UVIS DIONE BOOK.

The intent of this Dione icy satellite book is to give readers an idea of the observational geometry for each UVIS observation, along with a sense of the data quality.

The reflectance of Dione and the other icy satellites generally becomes very low at wavelengths shortward of the water ice absorption edge (~165 nm). At these short wavelengths, water ice is very dark; any apparent spectral structure at these short wavelengths is not necessarily real.

For some multi-part observations, we have compiled the parts into a cube and display the cube image using the UVIS geometer software.

For many observations, we include a calibrated average spectrum to demonstrate the brightness of any reflected solar emission lines (especially at $\lambda<165$ nm) which are likely the most appropriate demonstration of moon reflectance at these short wavelengths.

We also include an off-body background spectrum (to save space, we show this as a calibrated spectrum overplotted on the average moon spectrum though technically the background is subtracted off before calibration)

This book covers FUV data only; EUV data are also available.

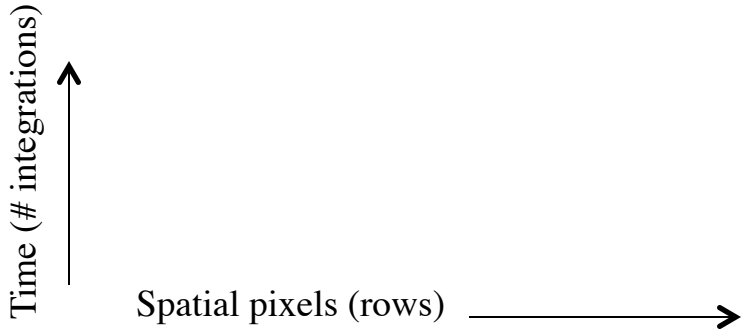
Name of observation

ISS image

Planning/geometer graphic

UVIS observation name
Date
Altitude (average)
Sub s/c longitude (avg)
Sub s/c latitude (avg)
Phase angle (avg)

Long wavelength (170-180nm) image (scaled to max value)



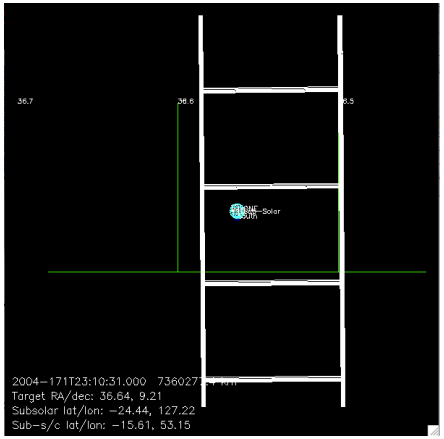
For many observations we also include:

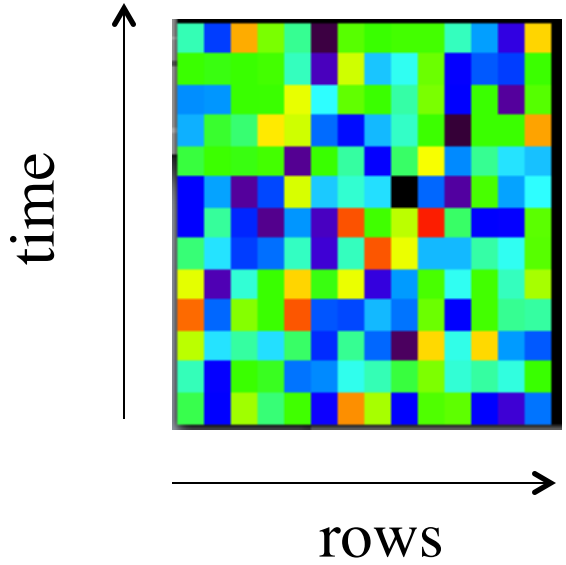
Plot of signal vs. background

Plot of reflectance

Note: most ICYLON observations using the low-res slit and 120 sec integration periods. Most ICYMAP observations use the high-res slit and 30-sec integration periods.

