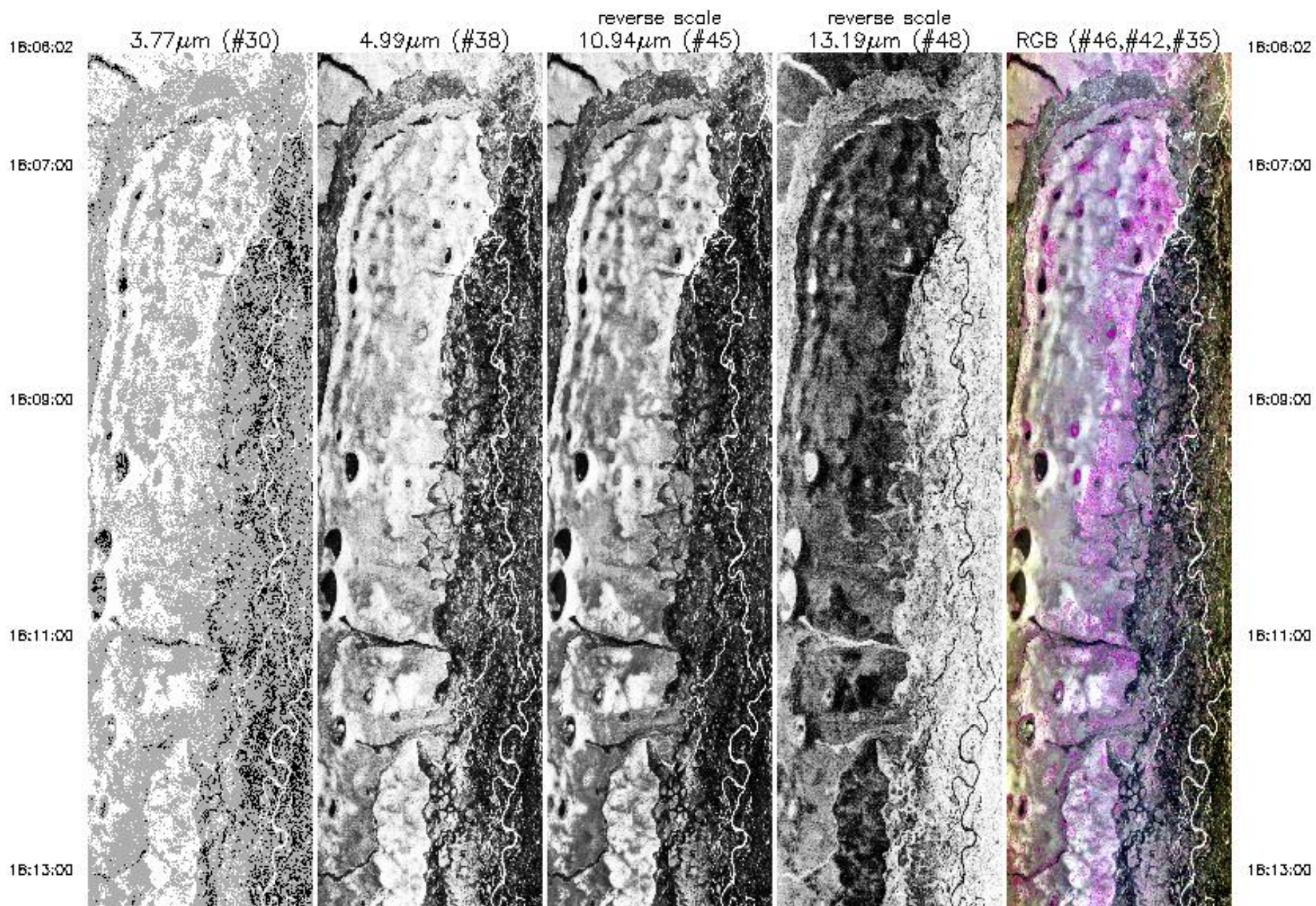
MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign – 01 Sep 2000  
Botswana  
Flight #00-155 Track #4





Upper Left Lat, Lon =  $-17.5^{\circ}$ ,  $24.1^{\circ}$   
 Lower Right Lat, Lon =  $-16.3^{\circ}$ ,  $23.3^{\circ}$   
 Aircraft Heading =  $335.6^{\circ}$   
 Solar Zenith =  $113.8^{\circ}$   
 GPS Altitude = 19944. m (MSL)

MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign – 01 Sep 2000  
Botswana  
Flight #00-155 Track #5



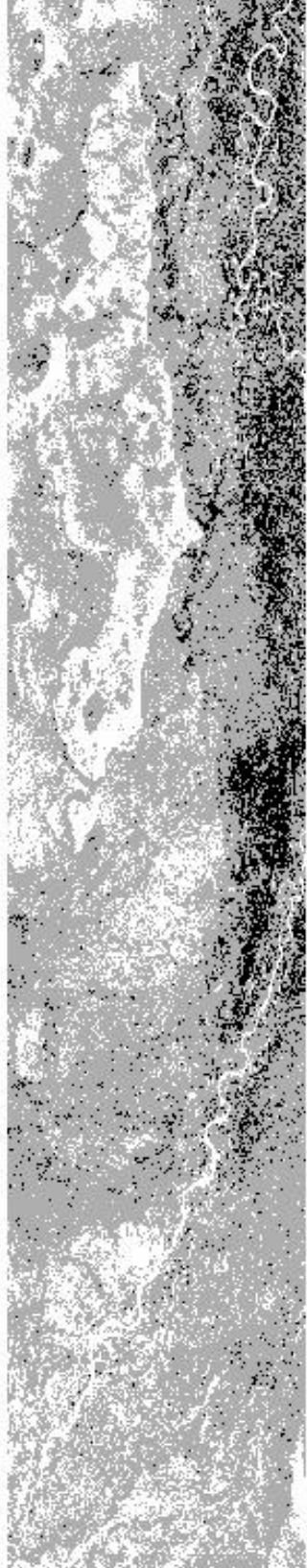
16:13:00

16:15:00

16:17:00

16:19:00

16:21:00



16:13:00

16:15:00

16:17:00

16:19:00

16:21:00

16:21:00

16:23:00

16:24:27



16:21:00

16:23:00

16:24:27

3.77µm (#30)

4.99µm (#38)

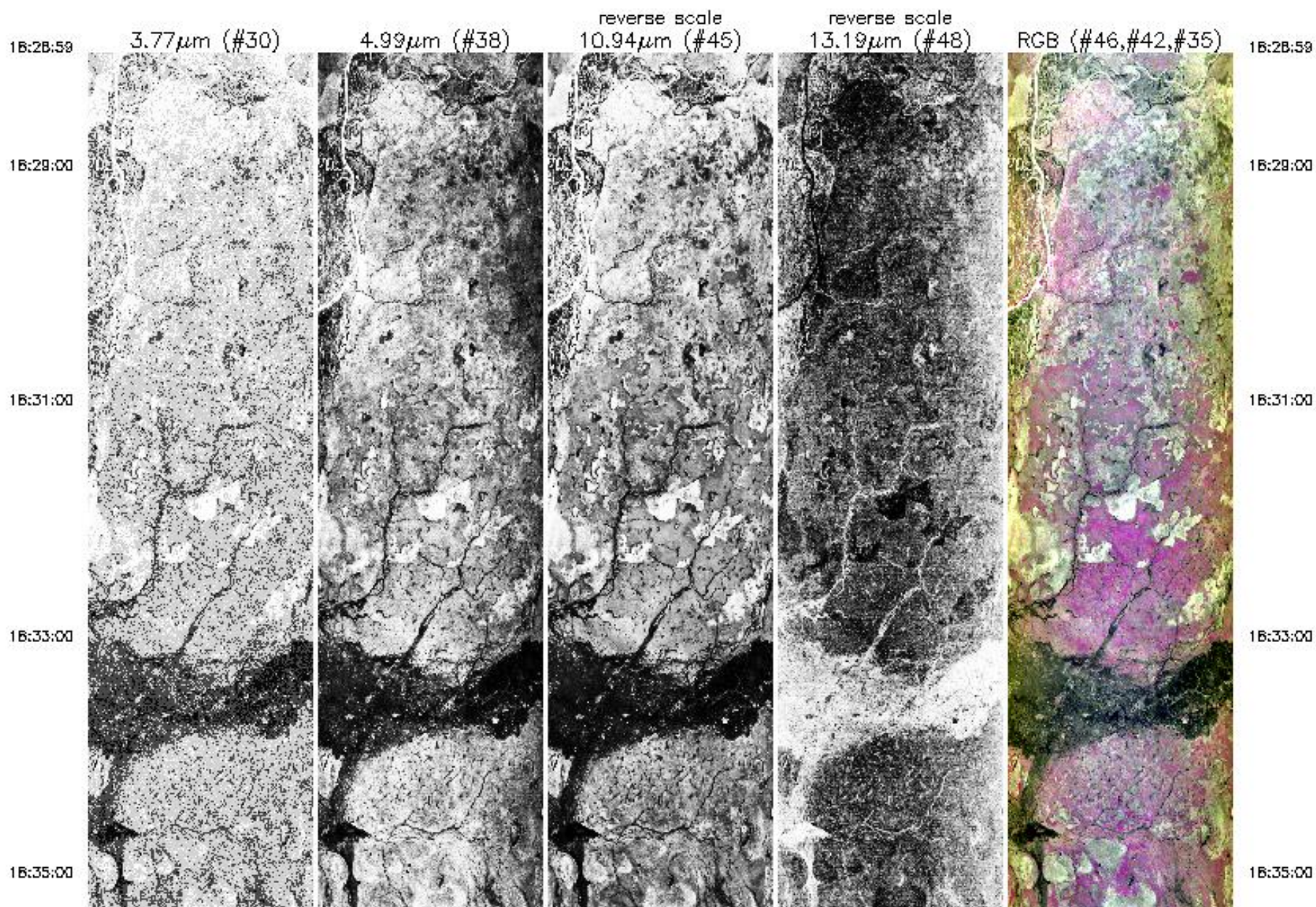
10.94µm (#45)  
reverse scale

13.19µm (#48)  
reverse scale

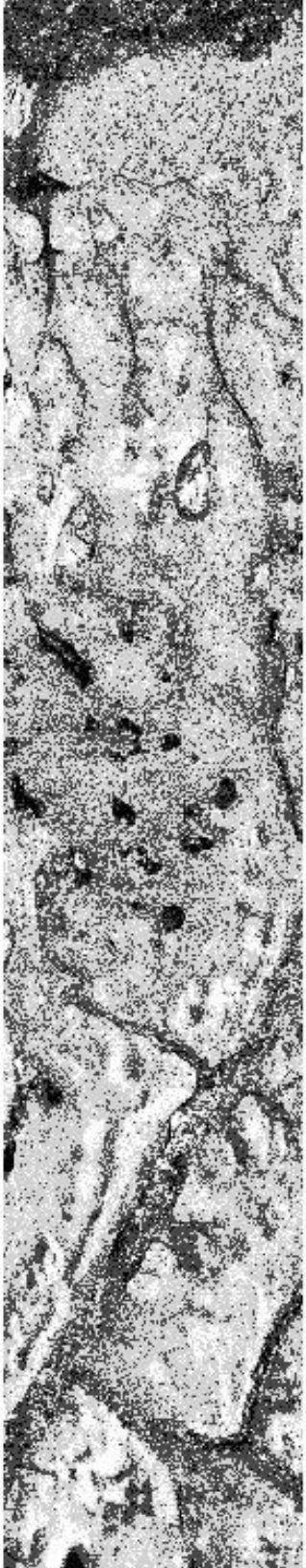
RGB (#46,#42,#35)

Upper Left Lat, Lon = -16.2°, 23.6°  
 Lower Right Lat, Lon = -14.2°, 22.7°  
 Aircraft Heading = 342.6°  
 Solar Zenith = 116.3°  
 GPS Altitude = 19993. m (MSL)

MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign – 01 Sep 2000  
Zambia  
Flight #00-155 Track #6



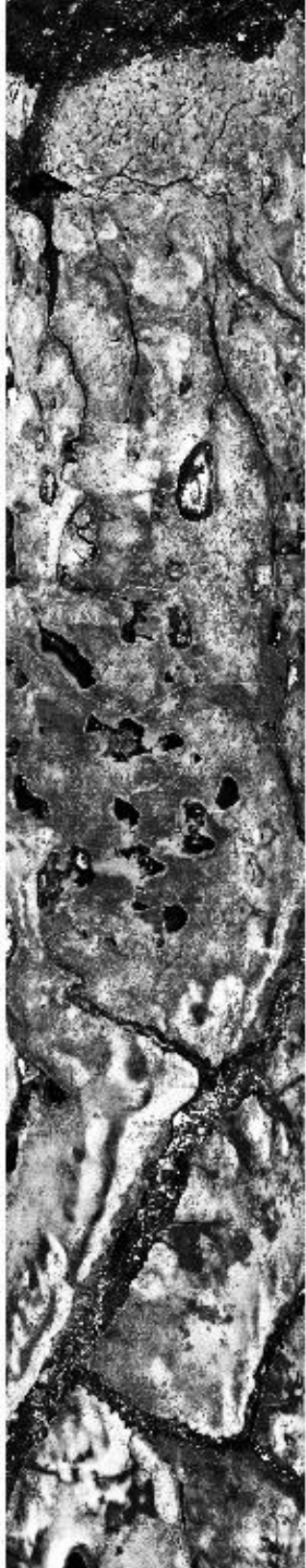
16:35:00



16:37:00



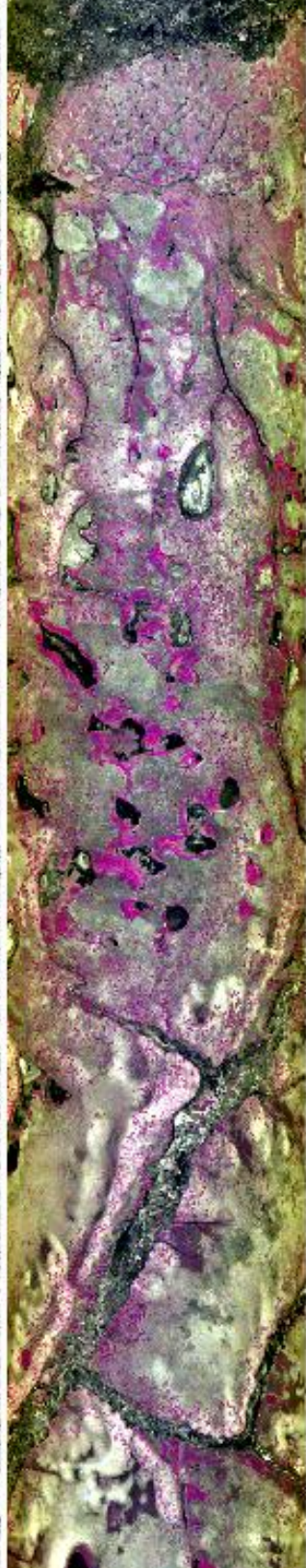
16:39:00



16:41:00



16:43:00



16:35:00

16:37:00

16:39:00

16:41:00

16:43:00



16:43:00

16:45:00

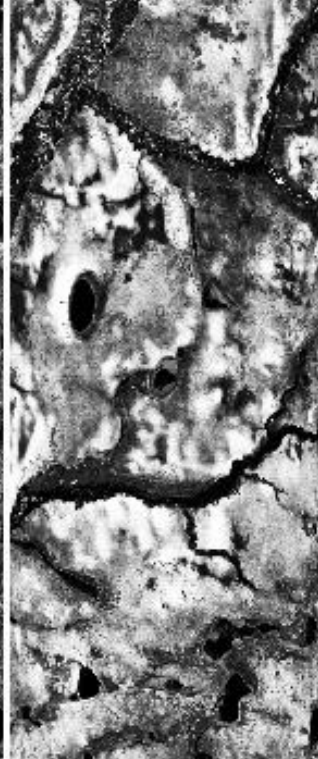
16:47:18



3.77µm (#30)



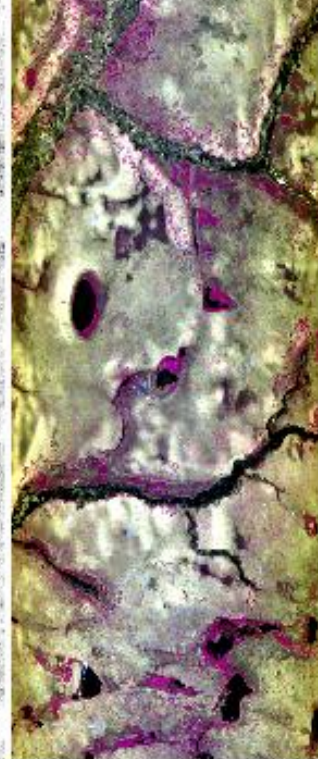
4.99µm (#38)



10.94µm (#45)  
reverse scale



13.19µm (#48)  
reverse scale



RGB (#46,#42,#35)

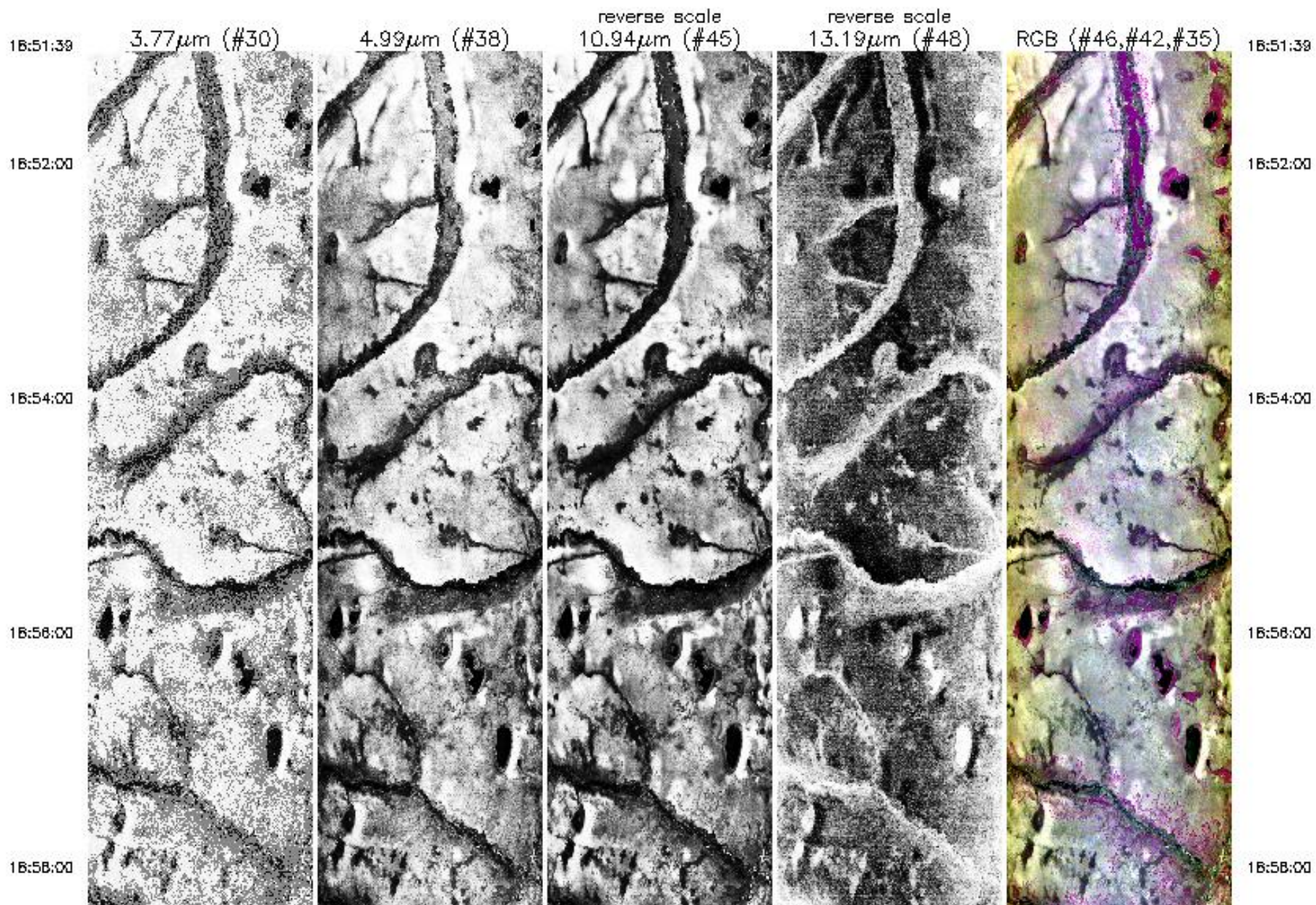
16:43:00

16:45:00

16:47:18

Upper Left Lat, Lon =  $-14.2^\circ$ ,  $23.1^\circ$   
Lower Right Lat, Lon =  $-16.1^\circ$ ,  $23.9^\circ$   
Aircraft Heading =  $164.6^\circ$   
Solar Zenith =  $121.3^\circ$   
GPS Altitude = 19968. m (MSL)

MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign – 01 Sep 2000  
Zambia  
Flight #00-155 Track #7



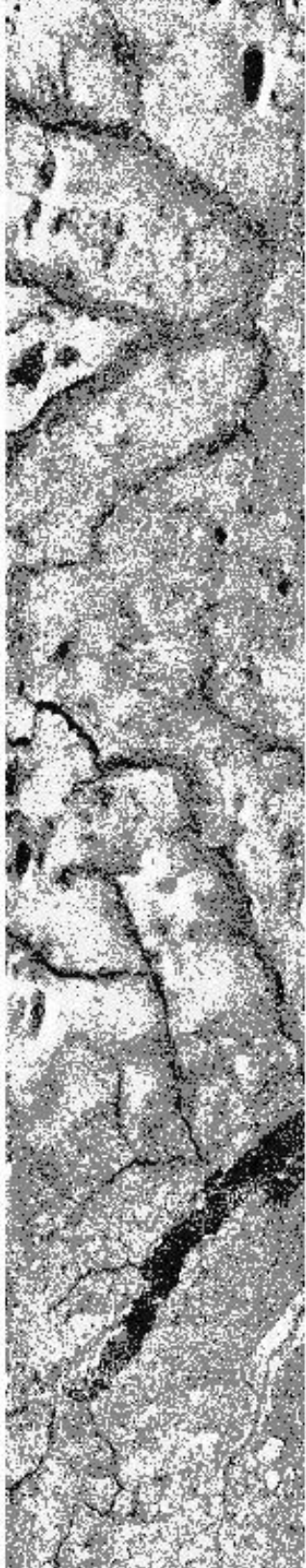
16:58:00

19:00:00

19:02:00

19:04:00

19:06:00



16:58:00

19:00:00

19:02:00

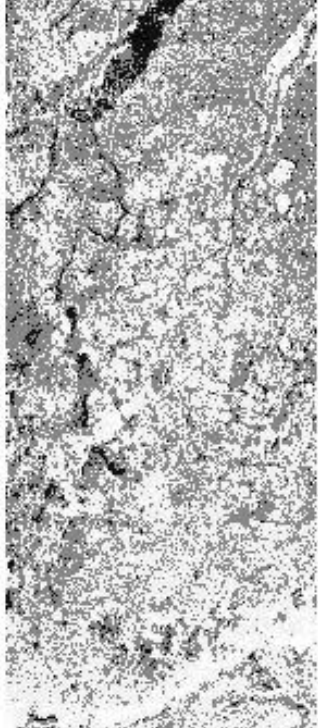
19:04:00

19:06:00

19:08:00

19:08:00

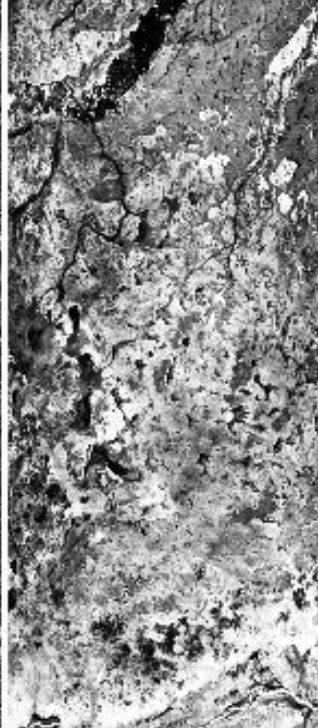
19:08:49



3.77µm (#30)



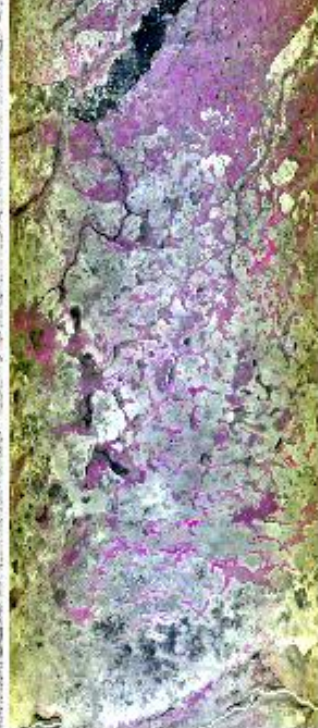
4.99µm (#38)



10.94µm (#45)  
reverse scale



13.19µm (#48)  
reverse scale



RGB (#46,#42,#35)