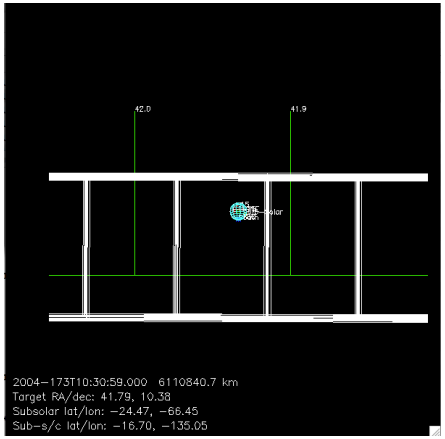
000DI_ICYLON003_ISS
2004-171T23:11
Alt=7,361,061 km
Longitude= 308°W
Latitude=15°S
Phase= 69°

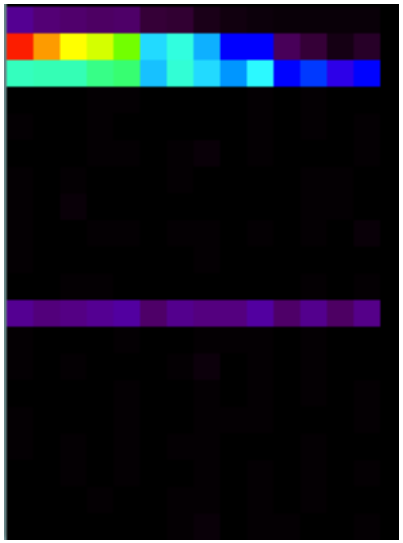




Low SNR

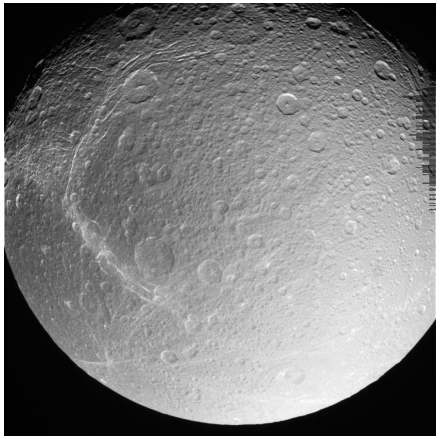
000DI_ICYLON004_ISS
2004-173T10:31
Alt=6,095,499 km
Longitude=137 °W
Latitude=17°S
Phase= 64°

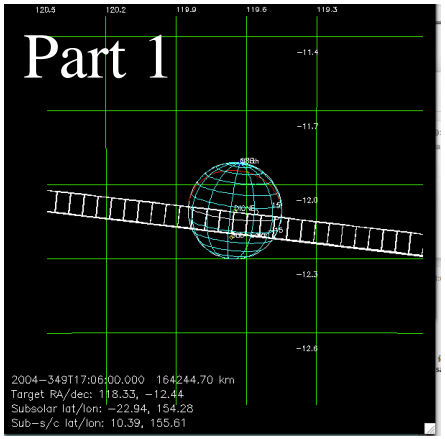


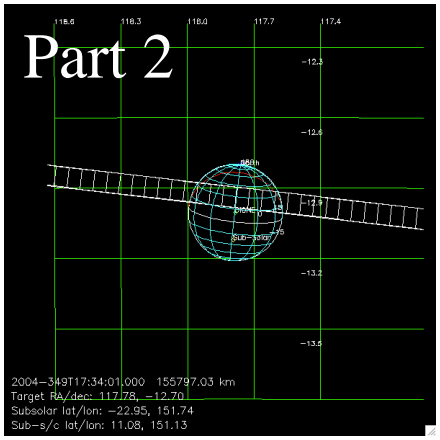


Not clear what else is in slit, but Dione SNR is low (distant)

00BDI_ICYLON002_ISS
2004-349T17:08
Alt= 160,624 km
Longitude= 206°W
Latitude=10.6°N
Phase= 33.9°

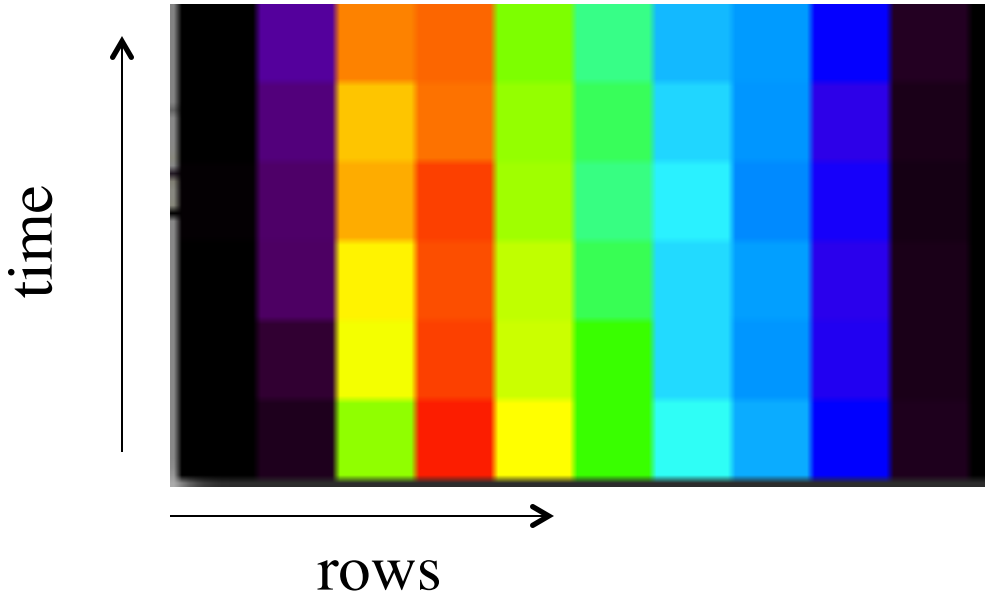




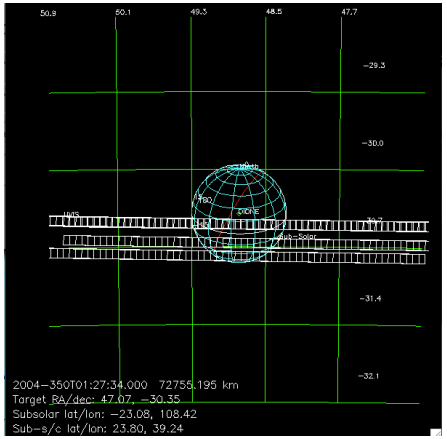


part 2 (2x2 short dwell mosaic)

Part 1



00BDI_ICYLON003_ISS
2004-350T01:28
Alt= 72,146 km
Longitude= 321°W
Latitude=23.8°N
Phase= 82.3°

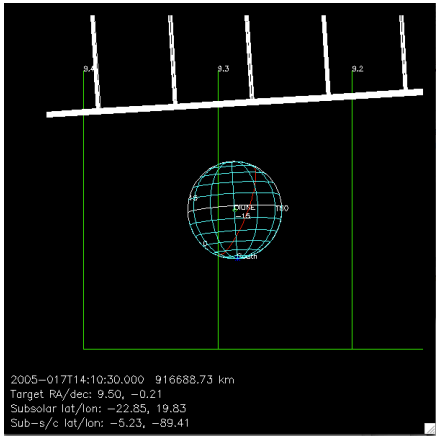


00BDI_ICYLON003_CIRS
2004-350T02:18

There is a gap in the c-kernel during this observation.
The observation is one 240-sec record.
The data seem to be corrupted.