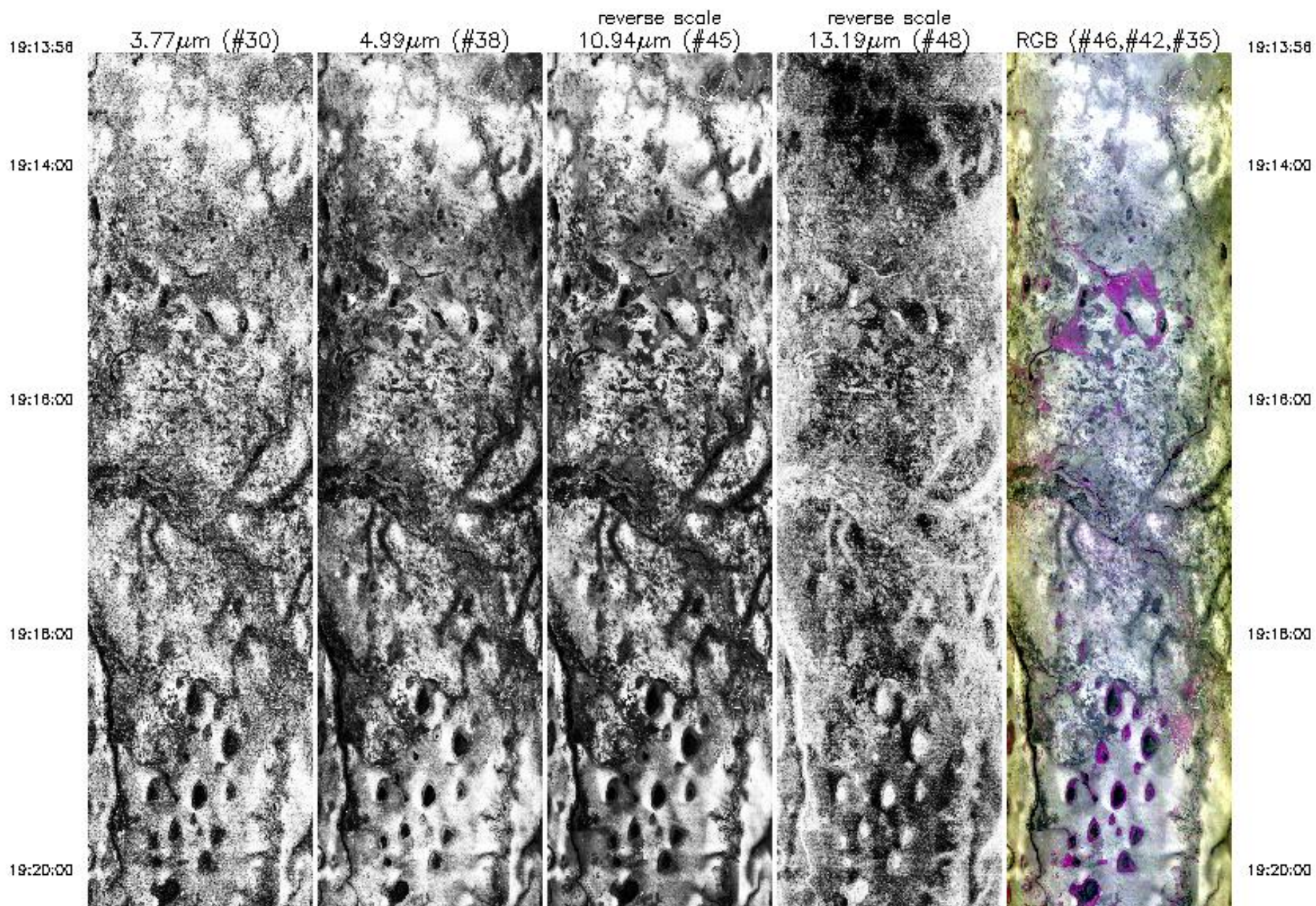
19:08:00

19:08:00

19:08:49

Upper Left Lat, Lon =  $-16.0^\circ$ ,  $24.3^\circ$   
 Lower Right Lat, Lon =  $-14.1^\circ$ ,  $23.4^\circ$   
 Aircraft Heading =  $351.1^\circ$   
 Solar Zenith =  $127.9^\circ$   
 GPS Altitude = 20004. m (MSL)

MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign – 01 Sep 2000  
Zambia  
Flight #00-155 Track #8



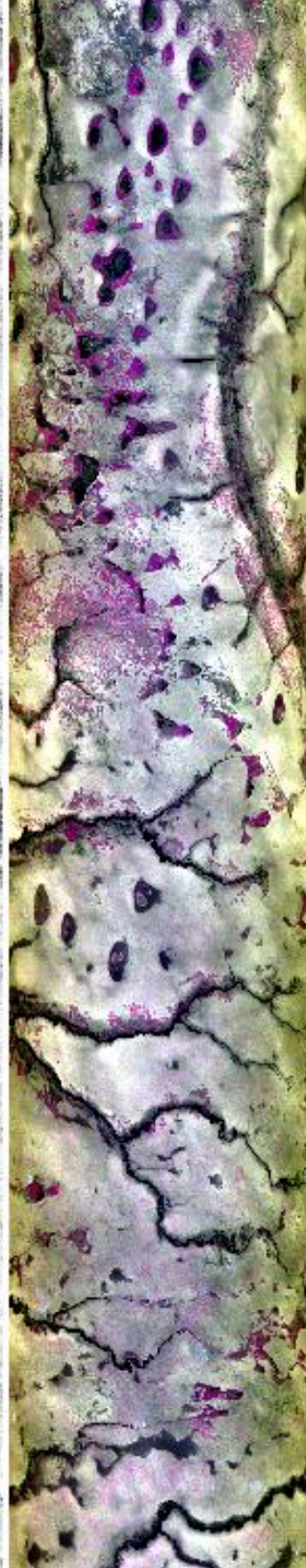
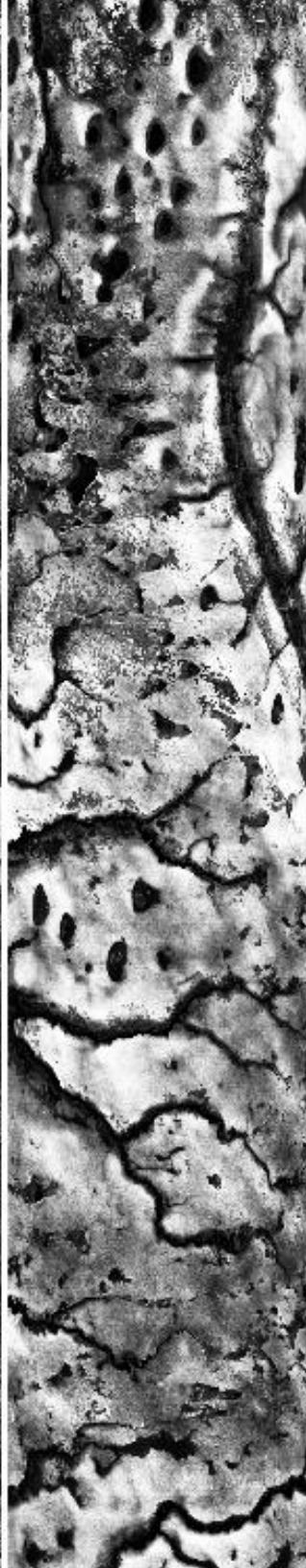
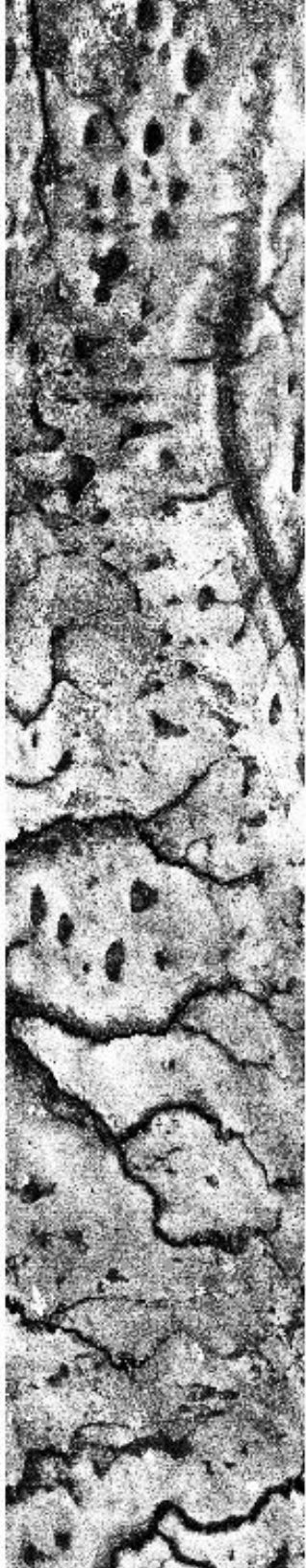
19:20:00

19:22:00

19:24:00

19:26:00

19:28:00



19:20:00

19:22:00

19:24:00

19:26:00

19:28:00

19:28:00

19:30:00

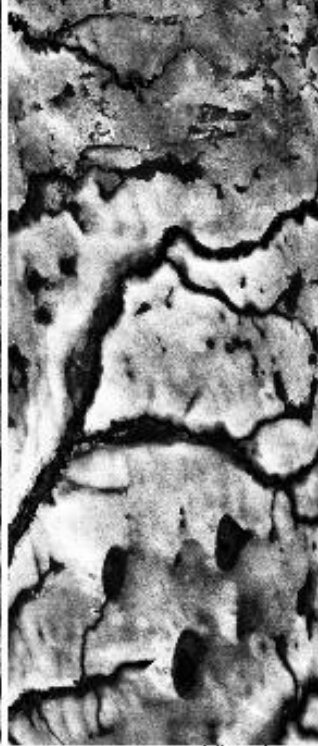
19:32:11



3.77µm (#30)



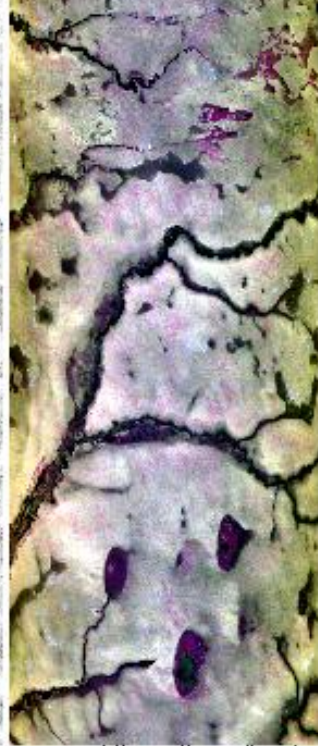
4.99µm (#38)



10.94µm (#45)  
reverse scale



13.19µm (#48)  
reverse scale



RGB (#46, #42, #35)

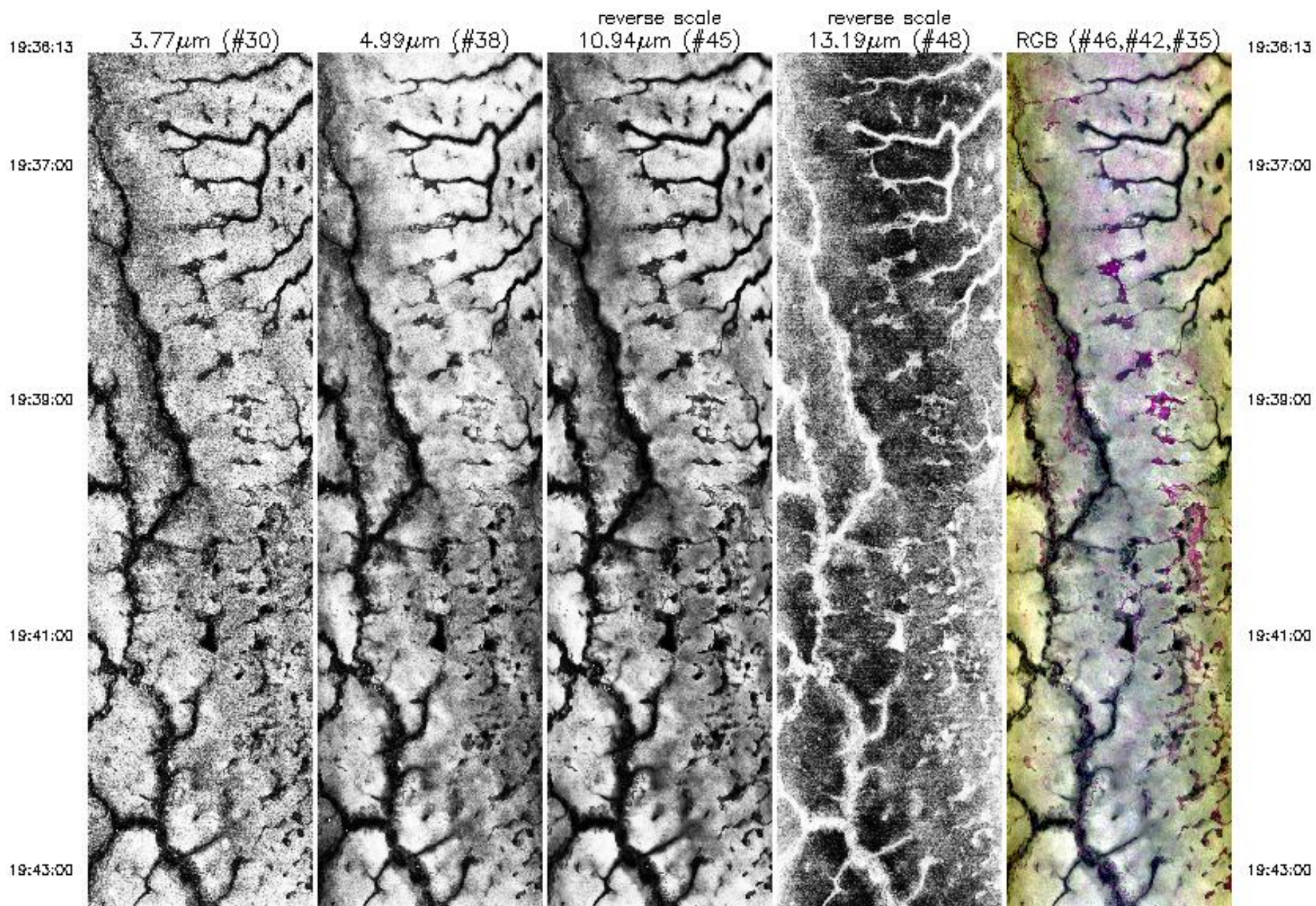
19:28:00

19:30:00

19:32:11

Upper Left Lat, Lon =  $-14.0^\circ$ ,  $23.8^\circ$   
Lower Right Lat, Lon =  $-15.9^\circ$ ,  $24.6^\circ$   
Aircraft Heading =  $163.6^\circ$   
Solar Zenith =  $132.9^\circ$   
GPS Altitude = 19961. m (MSL)

MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign – 01 Sep 2000  
Zambia  
Flight #00-155 Track #9





19:43:00



19:45:00



19:47:00



19:48:00



19:51:00



19:43:00

19:45:00

19:47:00

19:48:00

19:51:00

19:51:00

19:53:00

19:54:37



3.77µm (#30)



4.99µm (#38)



10.94µm (#45)  
reverse scale



13.19µm (#48)  
reverse scale



RGB (#46,#42,#35)

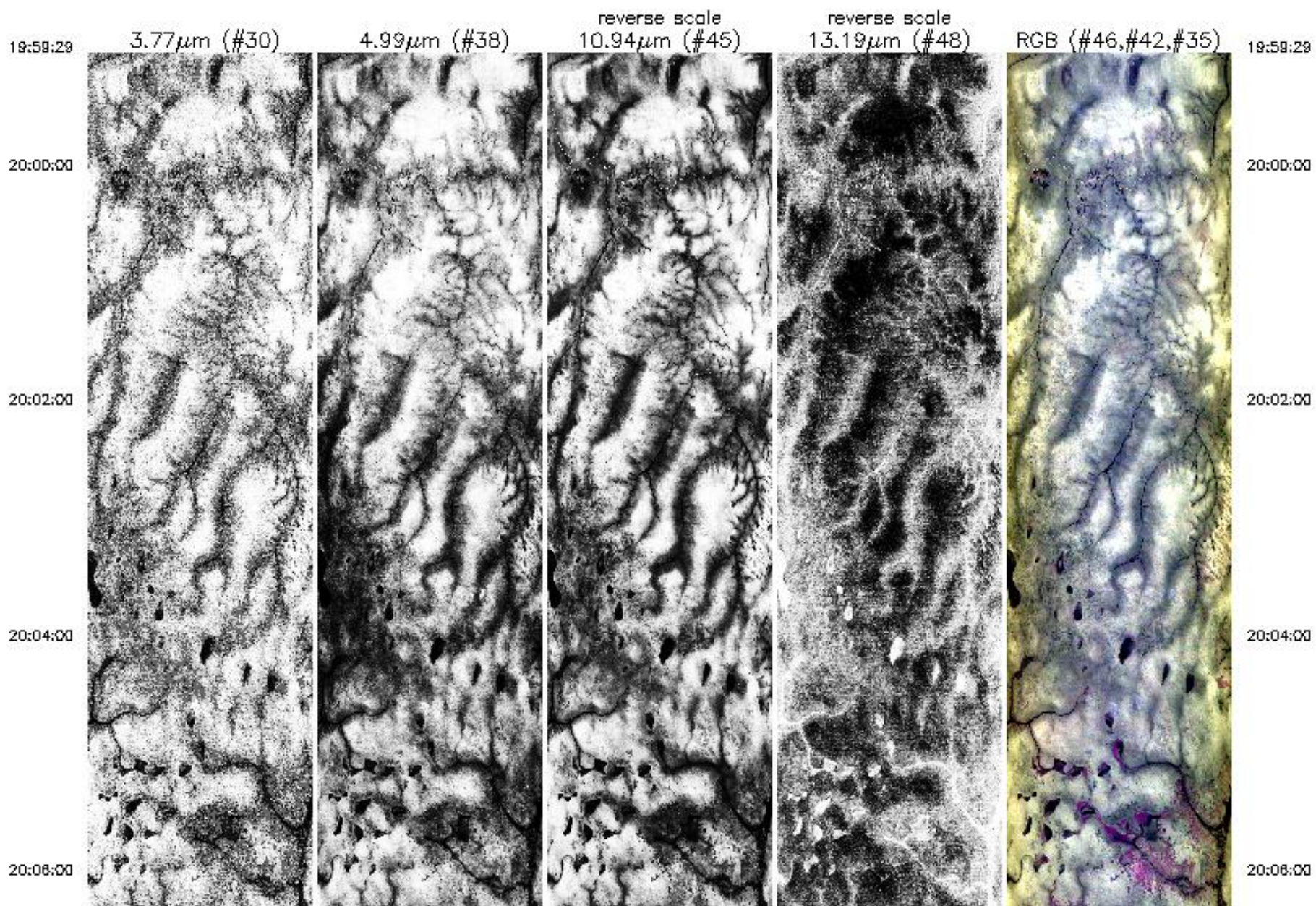
19:51:00

19:53:00

19:54:37

Upper Left Lat, Lon = -15.9°, 24.9°  
Lower Right Lat, Lon = -13.9°, 24.1°  
Aircraft Heading = 350.4°  
Solar Zenith = 139.2°  
GPS Altitude = 20025. m (MSL)

MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign – 01 Sep 2000  
Zambia  
Flight #00-155 Track #10



20:08:00

20:08:00

20:10:00

20:12:00

20:14:00



20:08:00

20:08:00

20:10:00

20:12:00

20:14:00

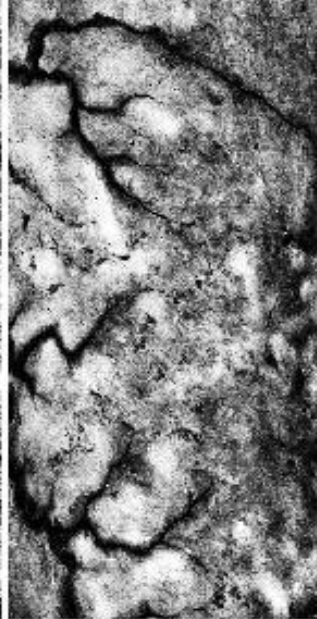
20:14:00

20:16:00

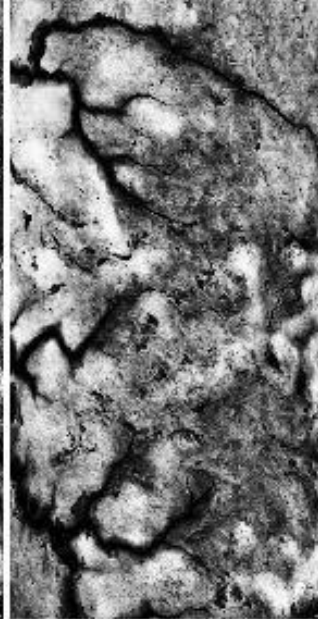
20:16:57



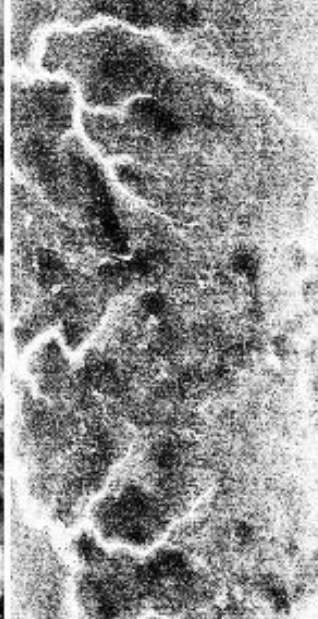
3.77µm (#30)



4.99µm (#38)



10.94µm (#45)  
reverse scale



13.19µm (#48)  
reverse scale



RGB (#46, #42, #35)

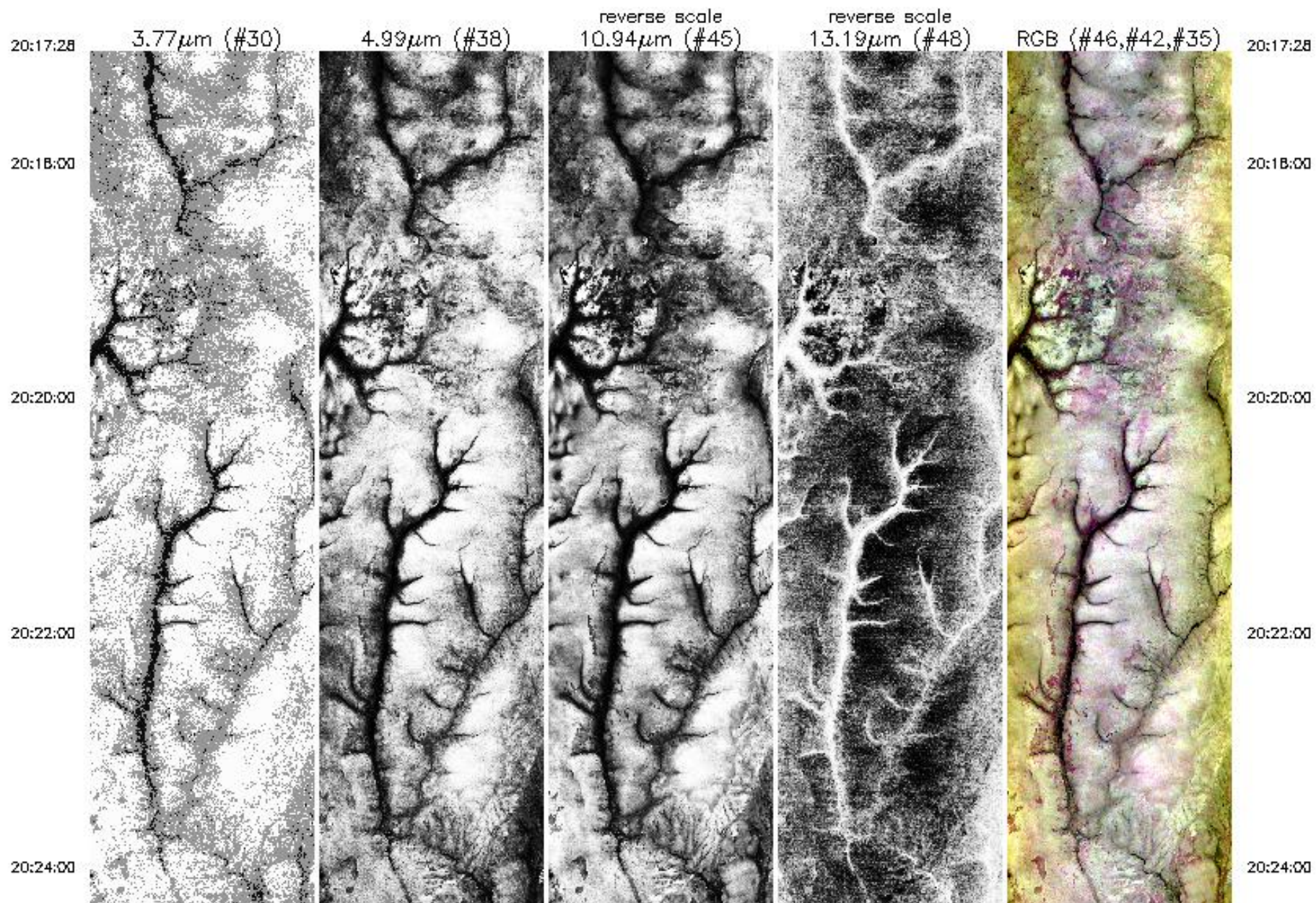
20:14:00

20:16:00

20:16:57

Upper Left Lat, Lon =  $-13.9^{\circ}$ ,  $24.5^{\circ}$   
Lower Right Lat, Lon =  $-15.7^{\circ}$ ,  $25.3^{\circ}$   
Aircraft Heading =  $163.0^{\circ}$   
Solar Zenith =  $144.6^{\circ}$   
GPS Altitude = 19894. m (MSL)

MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign – 01 Sep 2000  
Zambia  
Flight #00-155 Track #11



20:24:00

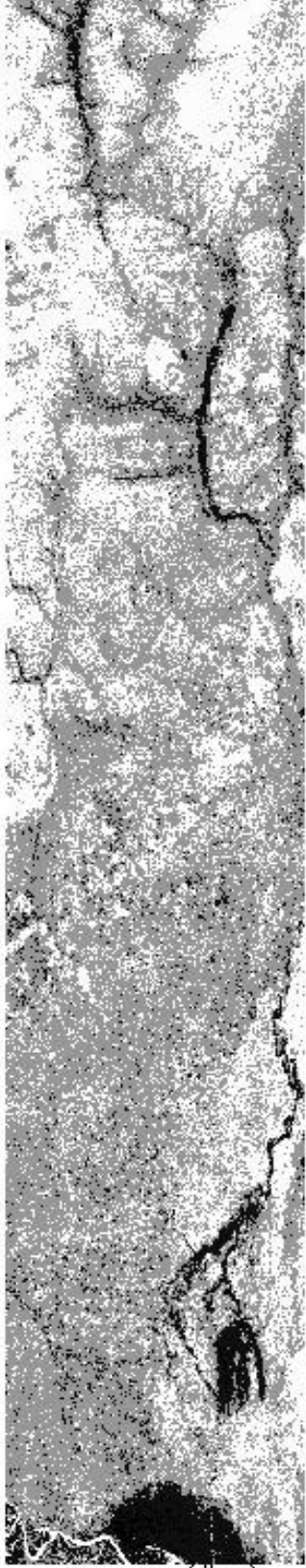
20:26:00

20:28:00

20:30:00

20:32:00

20:32:55



20:24:00

20:26:00

20:28:00

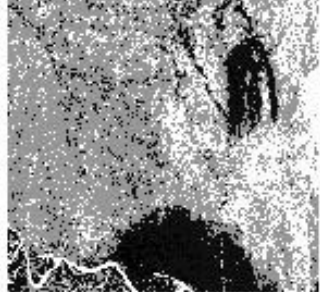
20:30:00

20:32:00

20:32:55

20:32:00

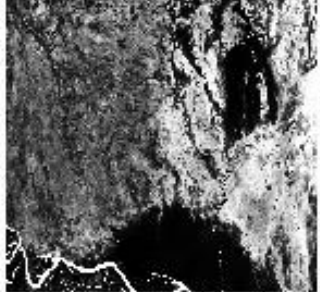
20:32:55



3.77  $\mu\text{m}$  (#30)



4.99  $\mu\text{m}$  (#38)



10.94  $\mu\text{m}$  (#45)  
reverse scale



13.19  $\mu\text{m}$  (#48)  
reverse scale



RGB (#46, #42, #35)

20:32:00

20:32:55

Upper Left Lat, Lon =  $-15.8^\circ$ ,  $25.0^\circ$

Lower Right Lat, Lon =  $-17.6^\circ$ ,  $25.1^\circ$

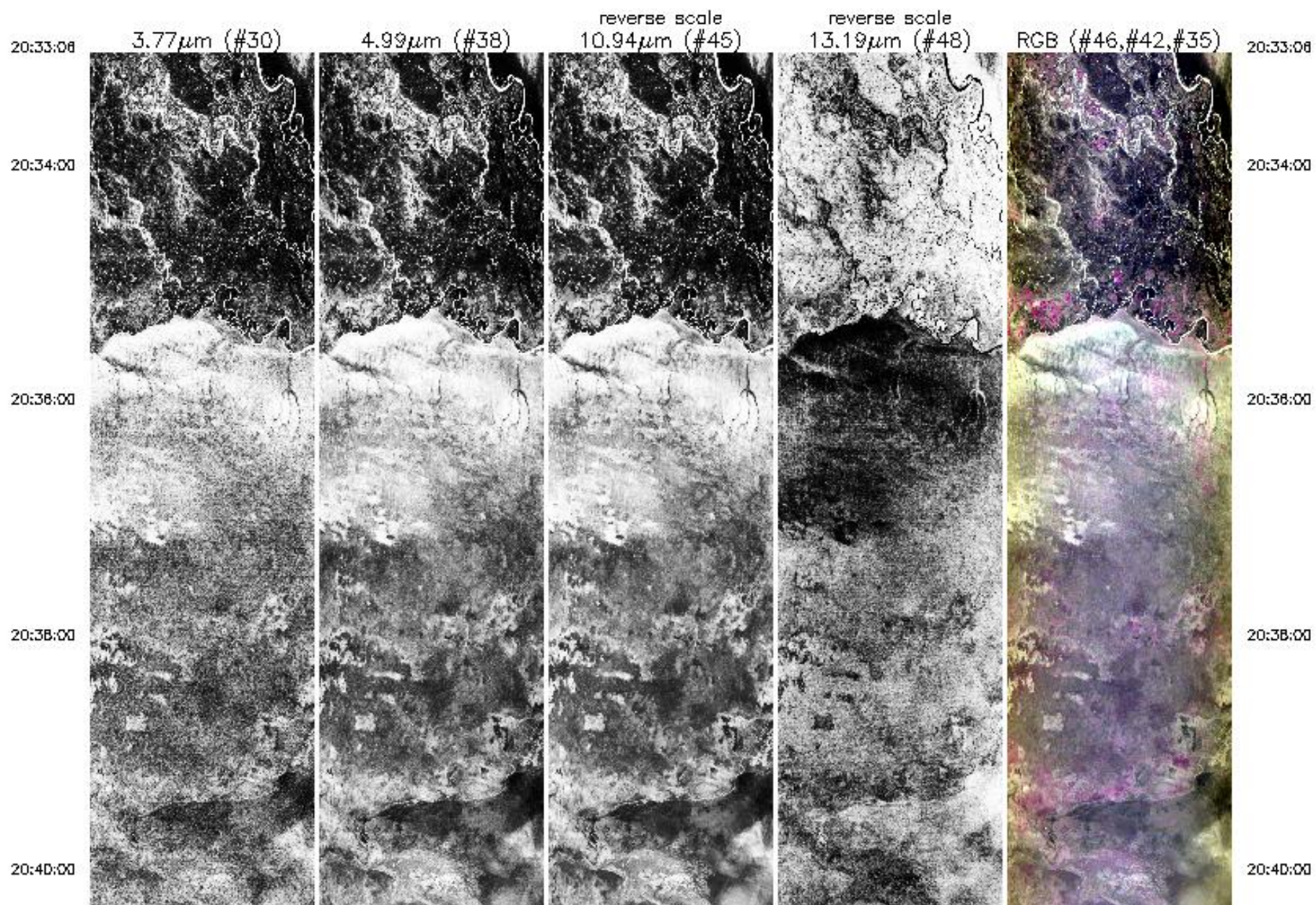
Aircraft Heading =  $192.4^\circ$

Solar Zenith =  $149.1^\circ$

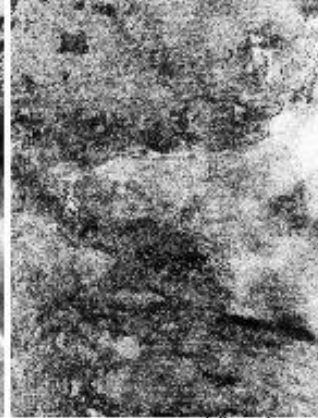
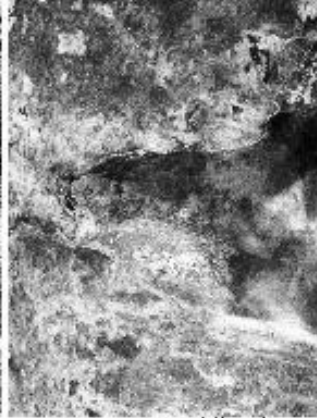
GPS Altitude = 19984. m (MSL)



MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign – 01 Sep 2000  
Zambia, Botswana  
Flight #00-155 Track #12



20:40:00



20:40:00

20:41:08

3.77µm (#30)

4.99µm (#38)

10.94µm (#45)  
reverse scale

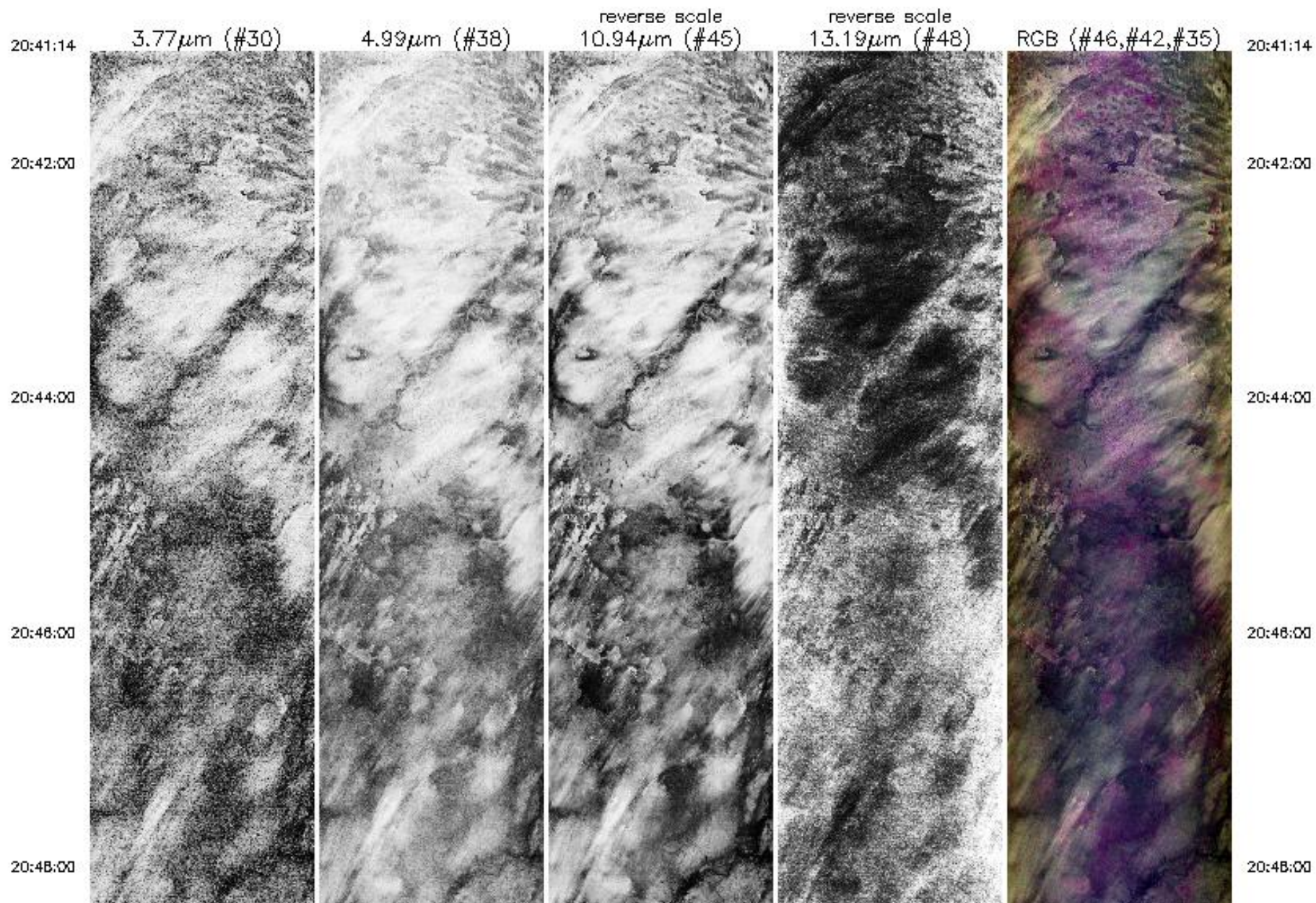
13.19µm (#48)  
reverse scale

RGB (#46, #42, #35)

20:41:08

Upper Left Lat, Lon = -17.6°, 24.7°  
Lower Right Lat, Lon = -18.5°, 25.2°  
Aircraft Heading = 179.9°  
Solar Zenith = 152.1°  
GPS Altitude = 20021. m (MSL)

MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign – 01 Sep 2000  
Botswana  
Flight #00-155 Track #13



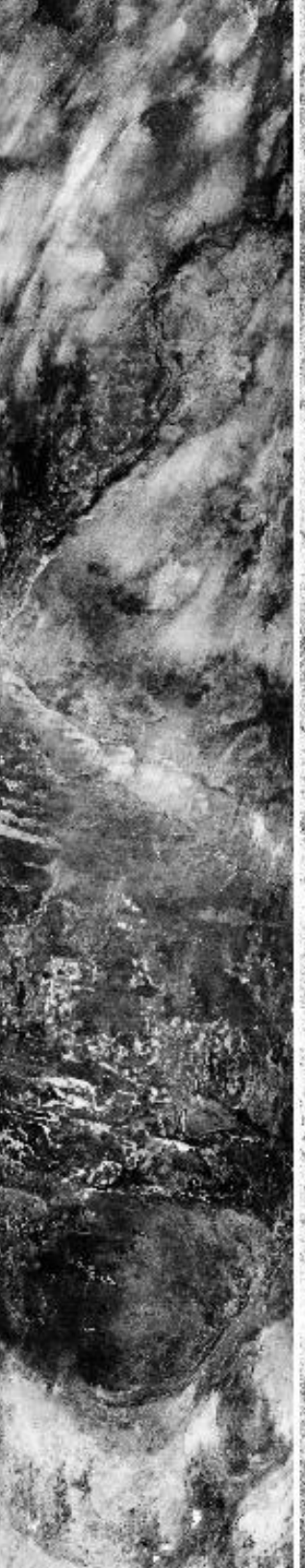
20:48:00



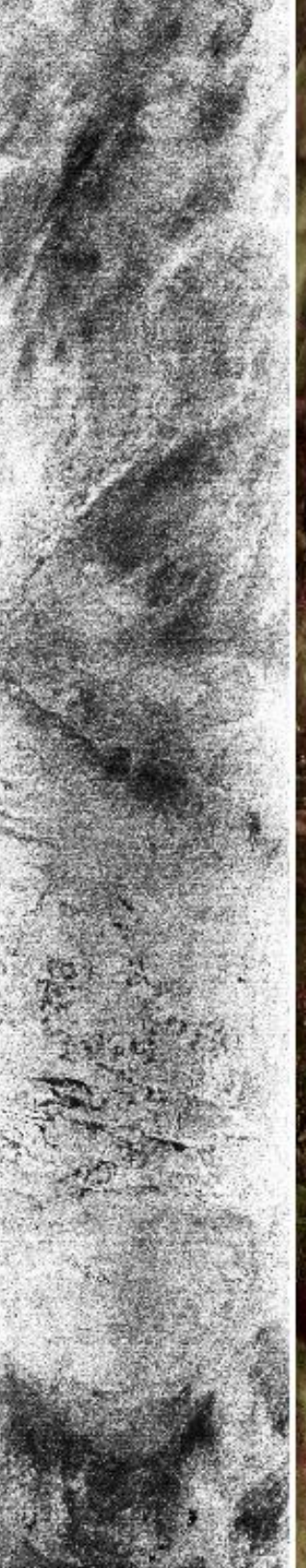
20:50:00



20:52:00



20:54:00



20:56:00



20:48:00

20:50:00

20:52:00

20:54:00

20:56:00

20:56:00



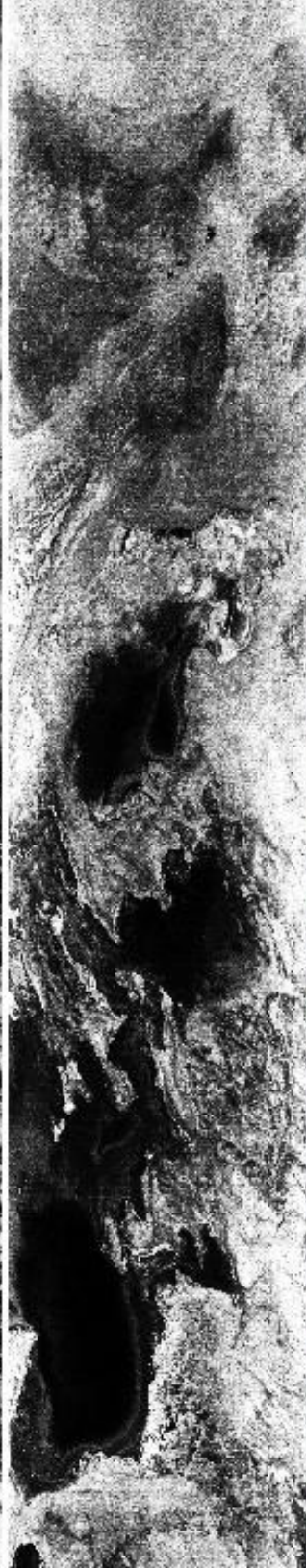
20:58:00



21:00:00



21:02:00



21:04:00



20:56:00

20:58:00

21:00:00

21:02:00

21:04:00

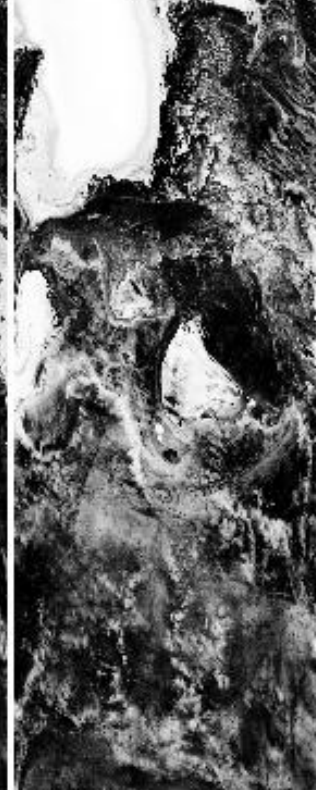
21:04:00



3.77 $\mu$ m (#30)



4.99 $\mu$ m (#38)



10.94 $\mu$ m (#45)  
reverse scale



13.19 $\mu$ m (#48)  
reverse scale



RGB (#46,#42,#35)

21:04:00

21:06:00

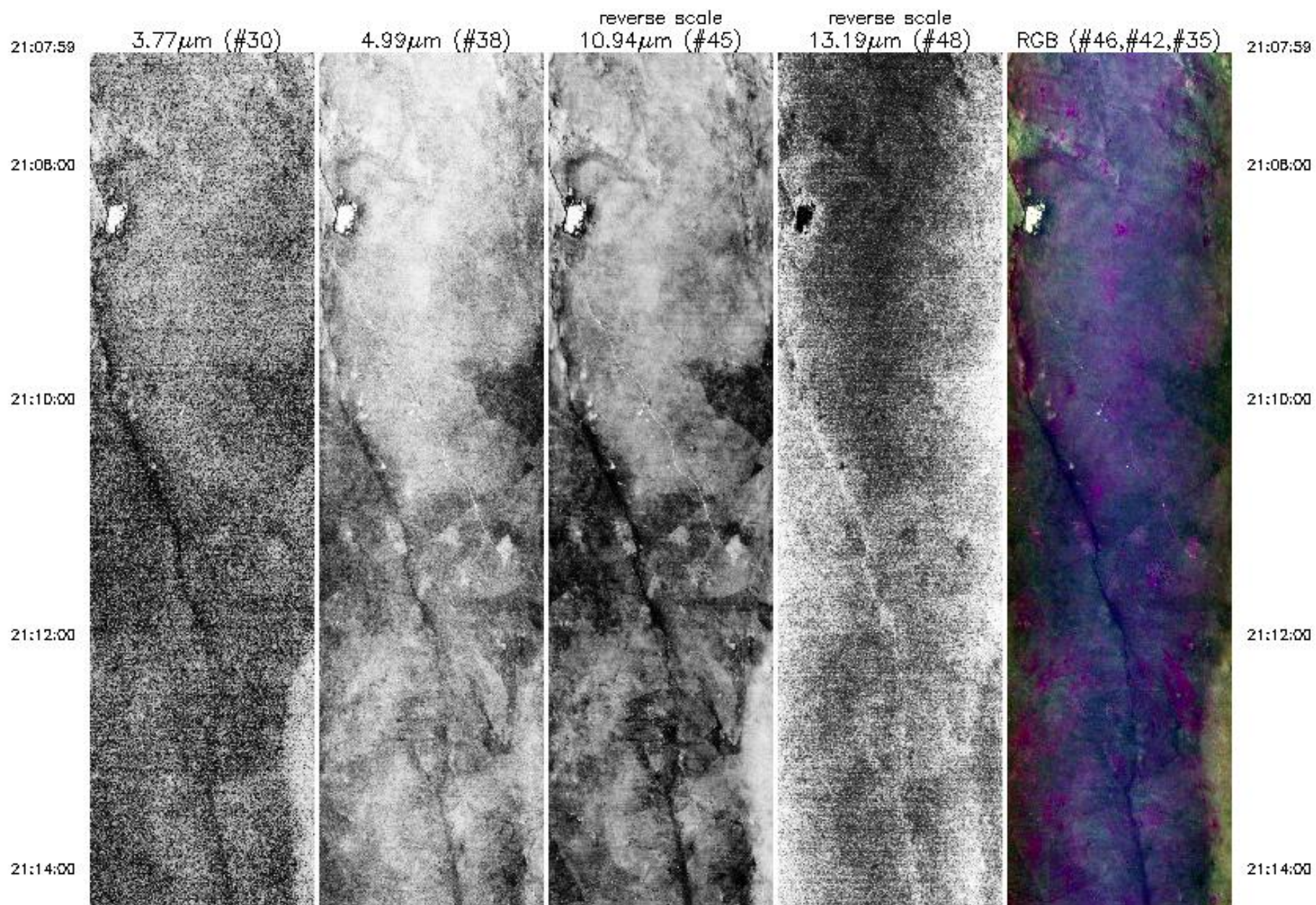
21:06:00

21:07:59

21:07:59

Upper Left Lat, Lon =  $-18.5^\circ$ ,  $24.8^\circ$   
Lower Right Lat, Lon =  $-21.3^\circ$ ,  $25.9^\circ$   
Aircraft Heading =  $170.8^\circ$   
Solar Zenith =  $153.7^\circ$   
GPS Altitude = 20016. m (MSL)

MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign – 01 Sep 2000  
Botswana  
Flight #00-155 Track #14



21:14:00

21:16:00

21:18:00

21:20:00

21:22:00



21:14:00

21:16:00

21:18:00

21:20:00

21:22:00



21:22:00

21:24:00

21:26:00

21:28:00

21:30:00



21:22:00

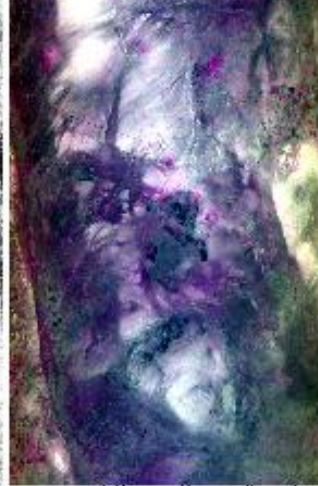
21:24:00

21:26:00

21:28:00

21:30:00

21:30:00



21:30:00

21:32:51

3.77µm (#30)

4.99µm (#38)

10.94µm (#45)  
reverse scale

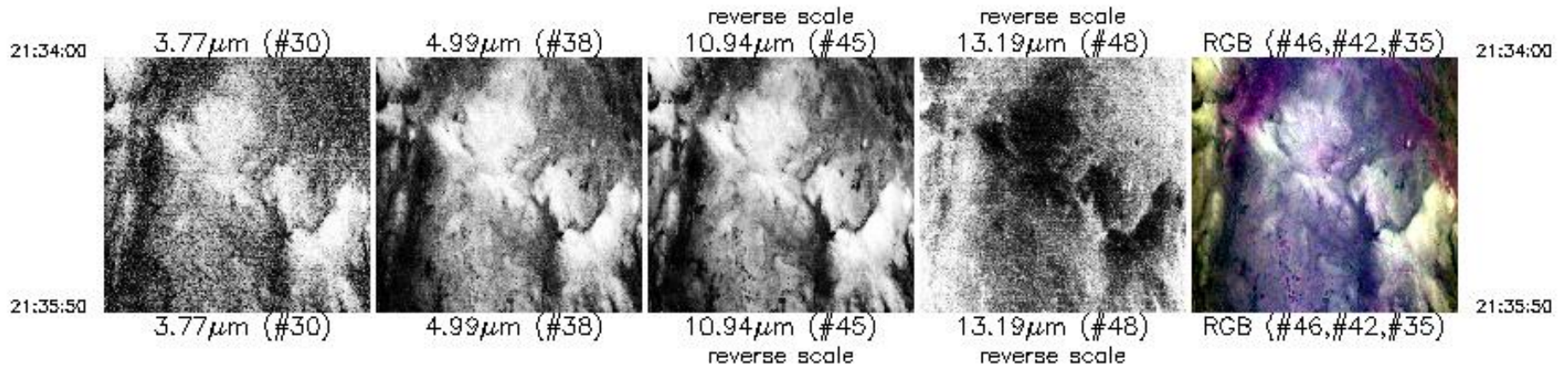
13.19µm (#48)  
reverse scale

RGB (#46,#42,#35)