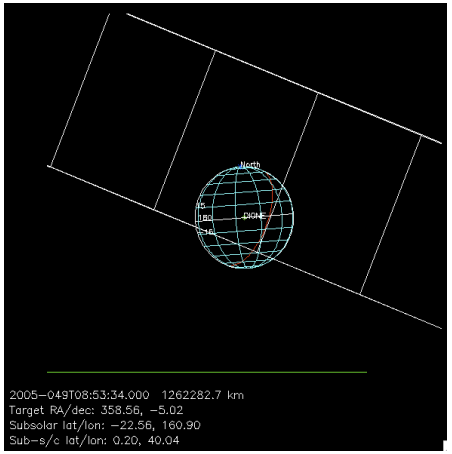
00CDI_ICYLON012_ISS

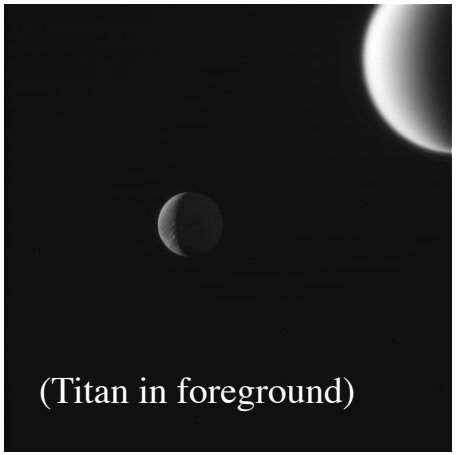
2005-017T14:11



UVIS slit not on body

003DI_320W_119PH001





003DI_ICYLON006_ISS

2005-049T08:54

Alt= 1,262,723 km

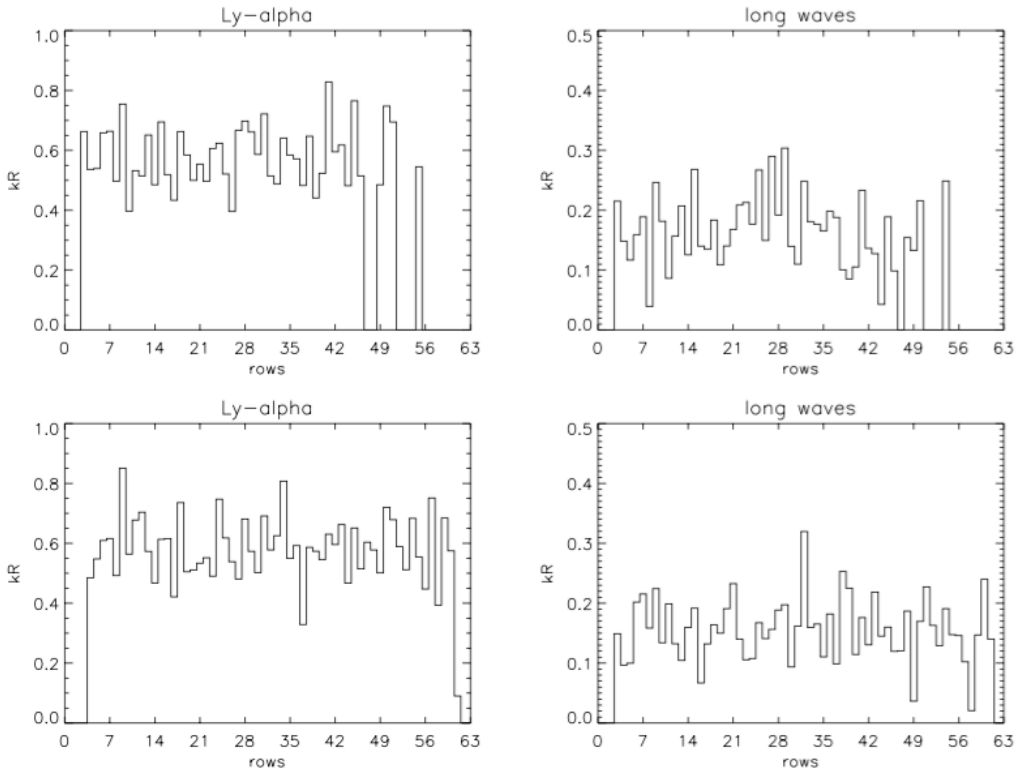
Longitude= 320°W

Latitude=0.2°N