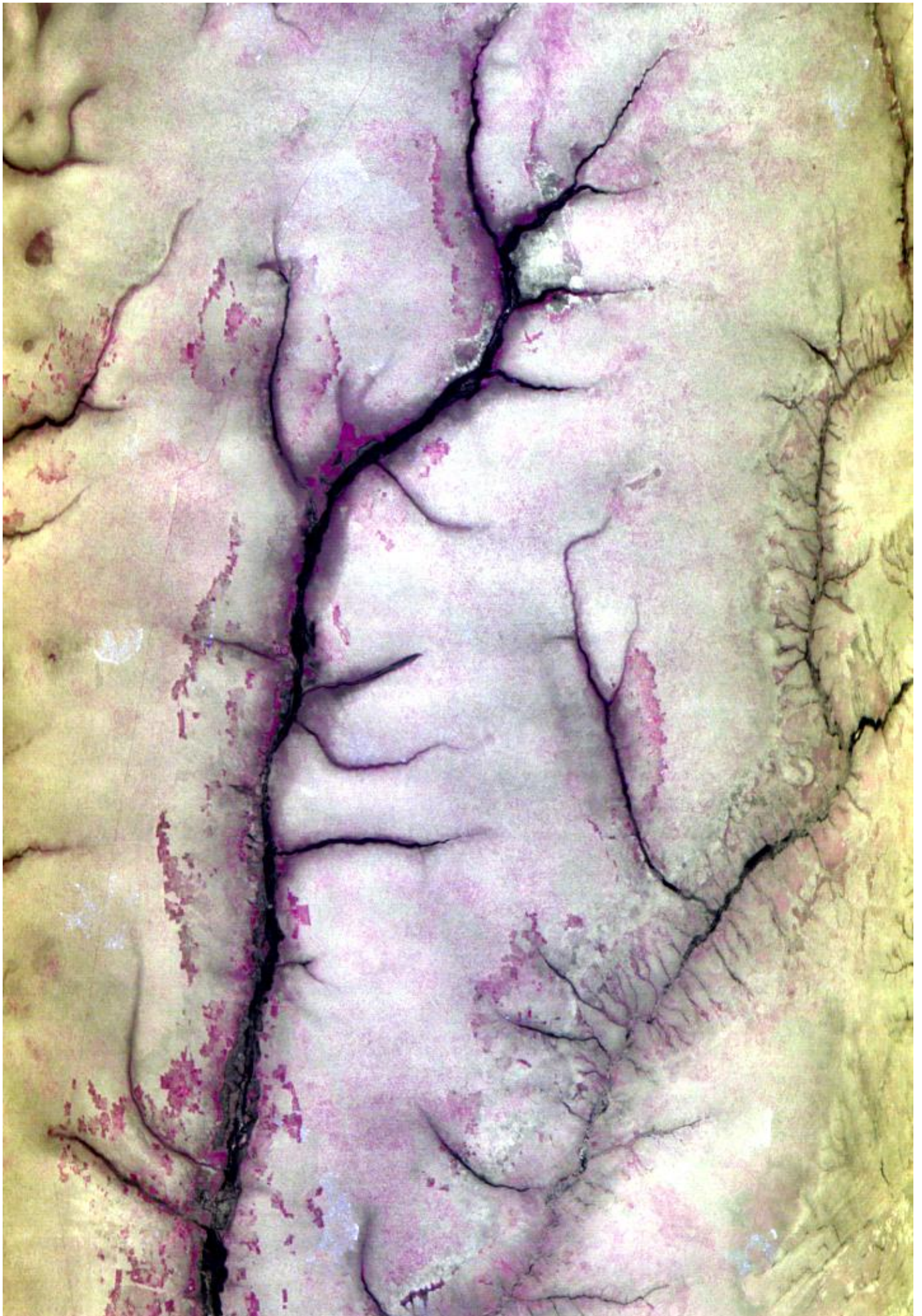
21:32:51

Upper Left Lat, Lon = -21.4°, 25.6°  
 Lower Right Lat, Lon = -24.0°, 26.7°  
 Aircraft Heading = 164.8°  
 Solar Zenith = 158.5°  
 GPS Altitude = 19986. m (MSL)

MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign – 01 Sep 2000  
Botswana  
Flight #00-155 Track #15

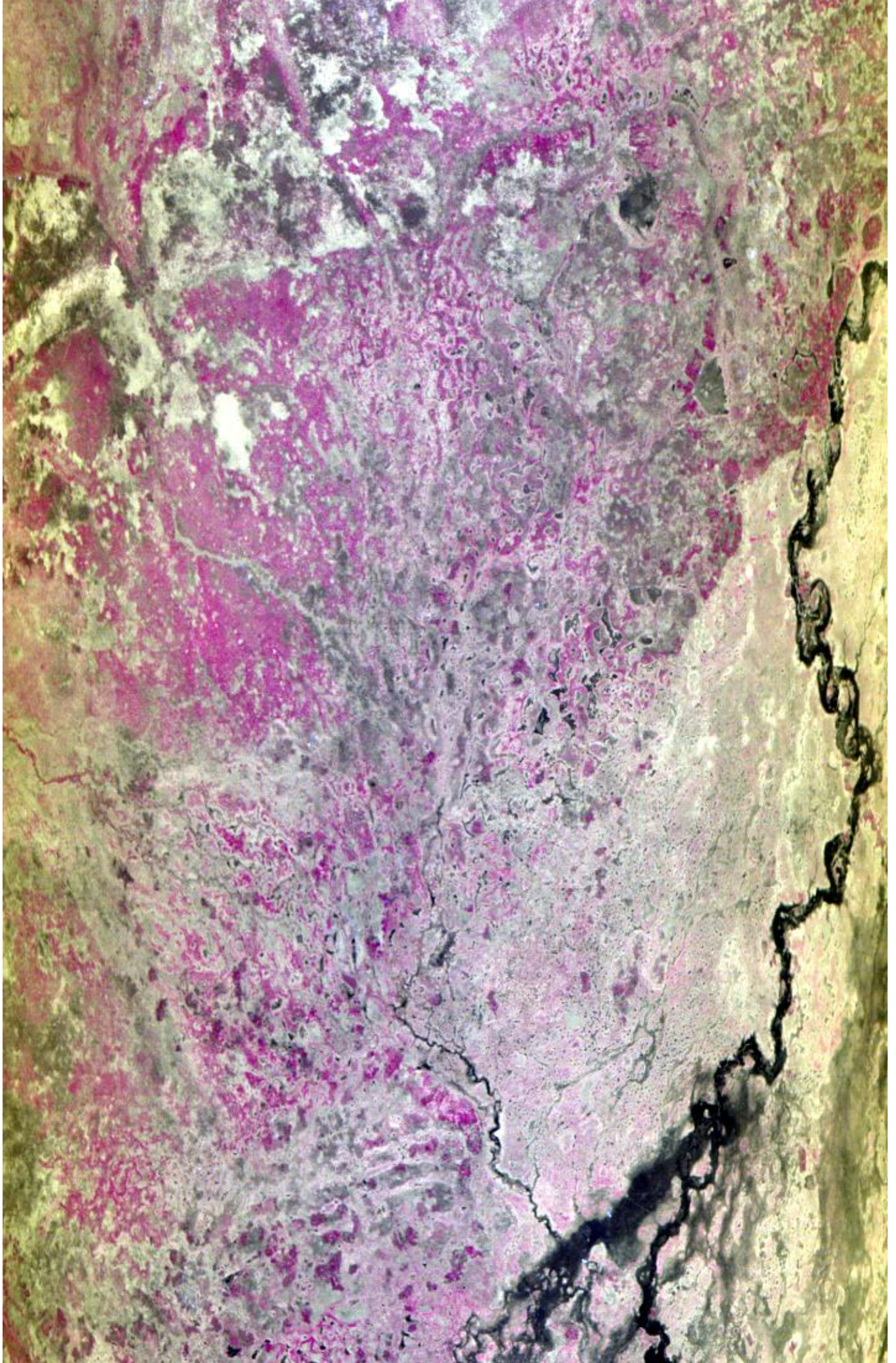


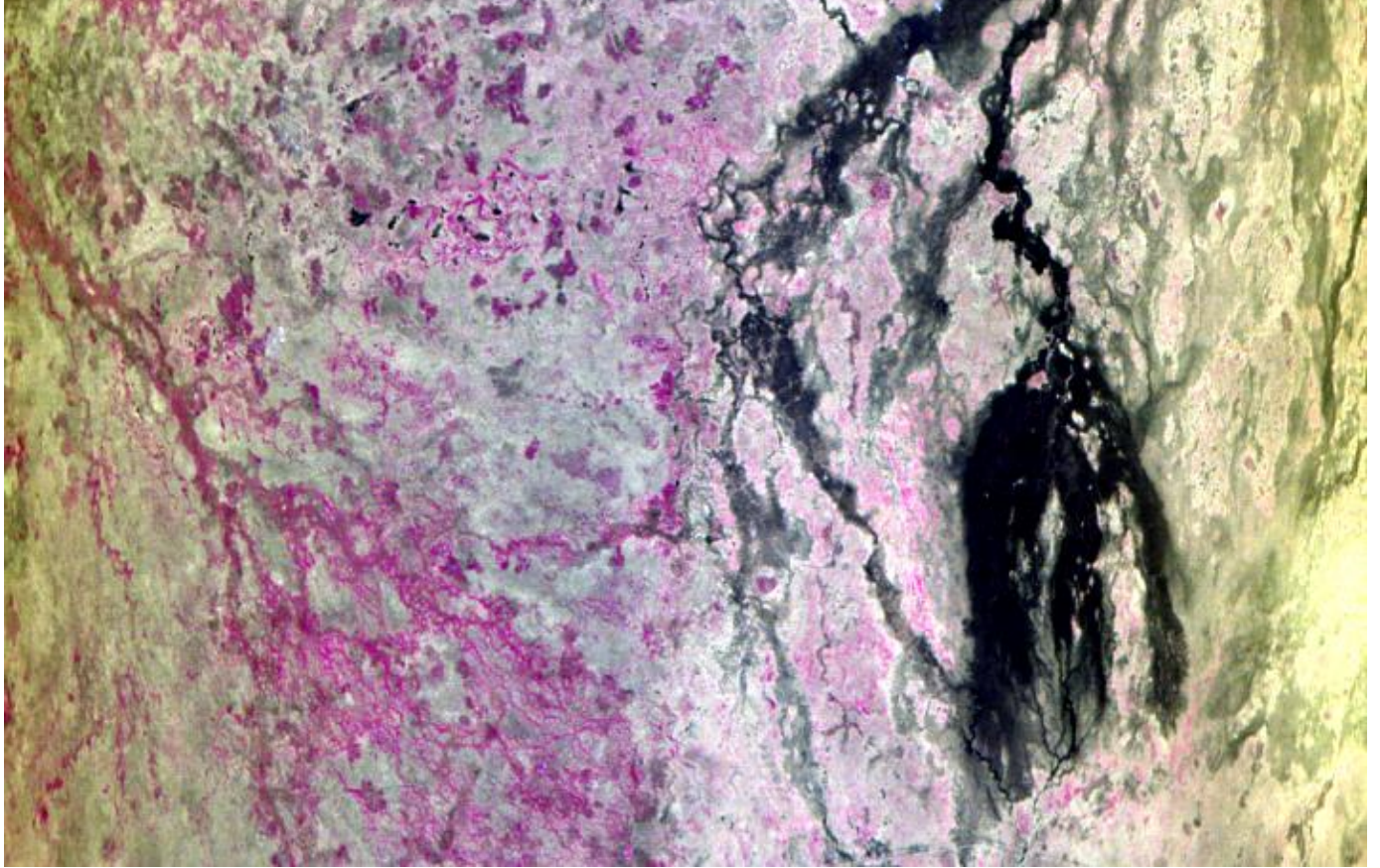
Upper Left Lat, Lon =  $-24.3^{\circ}$ ,  $26.6^{\circ}$   
Lower Right Lat, Lon =  $-24.0^{\circ}$ ,  $26.8^{\circ}$   
Aircraft Heading =  $105.7^{\circ}$   
Solar Zenith =  $161.1^{\circ}$   
GPS Altitude = 20026. m (MSL)





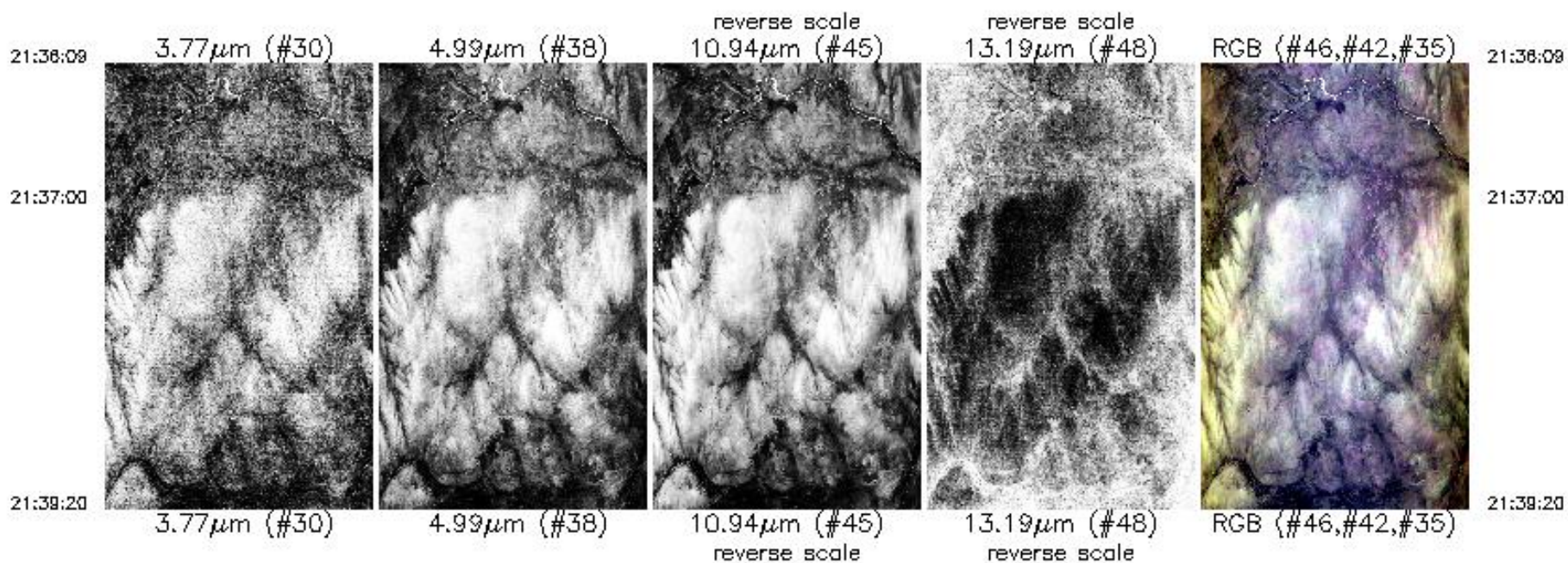








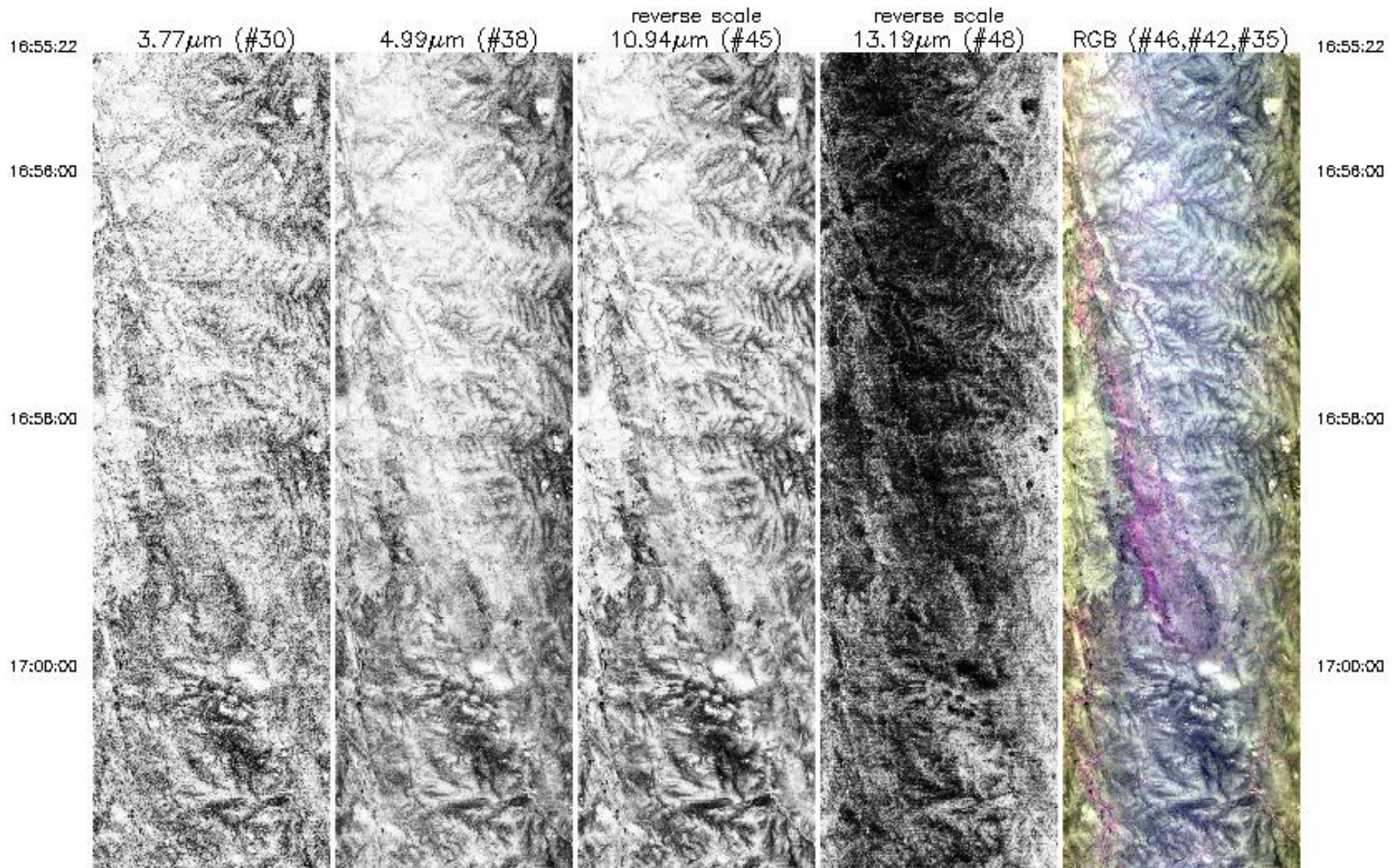
MODIS Airborne Simulator Browse Imagery  
 SAFARI 2000 Campaign – 01 Sep 2000  
 Botswana  
 Flight #00-155 Track #16



Upper Left Lat, Lon = -24.3°, 26.9°  
 Lower Right Lat, Lon = -24.0°, 27.2°  
 Aircraft Heading = 89.2°  
 Solar Zenith = 161.4°  
 GPS Altitude = 20056. m (MSL)

# Flight #00-155 Browse Imagery

MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign – 01 Sep 2000  
Botswana  
Flight #00-155 Track #1



17:00:00



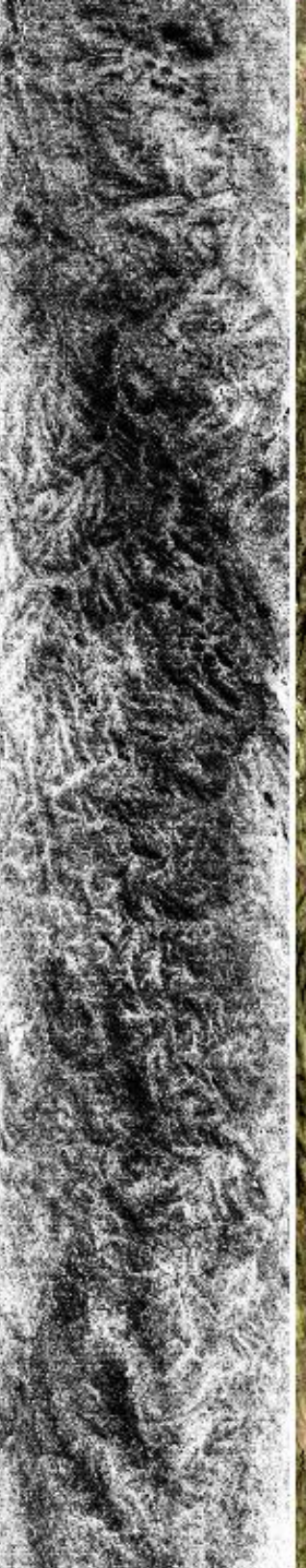
17:02:00



17:04:00



17:06:00



17:08:00



17:00:00

17:02:00

17:04:00

17:06:00

17:08:00

17:08:00

17:10:00

17:12:00

17:14:00

17:16:00



17:08:00

17:10:00

17:12:00

17:14:00

17:16:00

17:18:00

17:20:00

17:22:08



3.77µm (#30)



4.99µm (#38)



10.94µm (#45)  
reverse scale



13.19µm (#48)  
reverse scale



RGB (#46,#42,#35)

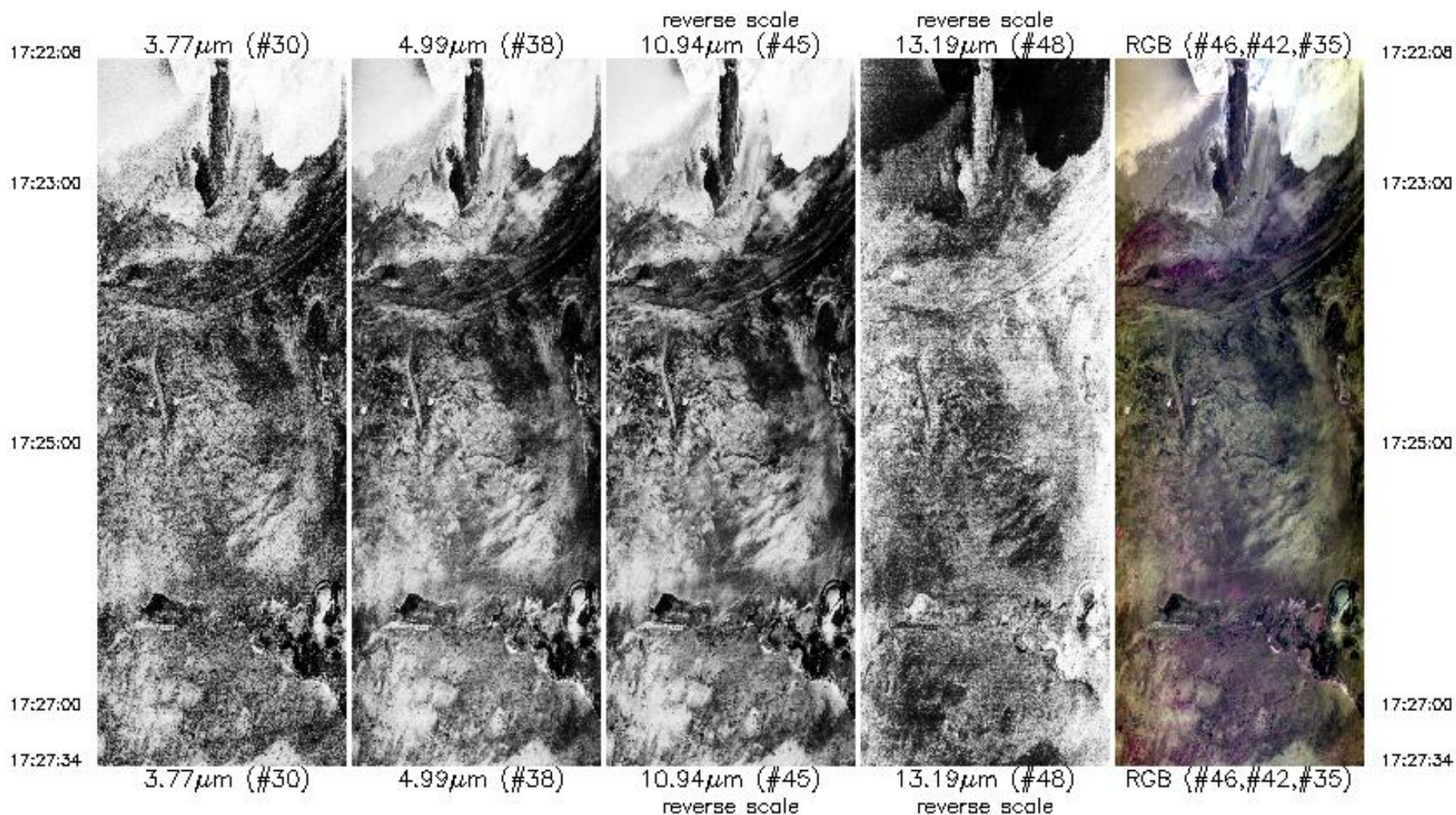
17:18:00

17:20:00

17:22:08

Upper Left Lat, Lon = -22.2°, 28.8°  
 Lower Right Lat, Lon = -20.7°, 26.0°  
 Aircraft Heading = 305.9°  
 Solar Zenith = 104.7°  
 GPS Altitude = 19596. m (MSL)

MODIS Airborne Simulator Browse Imagery  
 SAFARI 2000 Campaign – 01 Sep 2000  
 Botswana  
 Flight #00-155 Track #2



Upper Left Lat, Lon =  $-20.4^{\circ}$ ,  $26.2^{\circ}$   
 Lower Right Lat, Lon =  $-20.3^{\circ}$ ,  $25.4^{\circ}$   
 Aircraft Heading =  $308.5^{\circ}$   
 Solar Zenith =  $108.4^{\circ}$   
 GPS Altitude = 20114. m (MSL)

3.77 $\mu$ m (#30)

4.99 $\mu$ m (#38)

10.94 $\mu$ m (#45)

13.19 $\mu$ m (#48)

RGB (#46,#42,#35)

reverse scale

reverse scale

Upper Left Lat, Lon = -20.4°, 26.2°

Lower Right Lat, Lon = -20.3°, 25.4°

Aircraft Heading = 308.5°

Solar Zenith = 108.4°

GPS Altitude = 20114. m (MSL)

MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign – 01 Sep 2000  
Botswana  
Flight #00-155 Track #3

17:27:58

3.77 $\mu$ m (#30)

4.99 $\mu$ m (#38)

reverse scale  
10.94 $\mu$ m (#45)

reverse scale  
13.19 $\mu$ m (#48)

RGB (#46,#42,#35)

17:27:58

17:28:00

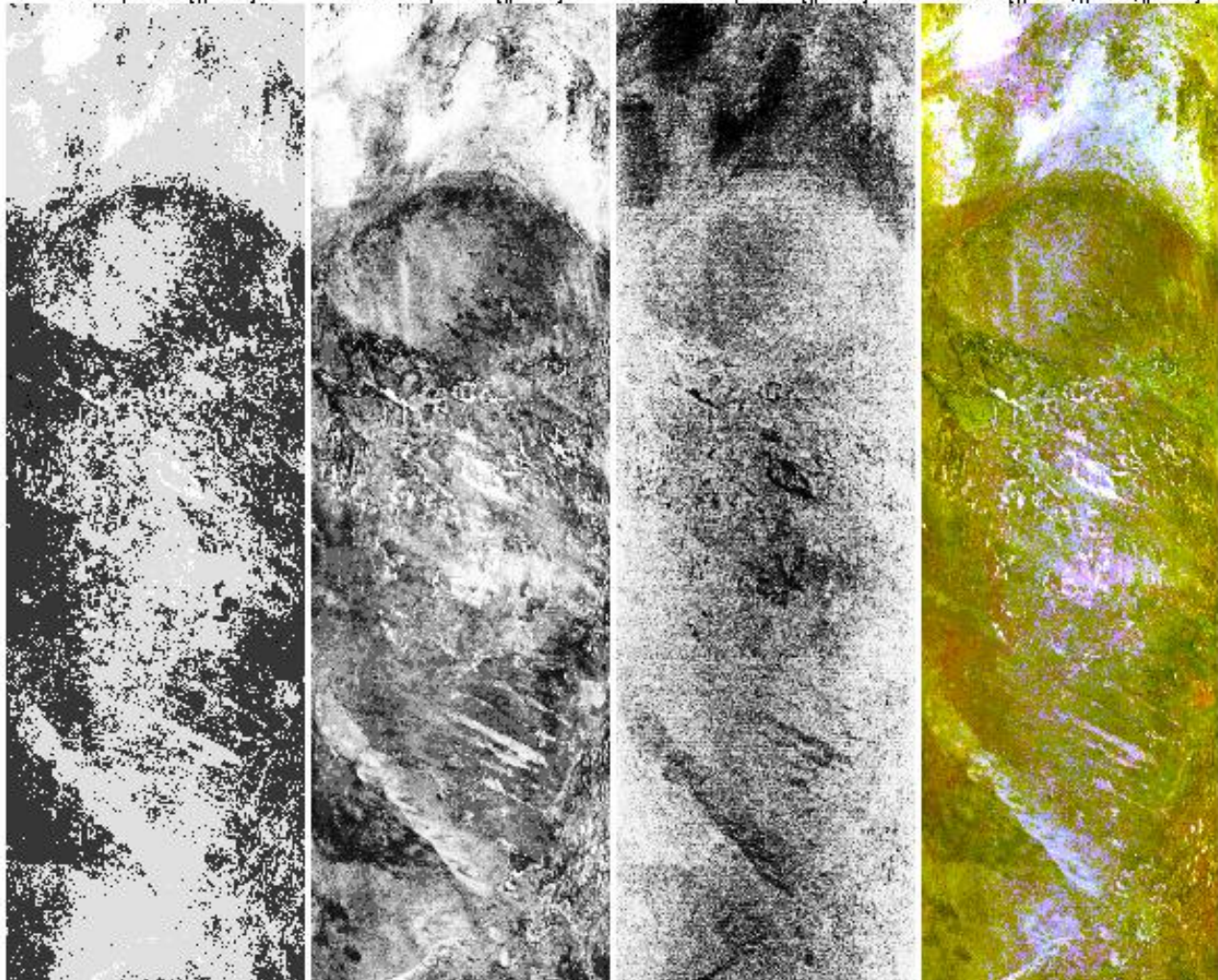
17:28:00

17:30:00

17:30:00

17:32:00

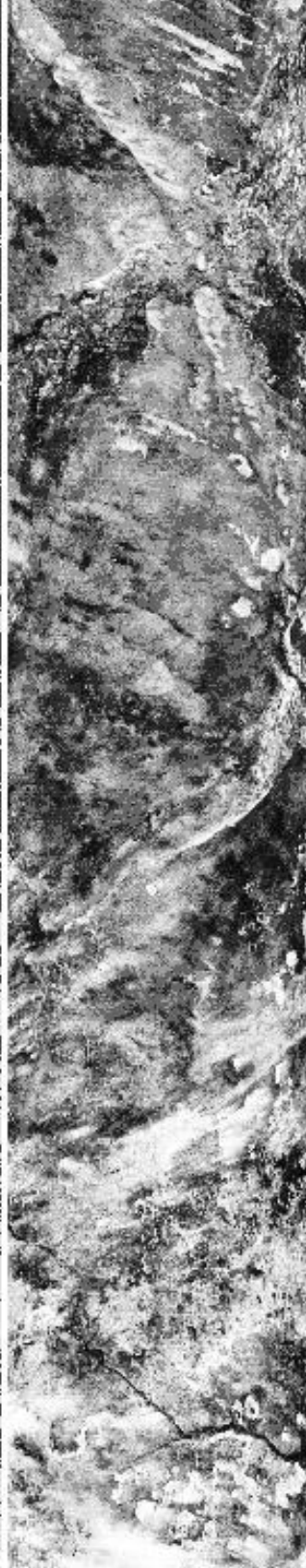
17:32:00



17:32:00



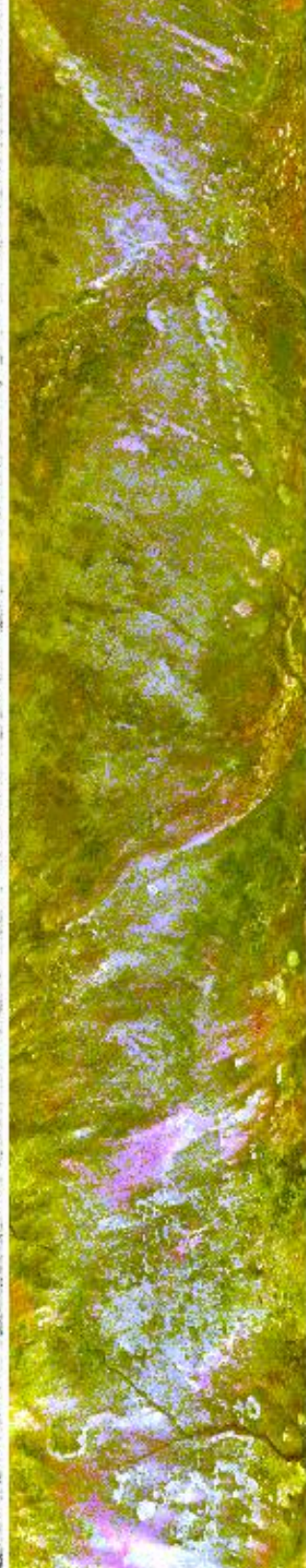
17:34:00



17:36:00



17:38:00



17:40:00

17:32:00

17:34:00

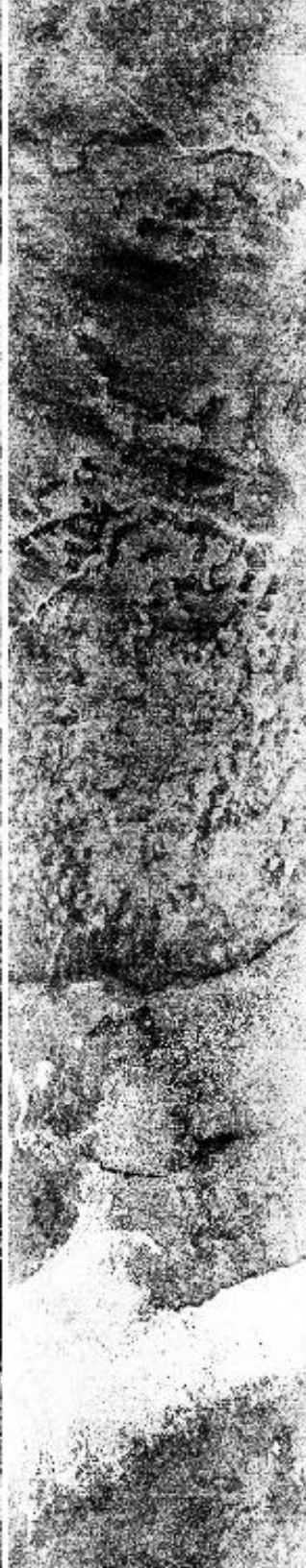
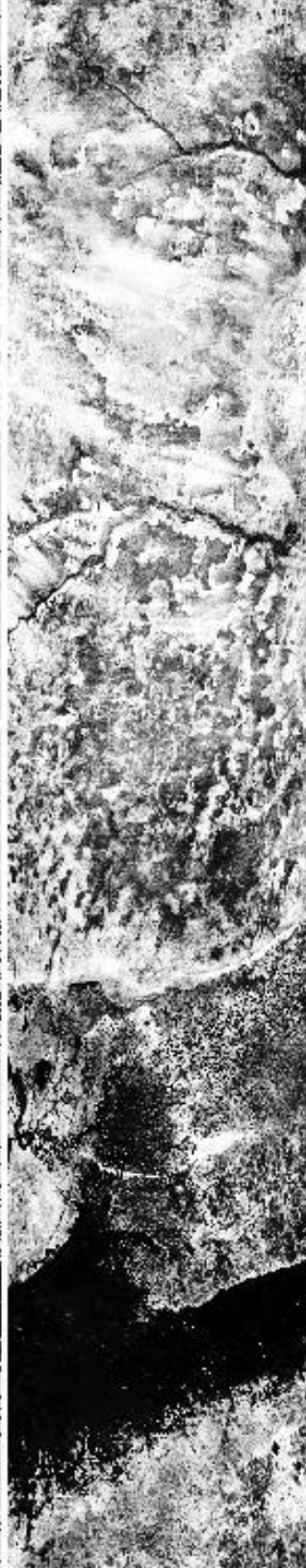
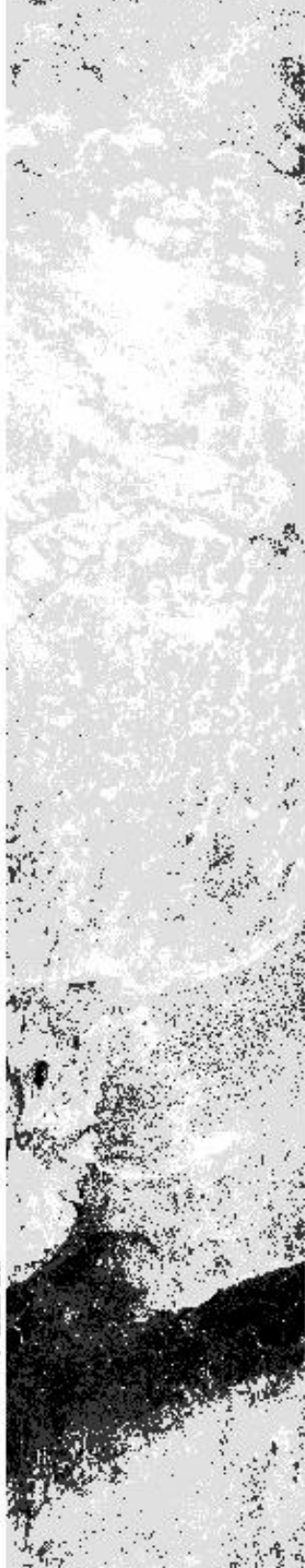
17:36:00

17:38:00

17:40:00

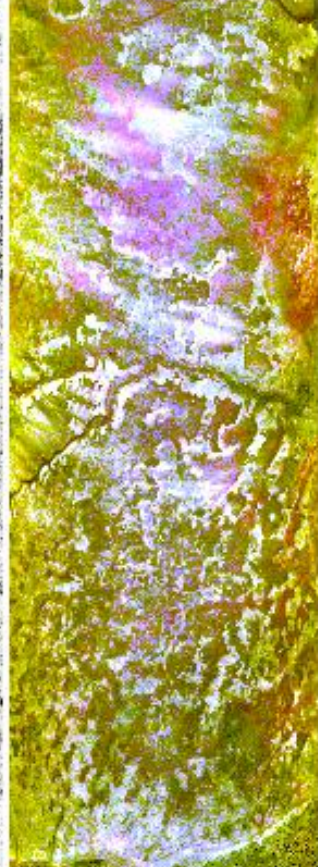
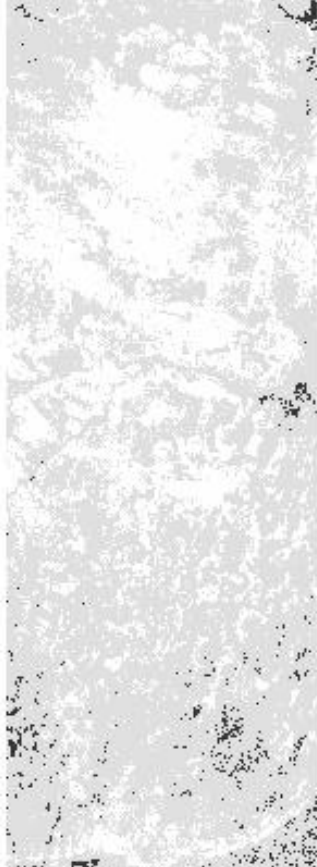


17:40:00



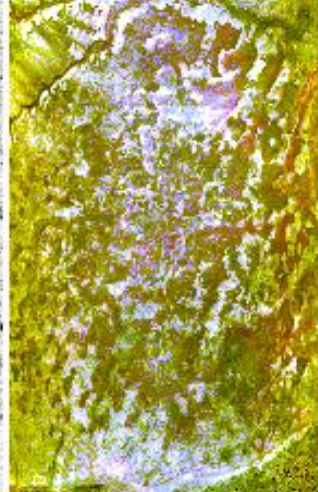
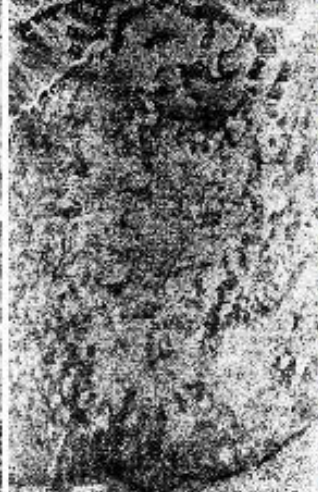
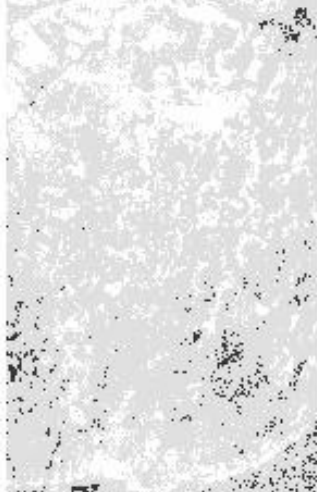
17:40:00

17:42:00



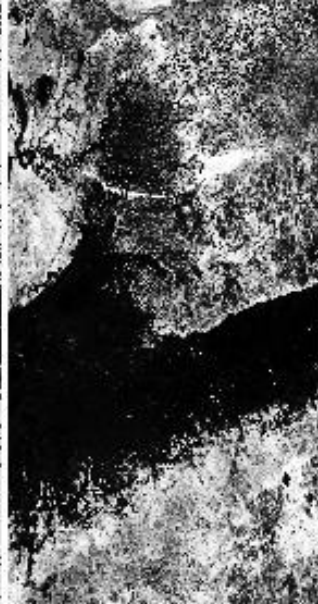
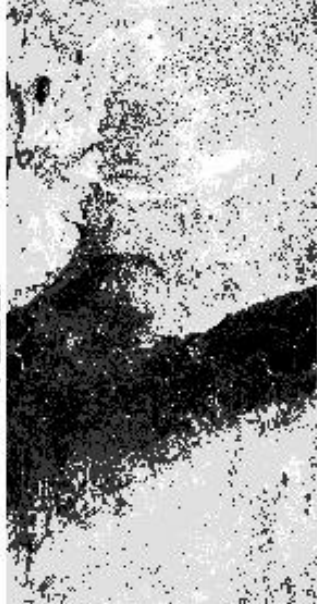
17:42:00

17:44:00



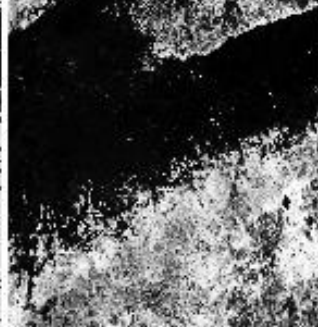
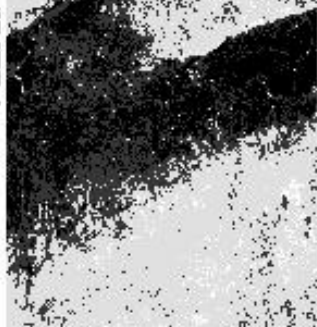
17:44:00

17:46:00

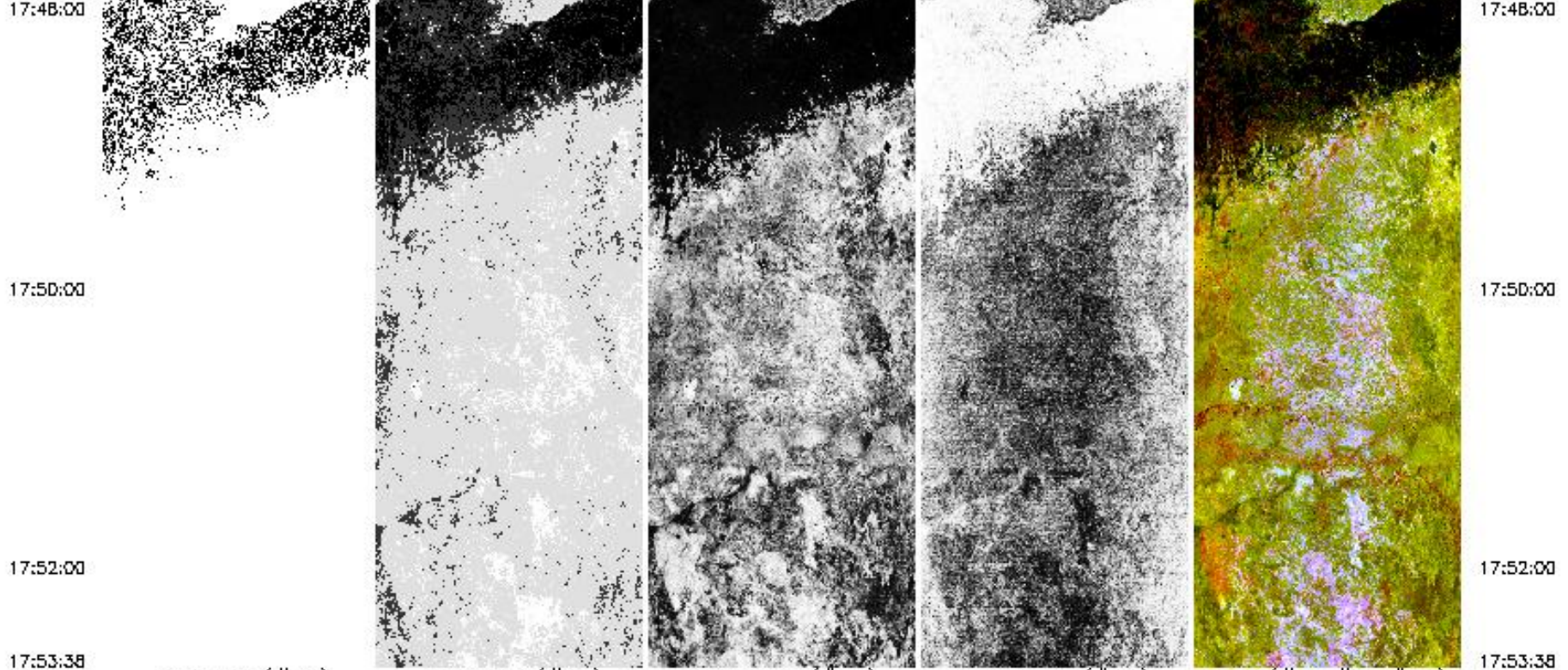


17:46:00

17:48:00



17:48:00



3.77 $\mu$ m (#30)

4.99 $\mu$ m (#38)

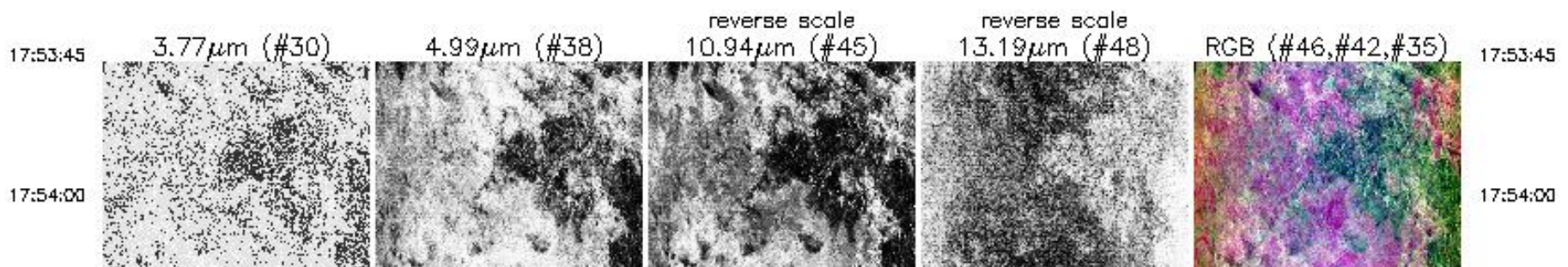
10.94 $\mu$ m (#45)  
reverse scale

13.19 $\mu$ m (#48)  
reverse scale

RGB (#46,#42,#35)

Upper Left Lat, Lon =  $-20.0^\circ$ ,  $25.6^\circ$   
 Lower Right Lat, Lon =  $-17.6^\circ$ ,  $23.8^\circ$   
 Aircraft Heading =  $325.6^\circ$   
 Solar Zenith =  $109.3^\circ$   
 GPS Altitude = 19940. m (MSL)

MODIS Airborne Simulator Browse Imagery  
 SAFARI 2000 Campaign – 01 Sep 2000  
 Botswana  
 Flight #00–155 Track #4



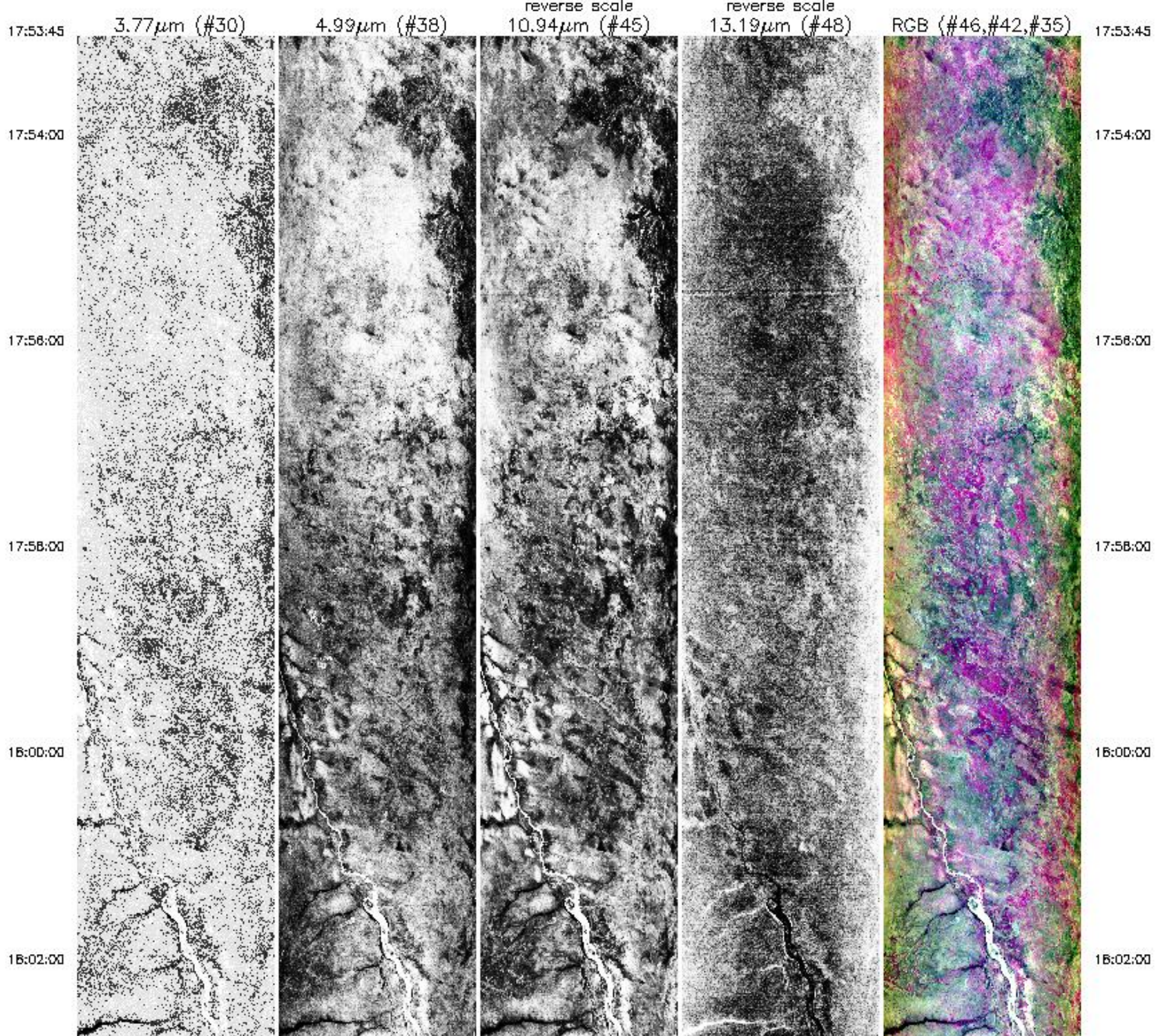
3.77 $\mu$ m (#30)