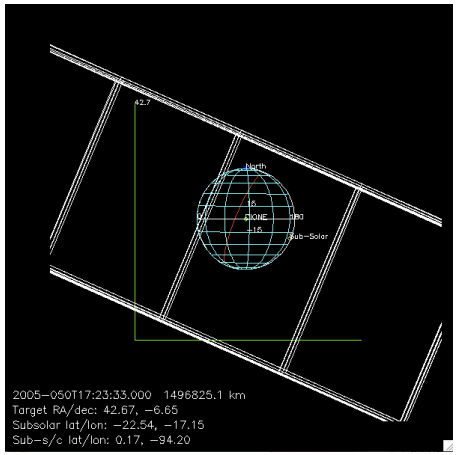
Phase= 118.1°

2 1-rec stares

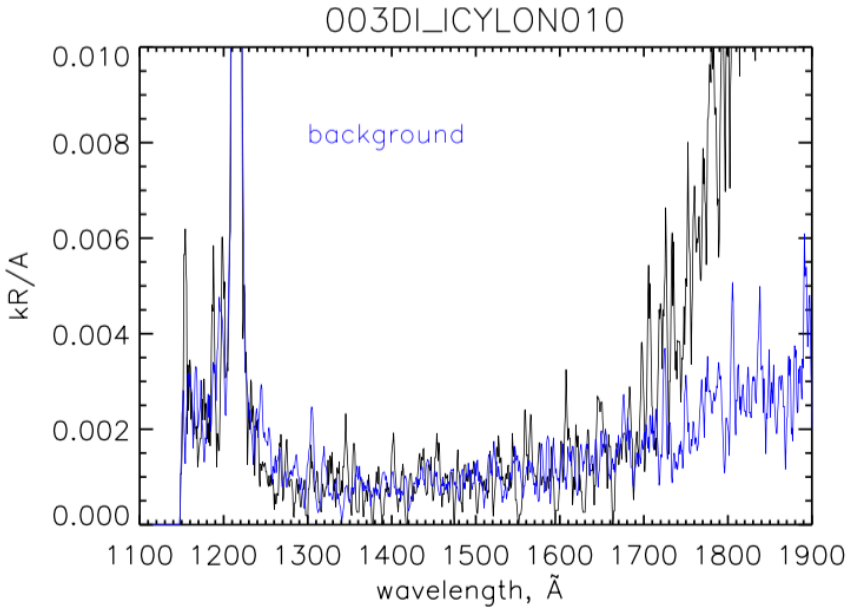
Low SNR

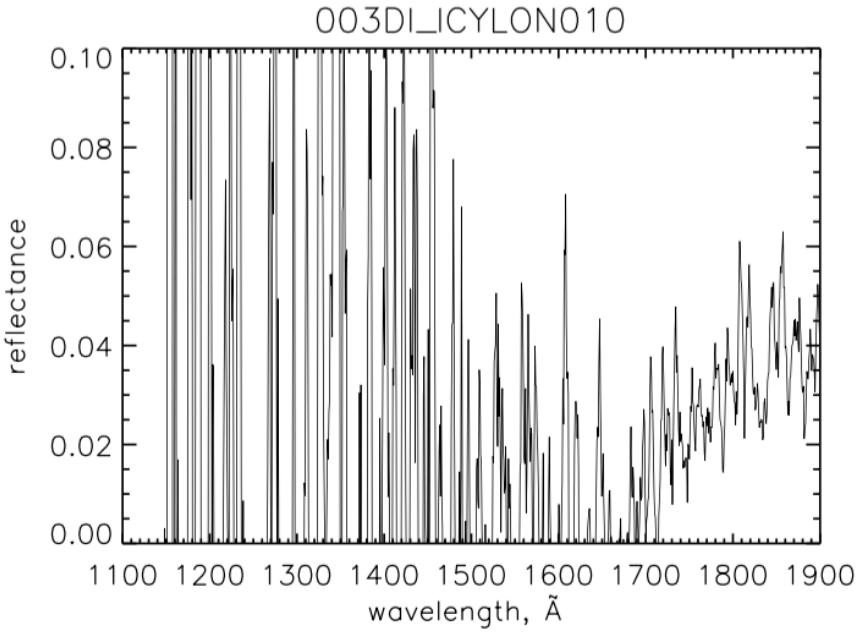


003DI_094W_078PH001

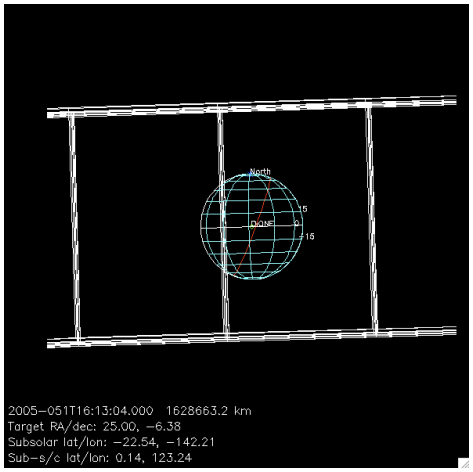


003DI_ICYLON010_ISS
2005-050T17:24
Alt= 1,495,266 km
Longitude= 94°W
Latitude=0.2°N
Phase= 78.1°