4.99 $\mu$ m (#38)

reverse scale  
10.94 $\mu$ m (#45)

reverse scale  
13.19 $\mu$ m (#48)

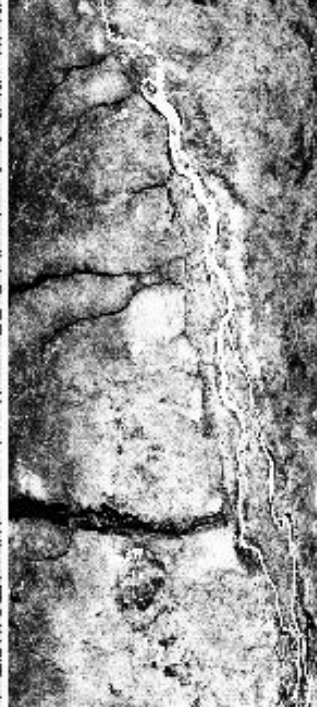
RGB (#46,#42,#35)



16:02:00



3.77µm (#30)



4.99µm (#38)



10.94µm (#45)  
reverse scale



13.19µm (#48)  
reverse scale



RGB (#46,#42,#35)

16:02:00

16:04:00

16:08:00

16:04:00

16:08:00

Upper Left Lat, Lon = -17.5°, 24.1°

Lower Right Lat, Lon = -16.3°, 23.3°

Aircraft Heading = 335.6°

Solar Zenith = 113.8°

GPS Altitude = 1994.4 m (MSL)

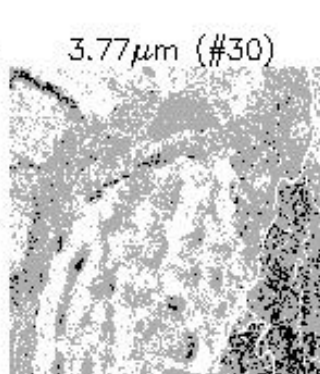
MODIS Airborne Simulator Browse Imagery

SAFARI 2000 Campaign - 01 Sep 2000

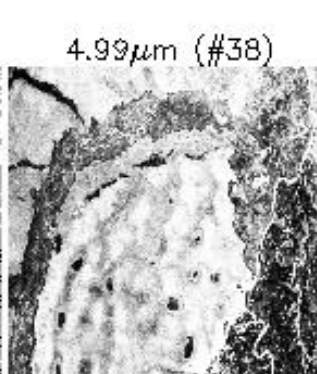
Botswana

Flight #00-155 Track #5

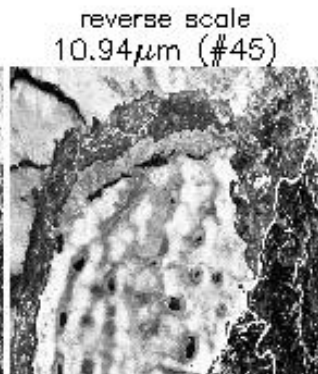
16:08:02



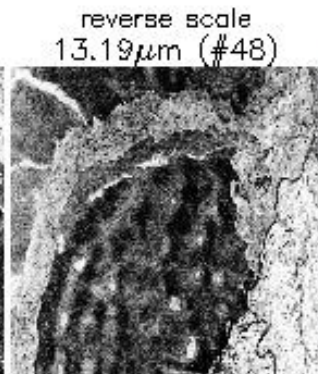
3.77µm (#30)



4.99µm (#38)



reverse scale  
10.94µm (#45)



reverse scale  
13.19µm (#48)



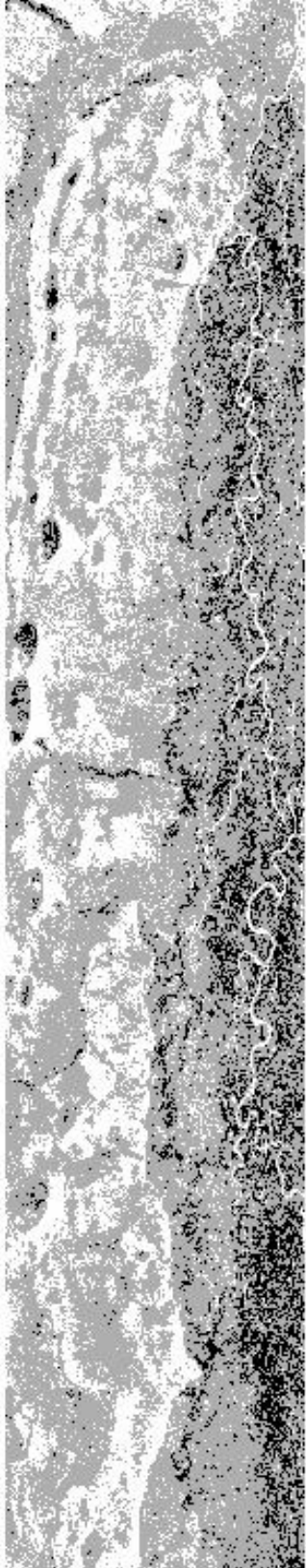
RGB (#46,#42,#35)

16:08:02

16:07:00

16:07:00

16:07:00



16:08:00



16:11:00



16:13:00



16:15:00



16:07:00

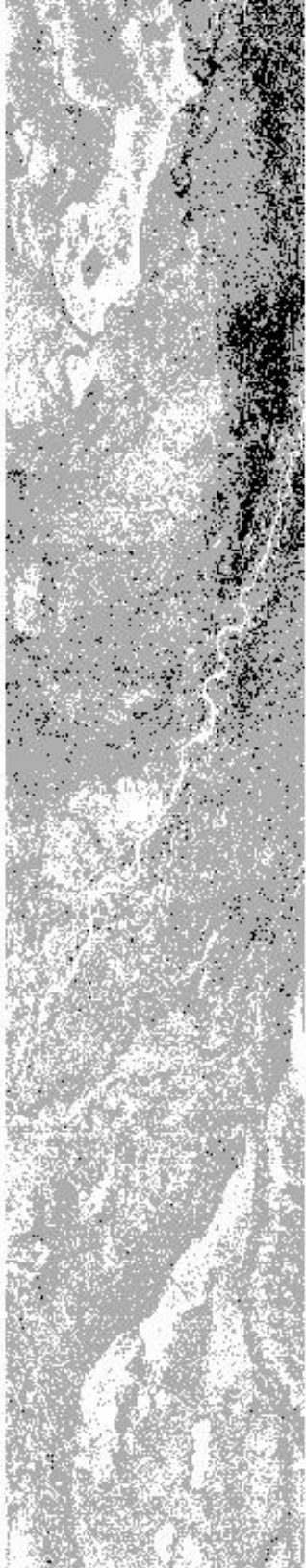
16:08:00

16:11:00

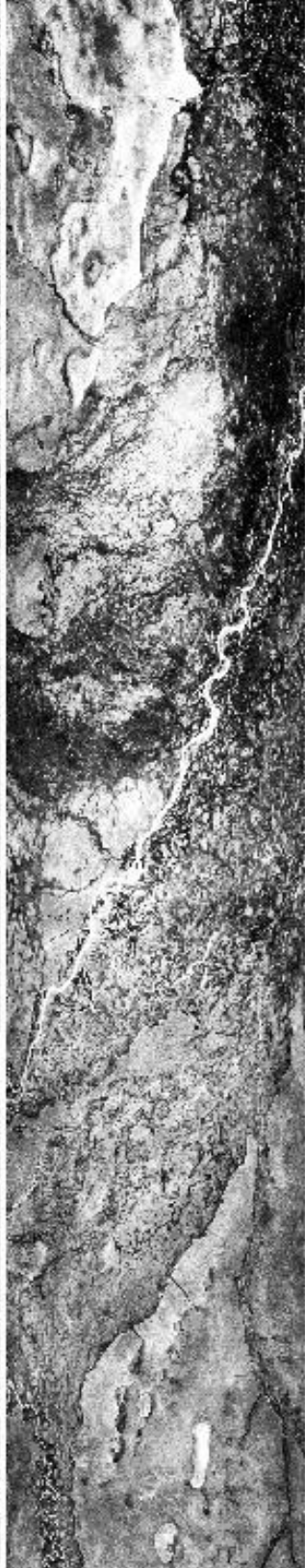
16:13:00

16:15:00

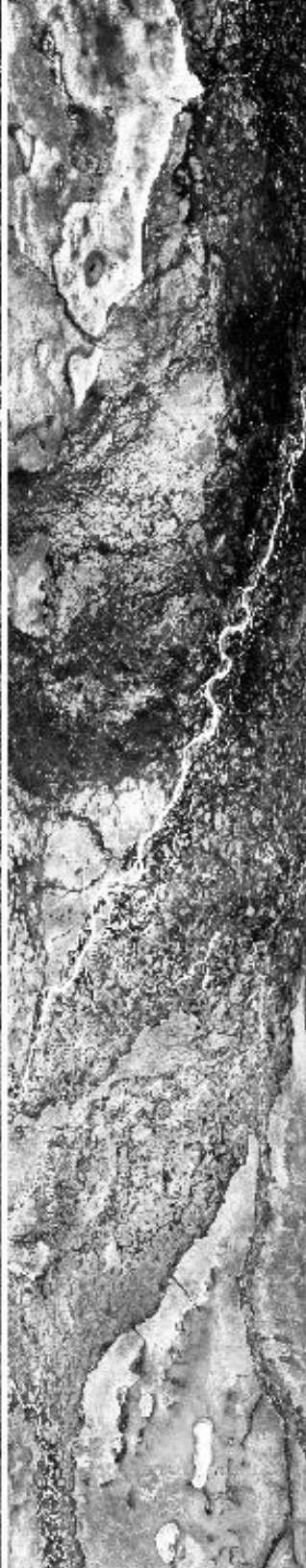
16:15:00



16:17:00



16:19:00



16:21:00



16:23:00



16:15:00

16:17:00

16:19:00

16:21:00

16:23:00

16:23:00



3.77µm (#30)



4.99µm (#38)



10.94µm (#45)  
reverse scale



13.19µm (#48)  
reverse scale



RGB (#46,#42,#35)

16:23:00

16:24:27

16:24:27

Upper Left Lat, Lon = -16.2°, 23.6°

Lower Right Lat, Lon = -14.2°, 22.7°

Aircraft Heading = 342.6°

Solar Zenith = 116.3°

GPS Altitude = 19993. m (MSL)

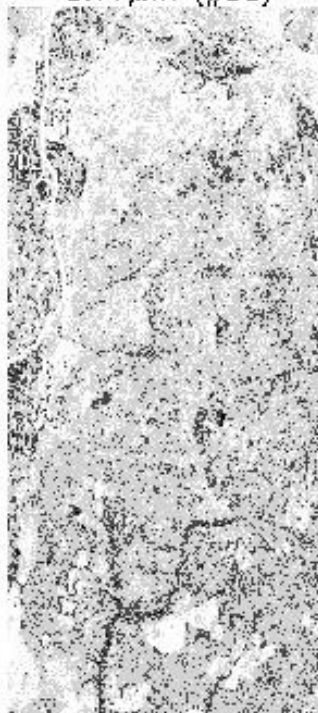
MODIS Airborne Simulator Browse Imagery

SAFARI 2000 Campaign - 01 Sep 2000

Zambia

Flight #00-155 Track #6

16:28:59



3.77µm (#30)



4.99µm (#38)



reverse scale  
10.94µm (#45)



reverse scale  
13.19µm (#48)



RGB (#46,#42,#35)

16:28:59

16:29:00

16:29:00

16:31:00

16:31:00

16:31:00



16:33:00



16:35:00



16:37:00



16:39:00



16:31:00

16:33:00

16:35:00

16:37:00

16:39:00



16:39:00

16:41:00

16:43:00

16:45:00

16:47:18



16:39:00

16:41:00

16:43:00

16:45:00

16:47:18

3.77 $\mu$ m (#30)

4.99 $\mu$ m (#38)

10.94 $\mu$ m (#45)  
reverse scale

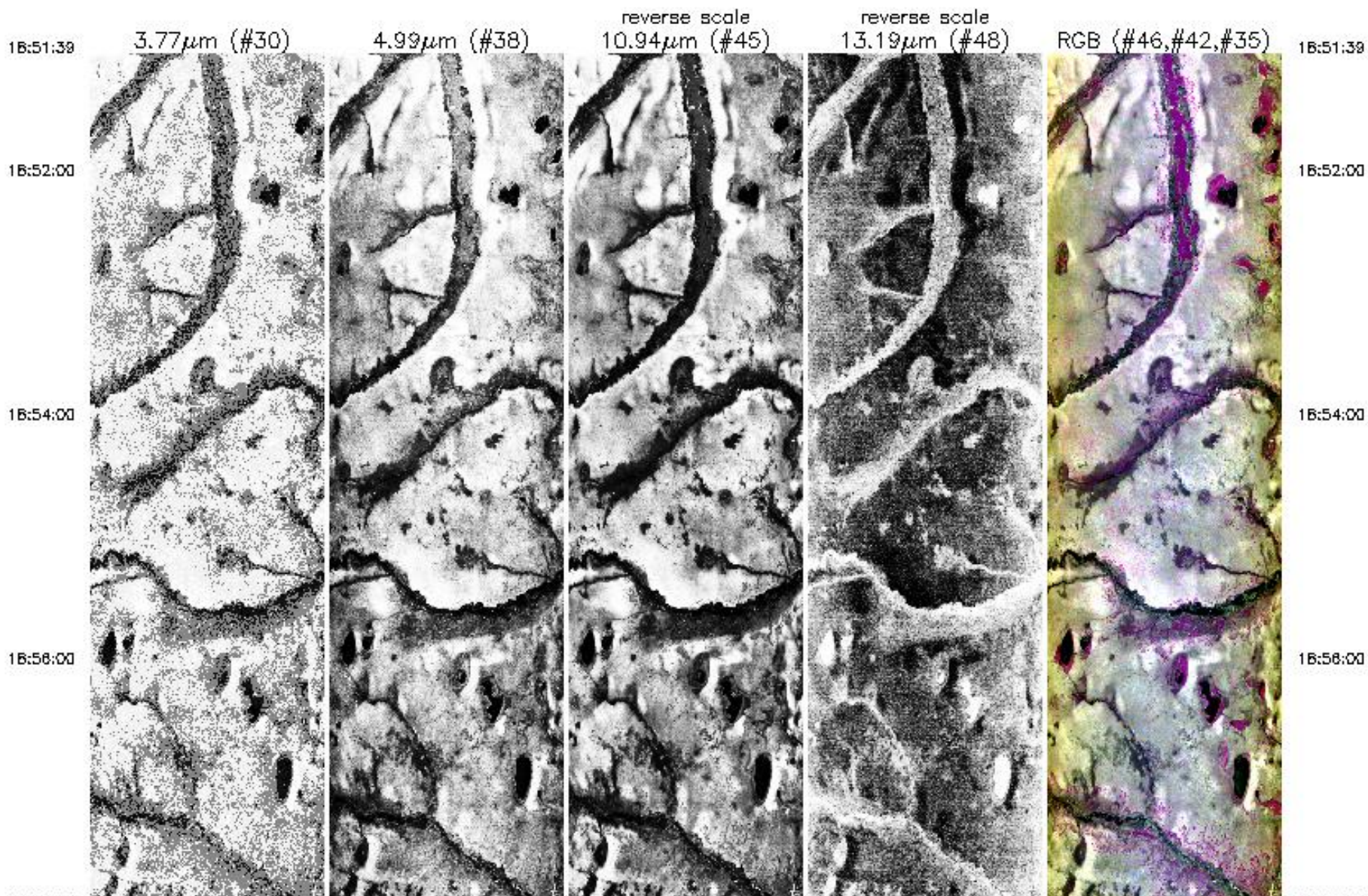
13.19 $\mu$ m (#48)  
reverse scale

RGB (#46,#42,#35)

Upper Left Lat, Lon = -14.2°, 23.1°  
Lower Right Lat, Lon = -16.1°, 23.9°  
Aircraft Heading = 164.6°  
Solar Zenith = 121.3°  
GPS Altitude = 19968. m (MSL)

Upper Left Lat, Lon = 11.2°, 23.1°  
Lower Right Lat, Lon = -16.1°, 23.9°  
Aircraft Heading = 164.6°  
Solar Zenith = 121.3°  
GPS Altitude = 19968. m (MSL)

MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign - 01 Sep 2000  
Zambia  
Flight #00-155 Track #7



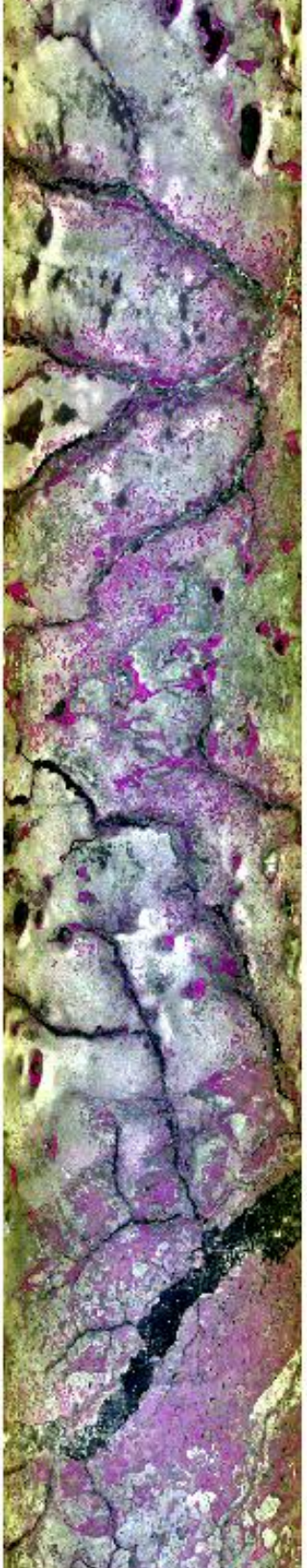
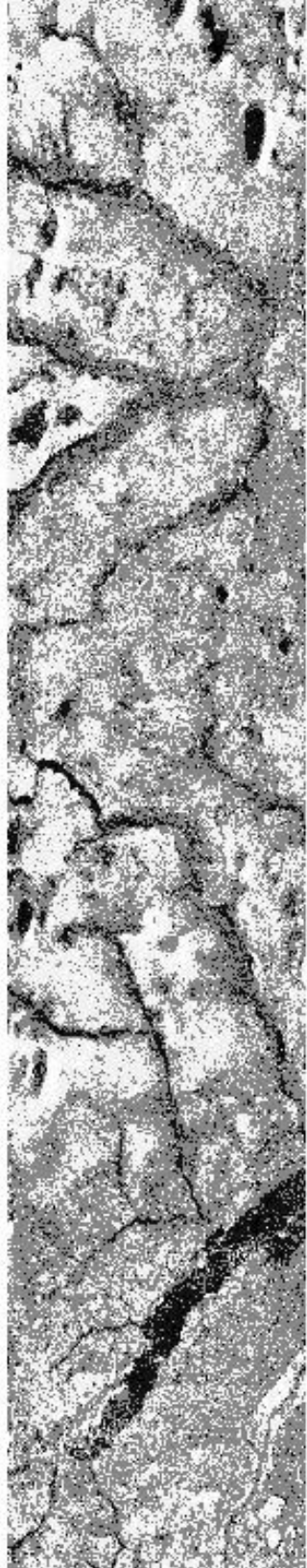
18:58:00

19:00:00

19:02:00

19:04:00

19:06:00



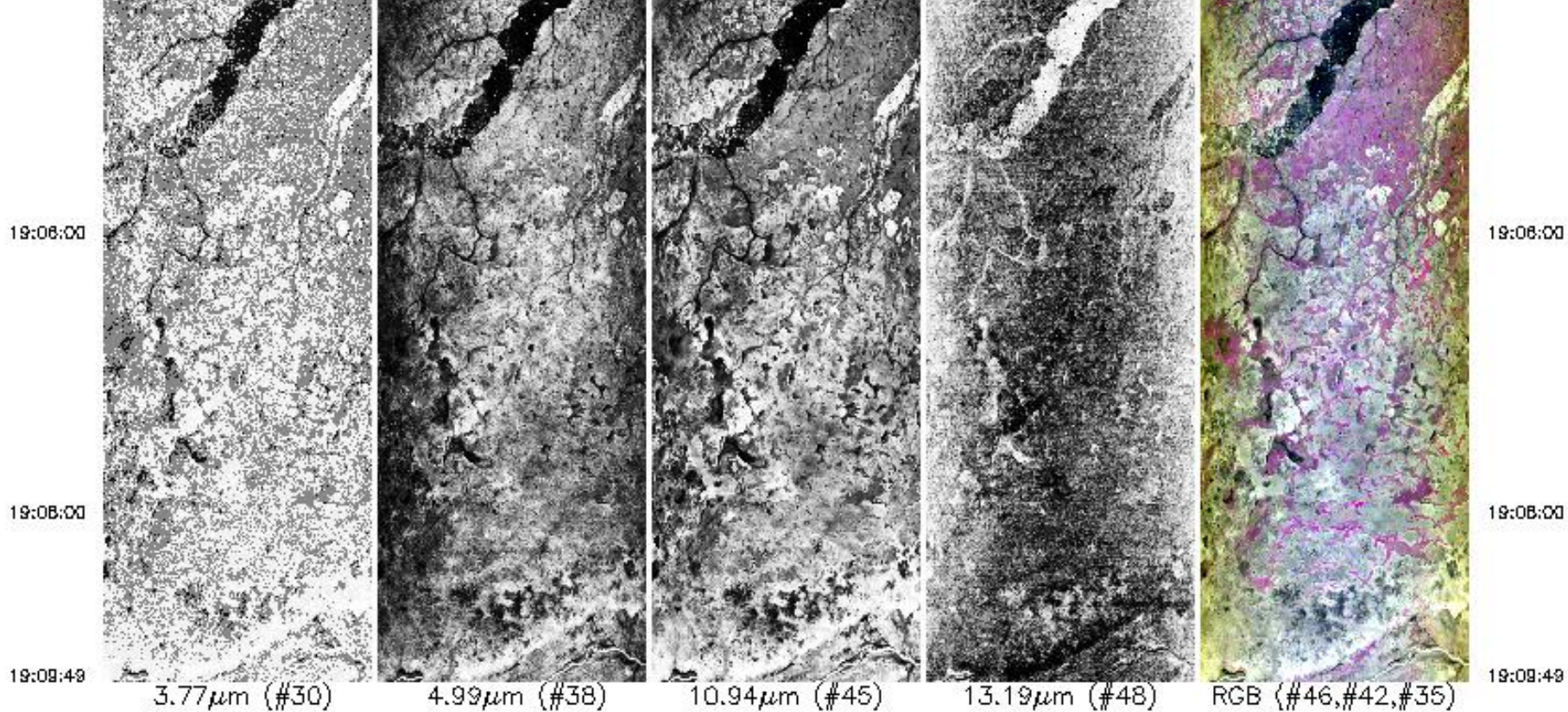
18:58:00

19:00:00

19:02:00

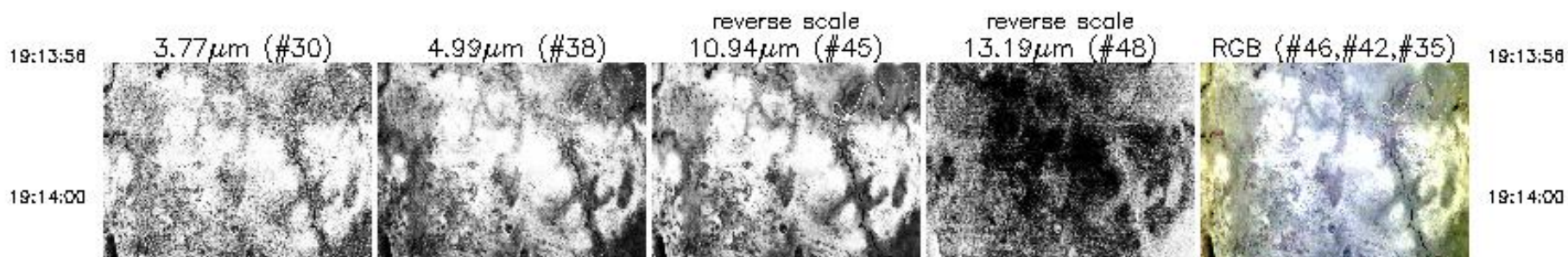
19:04:00

19:06:00



Upper Left Lat, Lon =  $-16.0^{\circ}$ ,  $24.3^{\circ}$   
 Lower Right Lat, Lon =  $-14.1^{\circ}$ ,  $23.4^{\circ}$   
 Aircraft Heading =  $351.1^{\circ}$   
 Solar Zenith =  $127.9^{\circ}$   
 GPS Altitude = 20004. m (MSL)

MODIS Airborne Simulator Browse Imagery  
 SAFARI 2000 Campaign – 01 Sep 2000  
 Zambia  
 Flight #00–155 Track #8



19:13:58

3.77 $\mu$ m (#30)

4.99 $\mu$ m (#38)

reverse scale  
10.94 $\mu$ m (#45)

reverse scale  
13.19 $\mu$ m (#48)

RGB (#46,#42,#35)

19:13:58

19:14:00

19:14:00

19:16:00

19:16:00

19:18:00

19:18:00

19:20:00

19:20:00

19:22:00

19:22:00



19:22:00



19:24:00



19:26:00



19:28:00



19:30:00



19:22:00

19:24:00

19:26:00

19:28:00

19:30:00

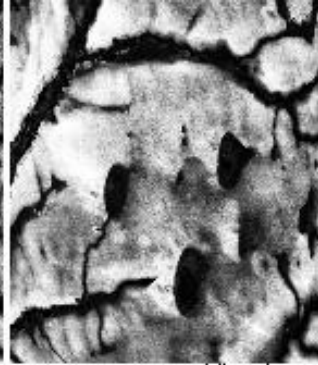
19:30:00



3.77µm (#30)



4.99µm (#38)



10.94µm (#45)  
reverse scale



13.19µm (#48)  
reverse scale



RGB (#46,#42,#35)

19:30:00

19:32:11

Upper Left Lat, Lon =  $-14.0^\circ$ ,  $23.8^\circ$

Lower Right Lat, Lon =  $-15.9^\circ$ ,  $24.6^\circ$

Aircraft Heading =  $163.6^\circ$

Solar Zenith =  $132.9^\circ$

GPS Altitude = 19961. m (MSL)

MODIS Airborne Simulator Browse Imagery

SAFARI 2000 Campaign - 01 Sep 2000

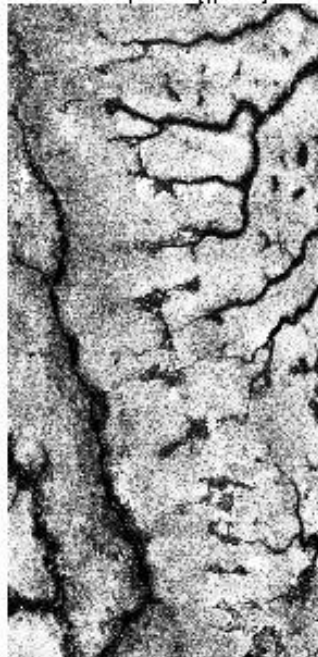
Zambia

Flight #00-155 Track #9

19:32:11

19:36:13

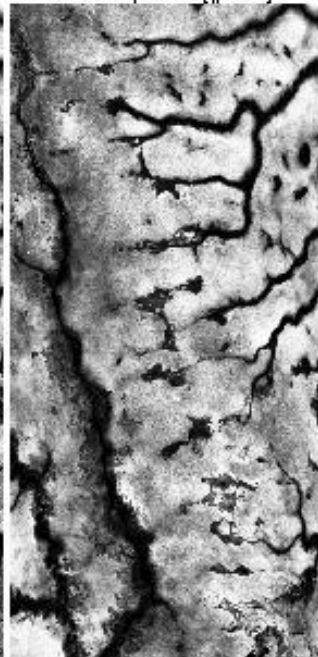
3.77µm (#30)



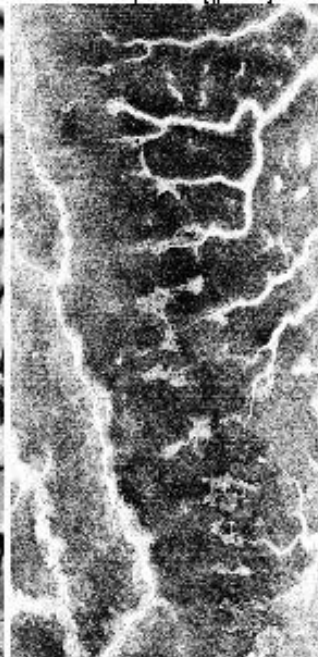
4.99µm (#38)



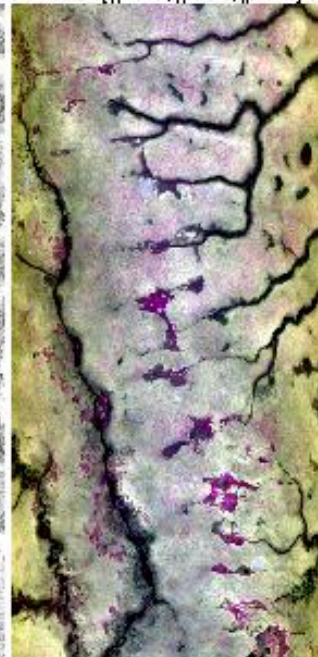
reverse scale  
10.94µm (#45)



reverse scale  
13.19µm (#48)



RGB (#46,#42,#35)



19:36:13

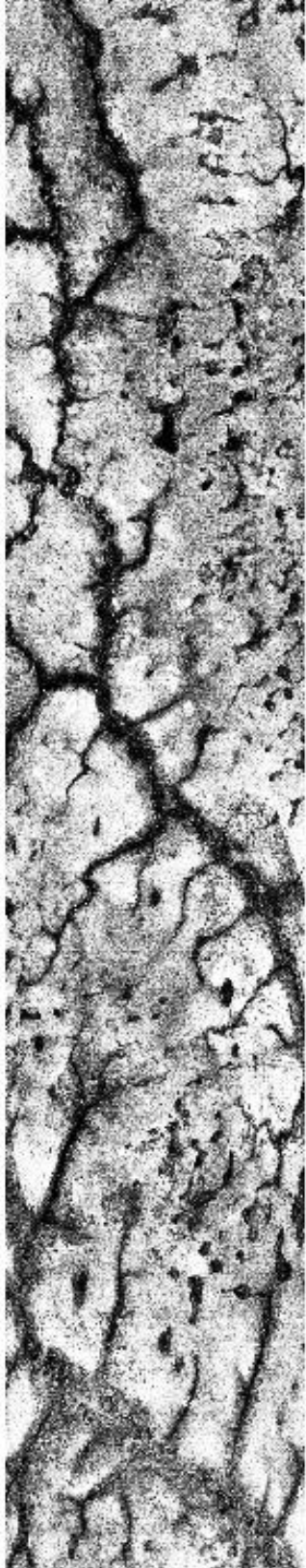
19:37:00

19:39:00

19:37:00

19:39:00

19:39:00



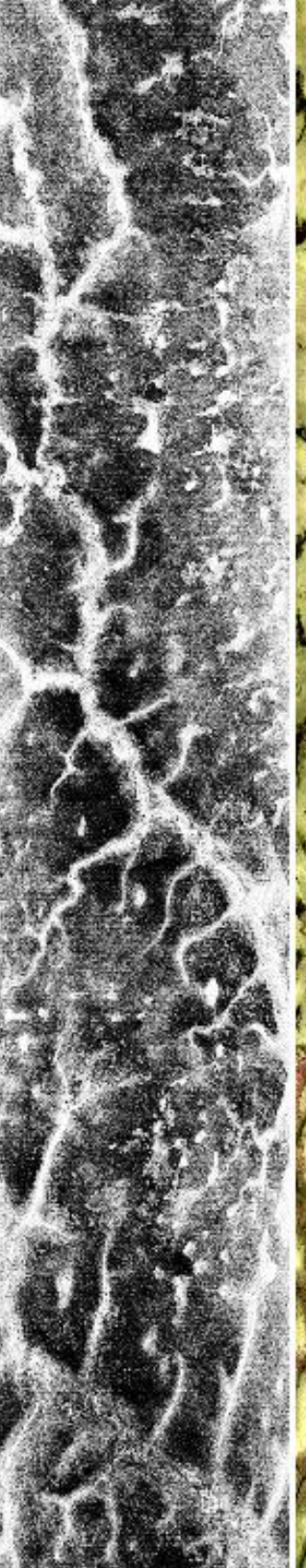
19:41:00



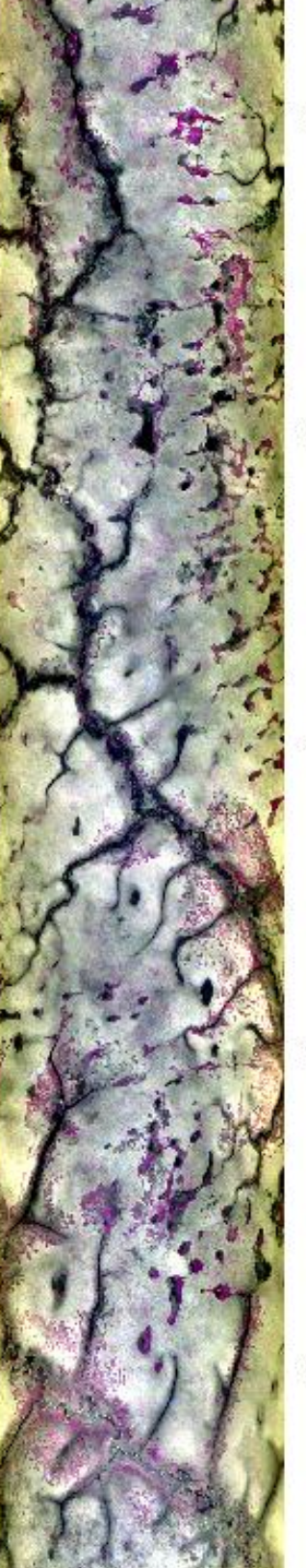
19:43:00



19:45:00



19:47:00



19:39:00

19:41:00

19:43:00

19:45:00

19:47:00



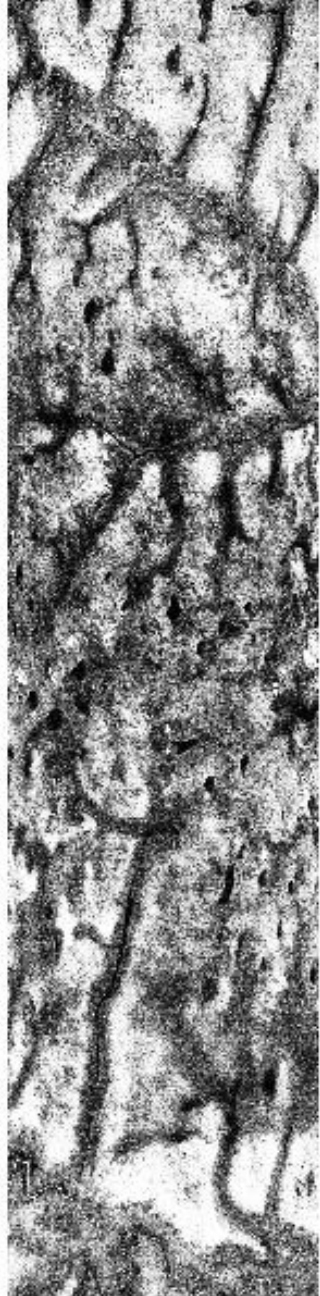
19:47:00

19:48:00

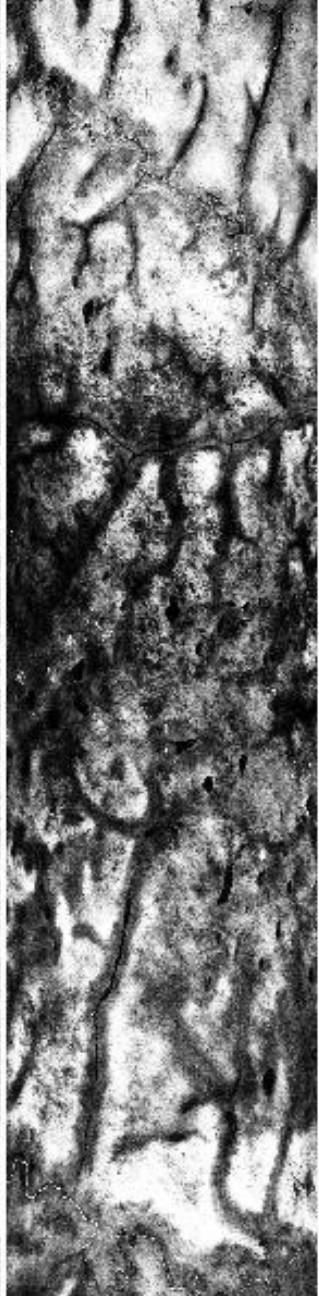
19:51:00

19:53:00

19:54:37



3.77µm (#30)



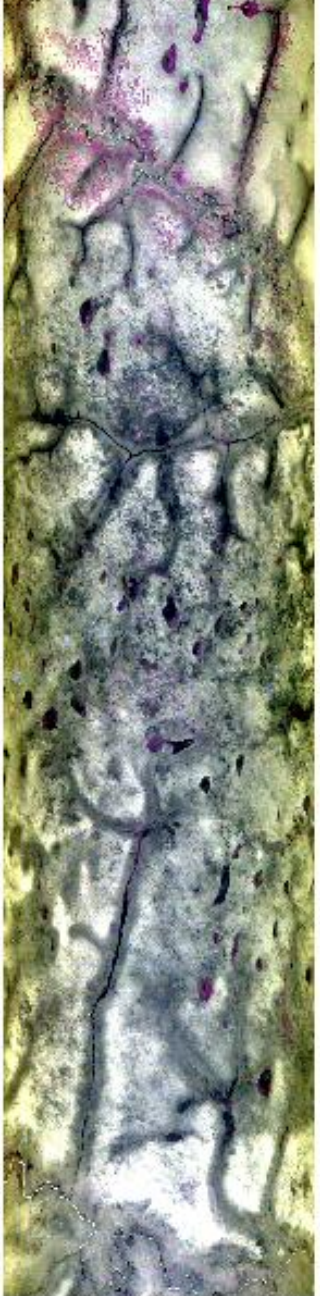
4.99µm (#38)



10.94µm (#45)  
reverse scale



13.19µm (#48)  
reverse scale



RGB (#46, #42, #35)

19:47:00

19:48:00

19:51:00

19:53:00

19:54:37

Upper Left Lat, Lon =  $-15.9^{\circ}$ ,  $24.9^{\circ}$   
 Lower Right Lat, Lon =  $-13.9^{\circ}$ ,  $24.1^{\circ}$   
 Aircraft Heading =  $350.4^{\circ}$   
 Solar Zenith =  $139.2^{\circ}$   
 GPS Altitude = 20025. m (MSL)

reverse scale

Upper Left Lat, Lon = -15.9°, 24.9°

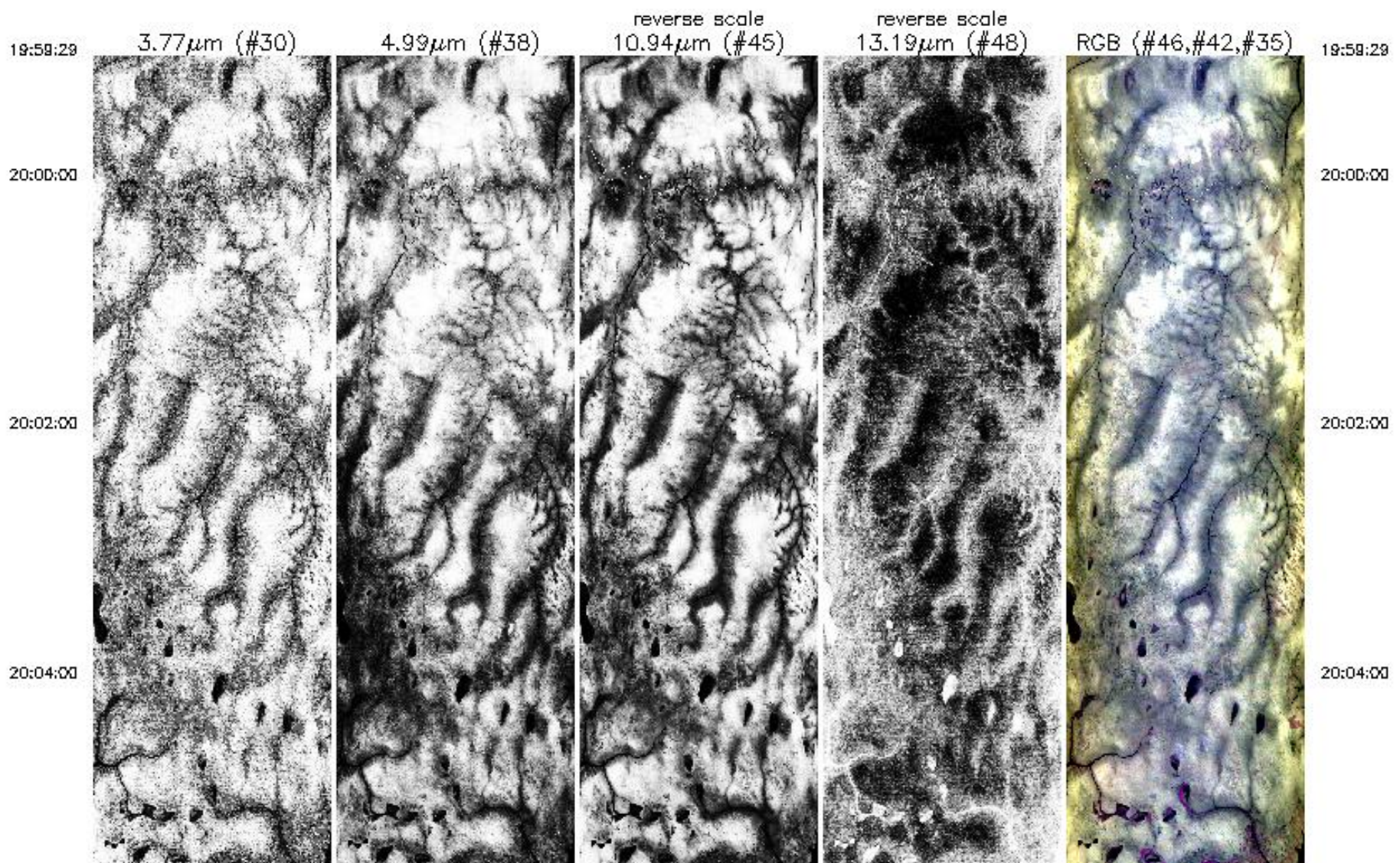
Lower Right Lat, Lon = -13.9°, 24.1°

Aircraft Heading = 350.4°

Solar Zenith = 139.2°

GPS Altitude = 20025. m (MSL)

MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign - 01 Sep 2000  
Zambia  
Flight #00-155 Track #10



20:04:00



20:06:00



20:08:00



20:10:00



20:12:00



20:04:00

20:06:00

20:08:00

20:10:00

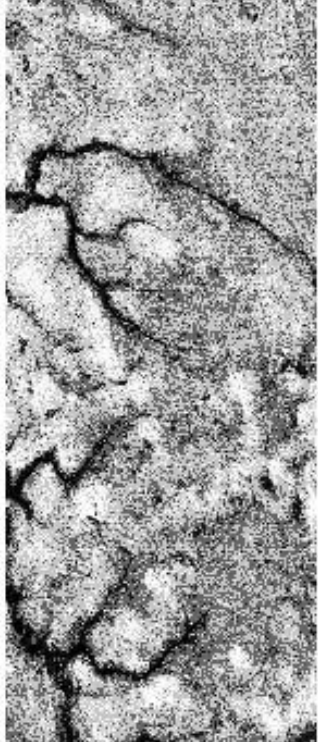
20:12:00

20:12:00

20:14:00

20:16:00

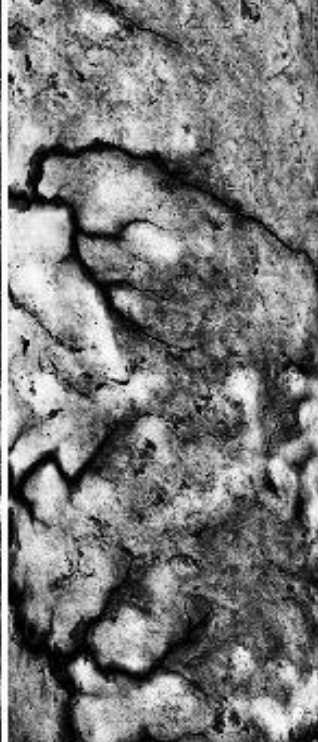
20:16:57



3.77μm (#30)



4.99μm (#38)



10.94μm (#45)  
reverse scale



13.19μm (#48)  
reverse scale



RGB (#46,#42,#35)

20:12:00

20:14:00

20:16:00

20:16:57

Upper Left Lat, Lon = -13.9°, 24.5°  
Lower Right Lat, Lon = -15.7°, 25.3°  
Aircraft Heading = 163.0°  
Solar Zenith = 144.6°  
GPS Altitude = 19894. m (MSL)

MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign - 01 Sep 2000  
Zambia  
Flight #00-155 Track #11

20:17:28

20:18:00



3.77μm (#30)



4.99μm (#38)



reverse scale  
10.94μm (#45)



reverse scale  
13.19μm (#48)



RGB (#46,#42,#35)

20:17:28

20:18:00

20:17:28

3.77 $\mu\text{m}$  (#30)

4.99 $\mu\text{m}$  (#38)

10.94 $\mu\text{m}$  (#45)

13.19 $\mu\text{m}$  (#48)

RGB (#46,#42,#35)

20:17:28

20:18:00

20:18:00

20:20:00

20:20:00

20:22:00

20:22:00

20:24:00

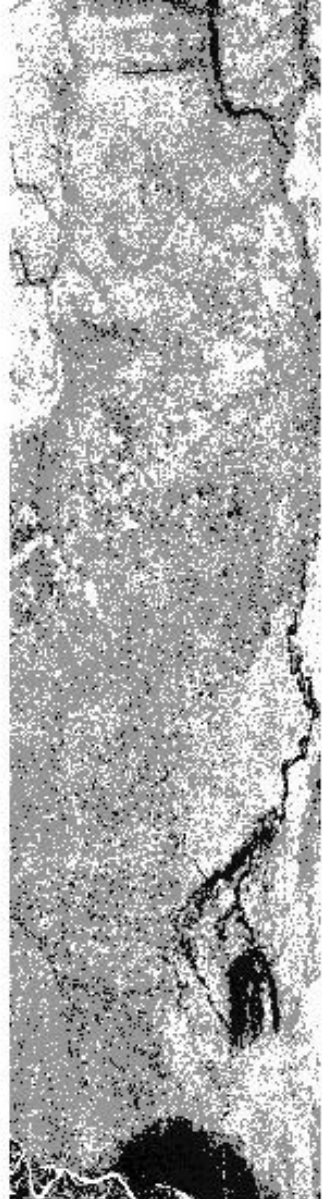
20:24:00

20:26:00

20:26:00



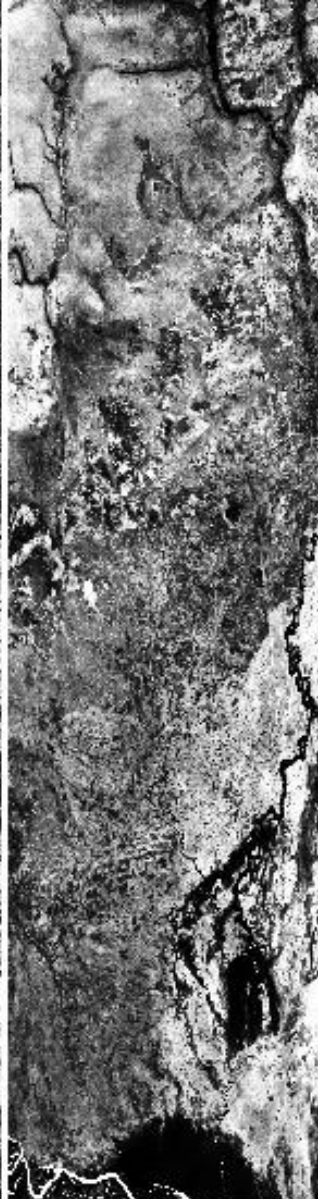
20:26:00  
20:28:00  
20:30:00  
20:32:00  
20:32:55



3.77µm (#30)



4.99µm (#38)



10.94µm (#45)  
reverse scale



13.19µm (#48)  
reverse scale



RGB (#46,#42,#35)

20:26:00  
20:28:00  
20:30:00  
20:32:00  
20:32:55

Upper Left Lat, Lon = -15.8°, 25.0°  
Lower Right Lat, Lon = -17.6°, 25.1°  
Aircraft Heading = 192.4°  
Solar Zenith = 149.1°  
GPS Altitude = 19984. m (MSL)

Lower Right Lat, Lon = -17.6°, 25.1°

Aircraft Heading = 192.4°

Solar Zenith = 149.1°

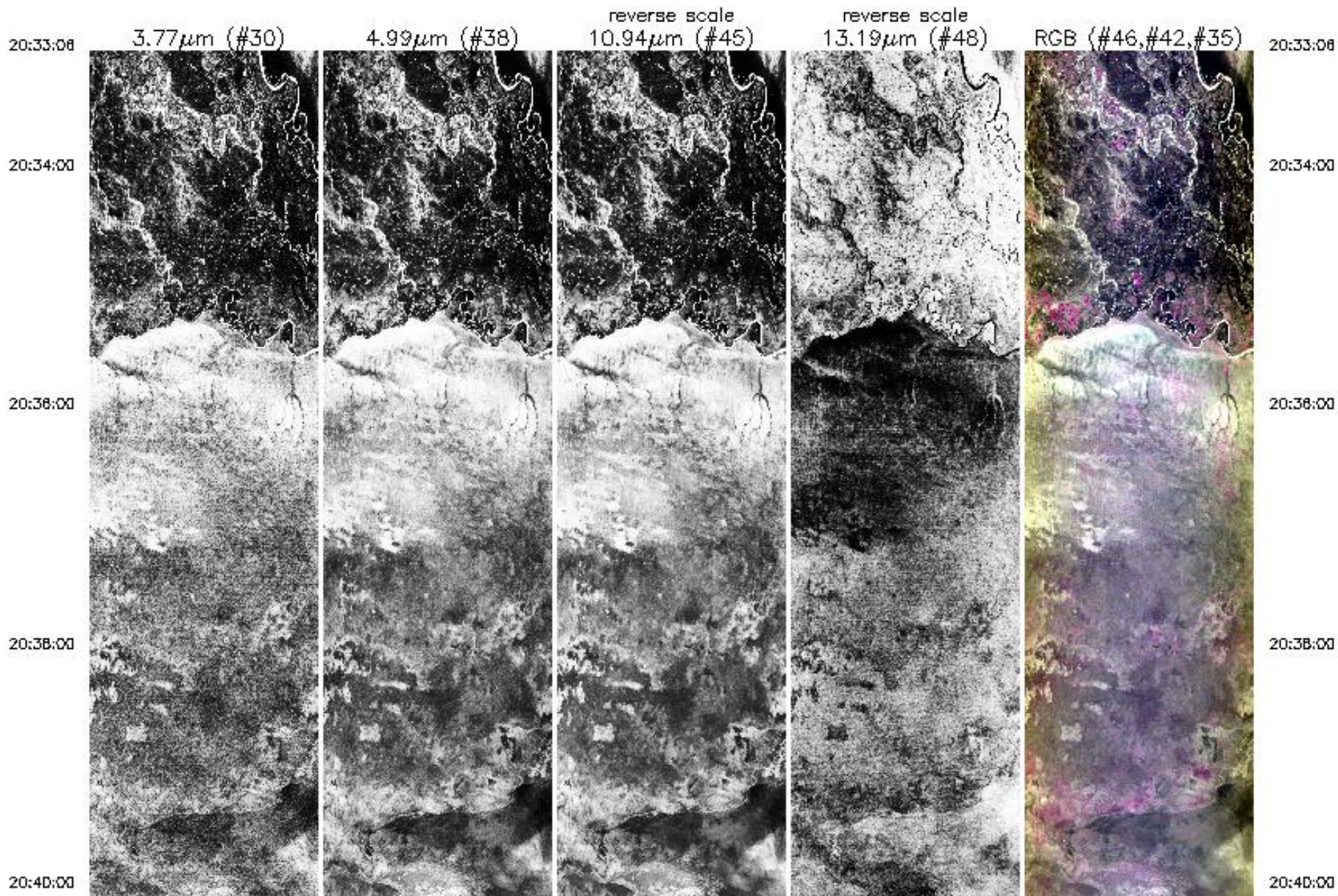
GPS Altitude = 19984. m (MSL)

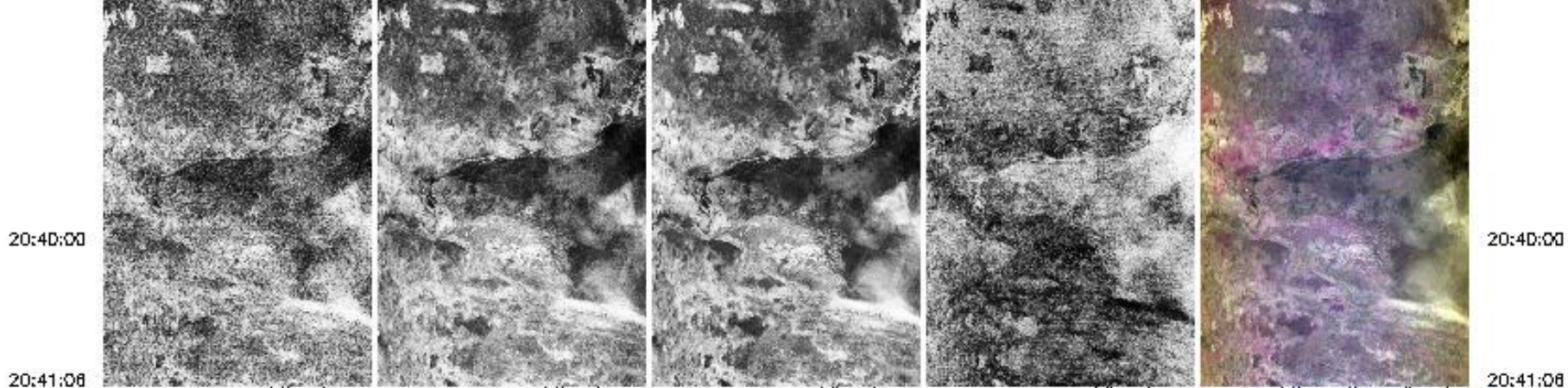
MODIS Airborne Simulator Browse Imagery

SAFARI 2000 Campaign - 01 Sep 2000

Zambia, Botswana

Flight #00-155 Track #12





3.77µm (#30)

4.99µm (#38)

10.94µm (#45)  
reverse scale

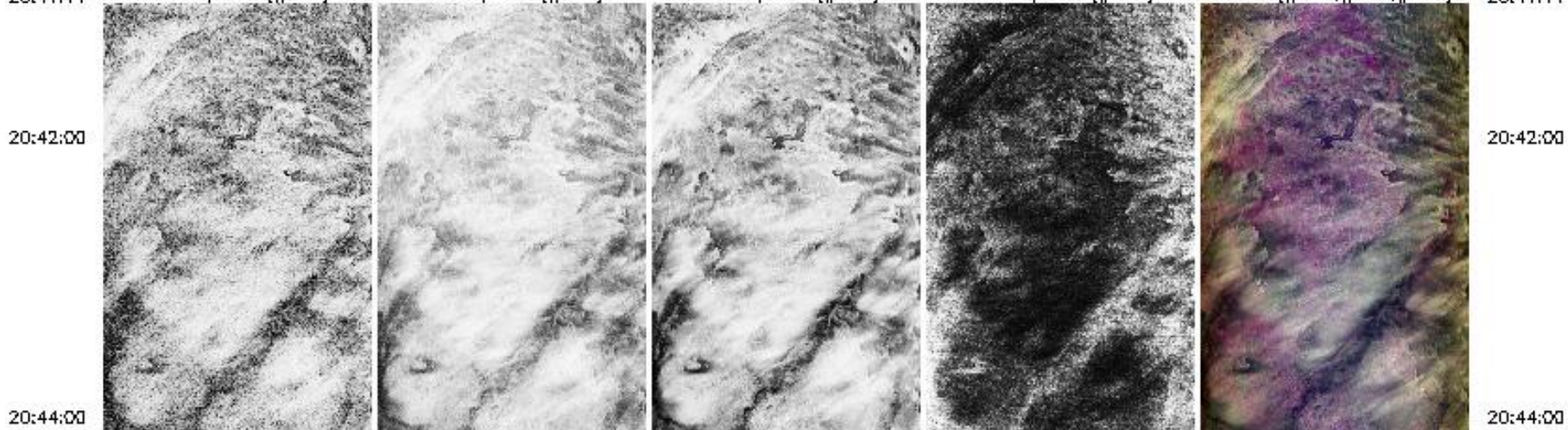
13.19µm (#48)  
reverse scale

RGB (#46,#42,#35)

Upper Left Lat, Lon = -17.6°, 24.7°  
 Lower Right Lat, Lon = -18.5°, 25.2°  
 Aircraft Heading = 179.9°  
 Solar Zenith = 152.1°  
 GPS Altitude = 20021. m (MSL)

MODIS Airborne Simulator Browse Imagery  
 SAFARI 2000 Campaign - 01 Sep 2000  
 Botswana  
 Flight #00-155 Track #13

20:41:14 3.77µm (#30) 4.99µm (#38) reverse scale 10.94µm (#45) reverse scale 13.19µm (#48) RGB (#46,#42,#35) 20:41:14



3.77µm (#30)

4.99µm (#38)

reverse scale  
10.94µm (#45)

reverse scale  
13.19µm (#48)

RGB (#46,#42,#35)

20:44:00

20:44:00



20:44:00

20:46:00

20:48:00

20:50:00

20:52:00



20:44:00

20:46:00

20:48:00

20:50:00

20:52:00

20:52:00



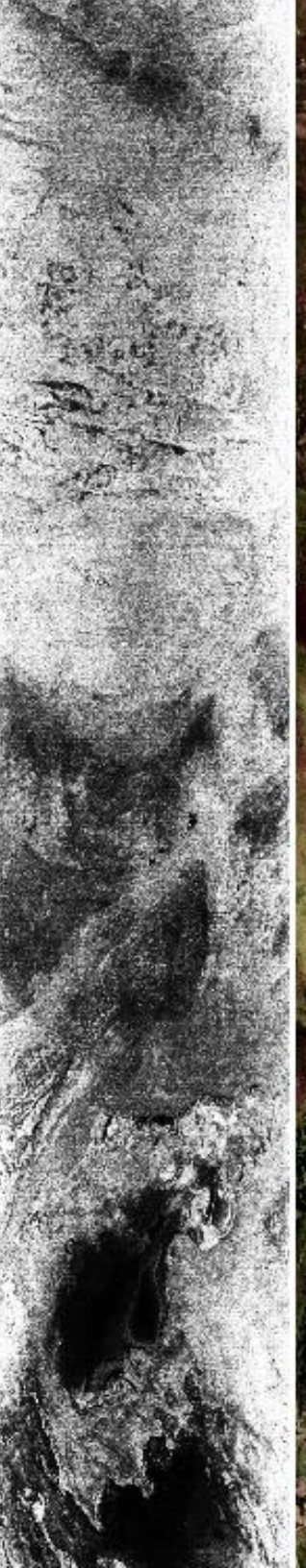
20:54:00



20:56:00



20:58:00



21:00:00



20:52:00

20:54:00

20:56:00

20:58:00

21:00:00

21:00:00

21:02:00

21:04:00

21:06:00

21:07:58



3.77 $\mu\text{m}$  (#30)



4.99 $\mu\text{m}$  (#38)



10.94 $\mu\text{m}$  (#45)  
reverse scale



13.19 $\mu\text{m}$  (#48)  
reverse scale



RGB (#46,#42,#35)

21:00:00

21:02:00

21:04:00

21:06:00

21:07:58

Upper Left Lat, Lon =  $-18.5^\circ$ ,  $24.8^\circ$

Lower Right Lat, Lon =  $-21.3^\circ$ ,  $25.9^\circ$

Aircraft Heading =  $170.8^\circ$

Solar Zenith =  $153.7^\circ$

21:07:58



3.77µm (#30)



4.99µm (#38)



10.94µm (#45)  
reverse scale



13.19µm (#48)  
reverse scale



RGB (#46,#42,#35)

21:07:58

Upper Left Lat, Lon = -18.5°, 24.8°

Lower Right Lat, Lon = -21.3°, 25.9°

Aircraft Heading = 170.8°

Solar Zenith = 153.7°

GPS Altitude = 20016. m (MSL)

MODIS Airborne Simulator Browse Imagery

SAFARI 2000 Campaign - 01 Sep 2000

Botswana

Flight #00-155 Track #14

21:07:58

3.77µm (#30)



4.99µm (#38)



reverse scale  
10.94µm (#45)



reverse scale  
13.19µm (#48)



RGB (#46,#42,#35)



21:07:58

21:08:00

21:10:00

21:12:00

21:08:00

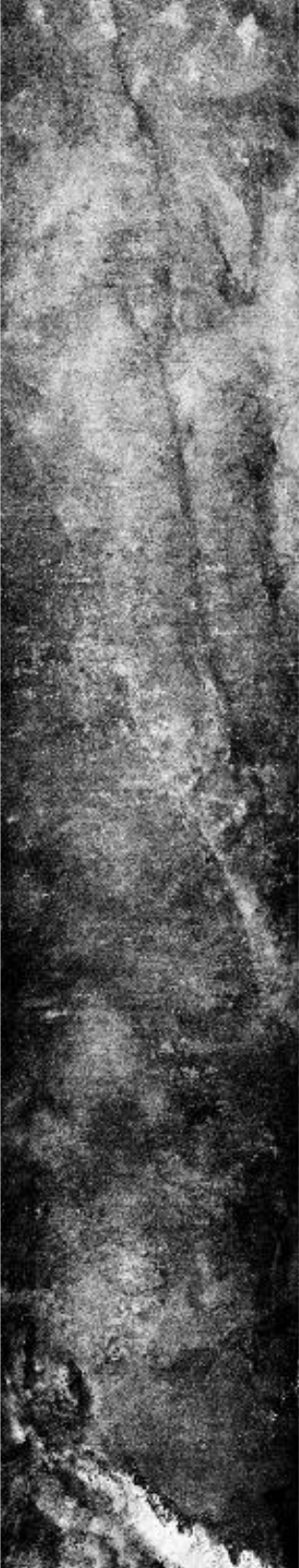
21:10:00

21:12:00

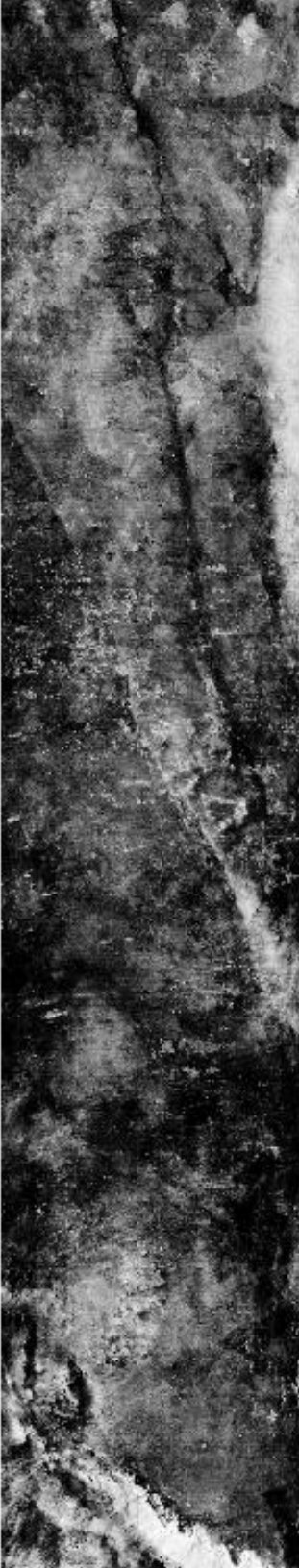
21:12:00



21:14:00



21:16:00



21:18:00



21:20:00



21:12:00

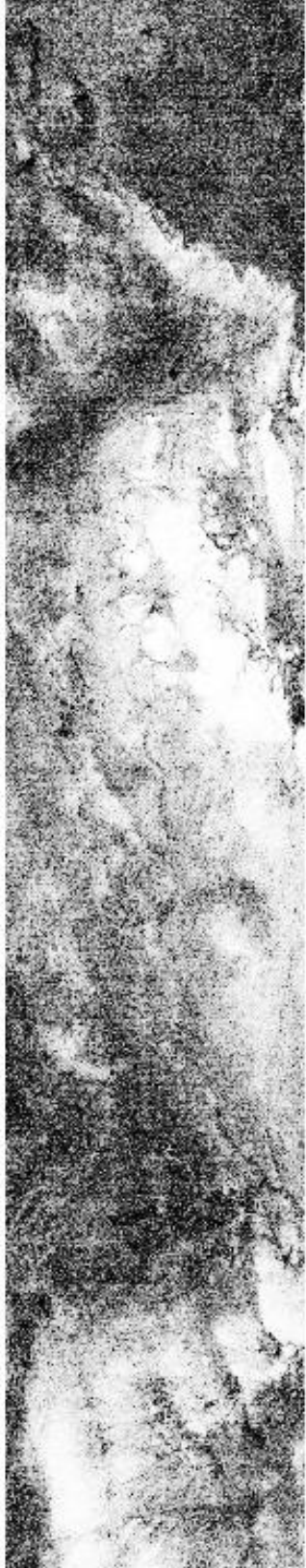
21:14:00

21:16:00

21:18:00

21:20:00

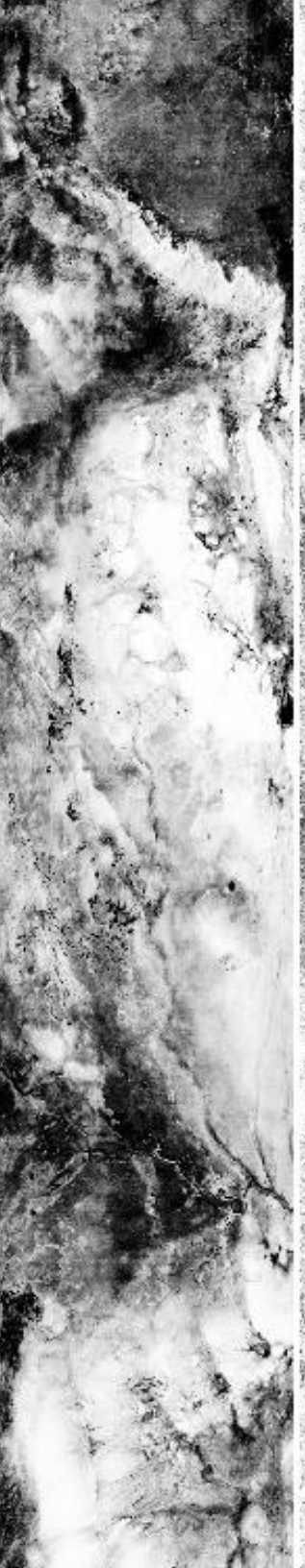
21:20:00



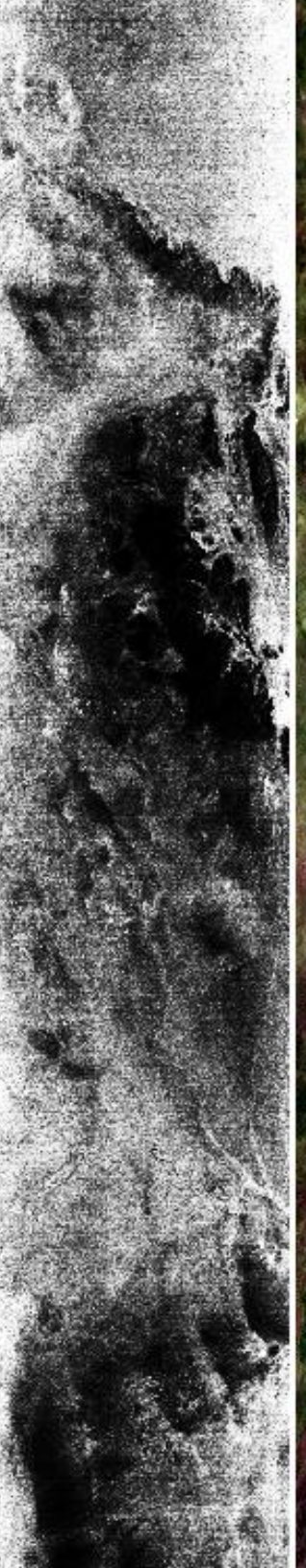
21:22:00



21:24:00



21:26:00



21:28:00



21:20:00

21:22:00

21:24:00

21:26:00

21:28:00

21:28:00



3.77µm (#30)



4.99µm (#38)



10.94µm (#45)  
reverse scale



13.19µm (#48)  
reverse scale



RGB (#46,#42,#35)

21:30:00

21:28:00

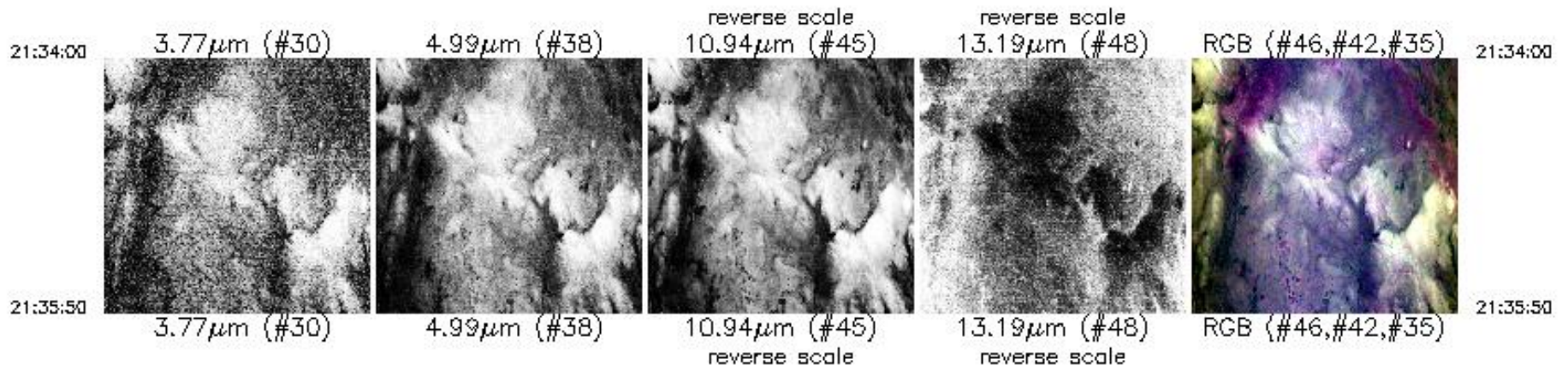
21:30:00

21:32:51

21:32:51

Upper Left Lat, Lon = -21.4°, 25.6°  
Lower Right Lat, Lon = -24.0°, 26.7°  
Aircraft Heading = 164.8°  
Solar Zenith = 158.5°  
GPS Altitude = 19986. m (MSL)

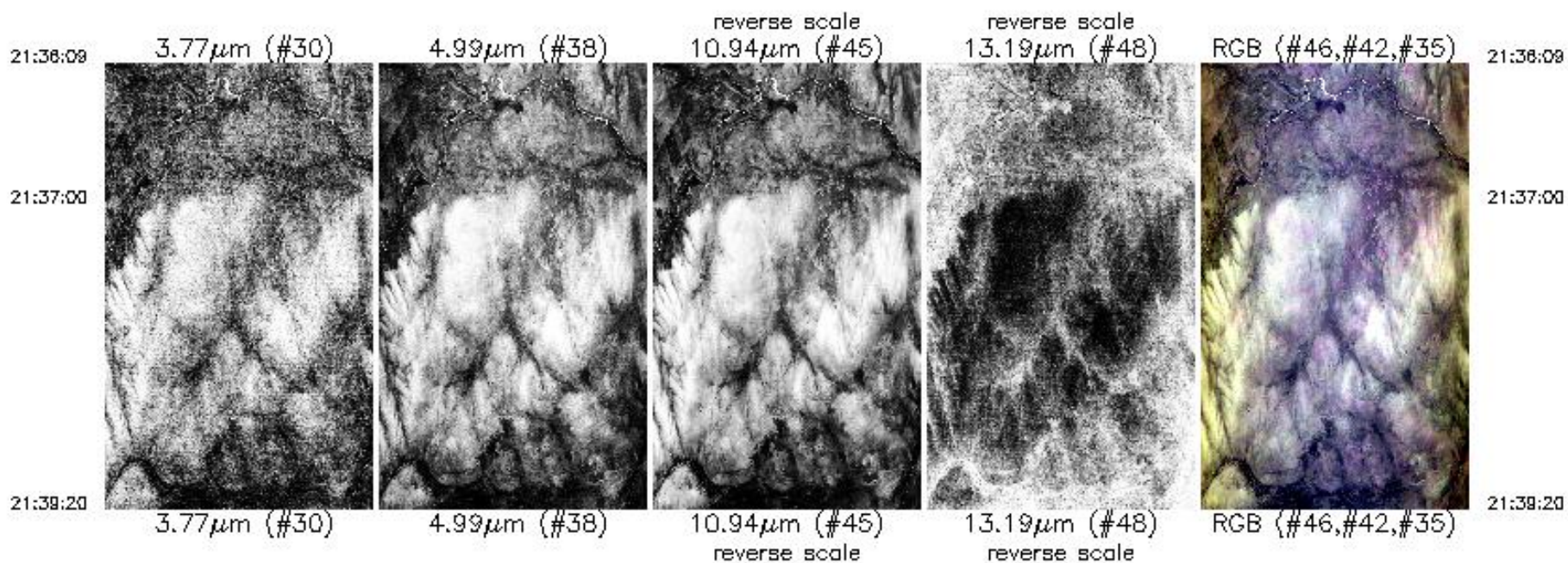
MODIS Airborne Simulator Browse Imagery  
SAFARI 2000 Campaign – 01 Sep 2000  
Botswana  
Flight #00-155 Track #15



Upper Left Lat, Lon =  $-24.3^{\circ}$ ,  $26.6^{\circ}$   
Lower Right Lat, Lon =  $-24.0^{\circ}$ ,  $26.8^{\circ}$   
Aircraft Heading =  $105.7^{\circ}$   
Solar Zenith =  $161.1^{\circ}$   
GPS Altitude = 20026. m (MSL)



MODIS Airborne Simulator Browse Imagery  
 SAFARI 2000 Campaign – 01 Sep 2000  
 Botswana  
 Flight #00-155 Track #16



Upper Left Lat, Lon = -24.3°, 26.9°  
 Lower Right Lat, Lon = -24.0°, 27.2°  
 Aircraft Heading = 89.2°  
 Solar Zenith = 161.4°  
 GPS Altitude = 20056. m (MSL)