003DI_238W_094PH001



003DI_ICYLON011_ISS

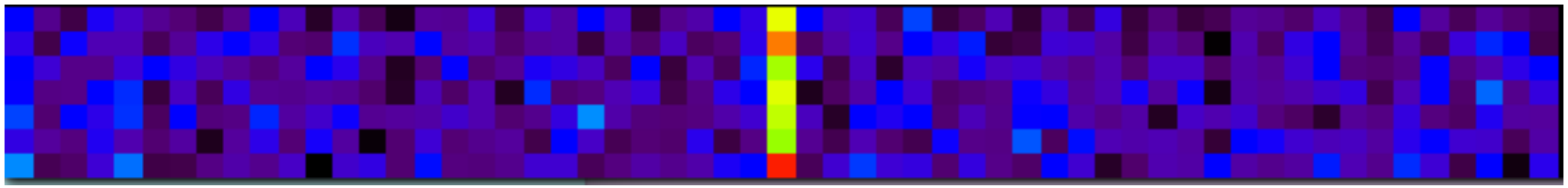
2005-051T16:14

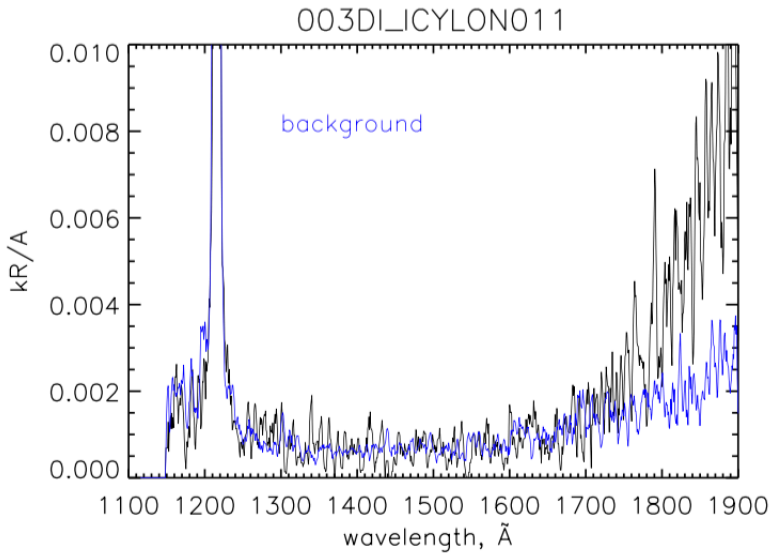
Alt= 1,632,135 km

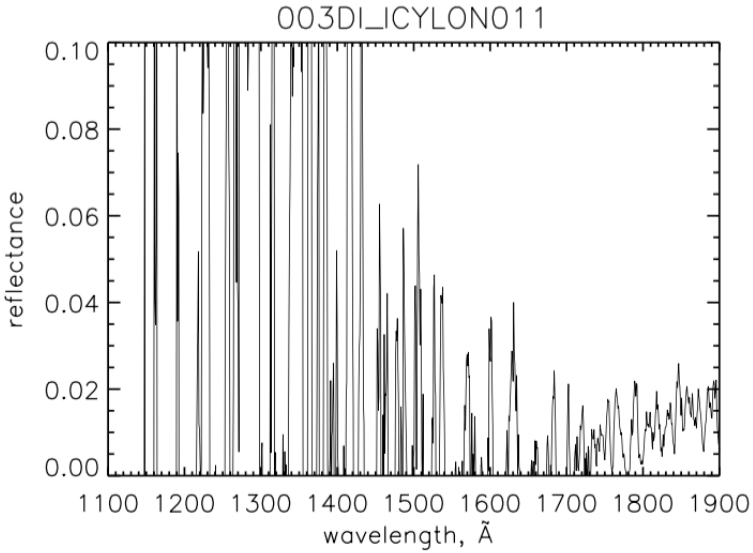
Longitude= 237°W

Latitude=0.14°N

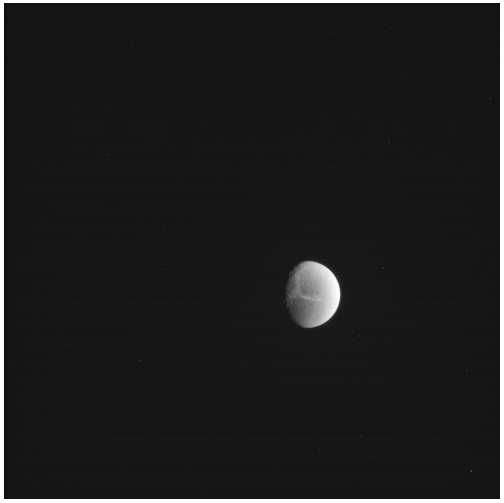
Phase= 94.3°

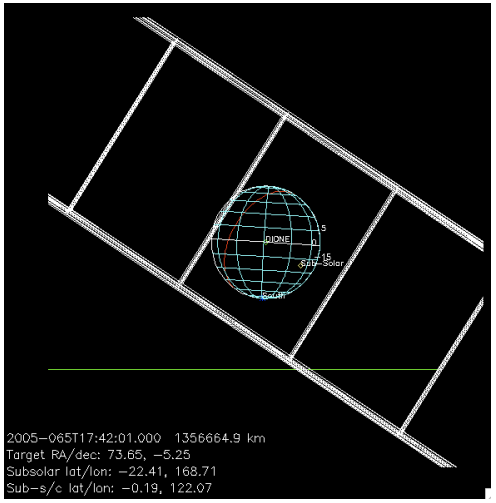


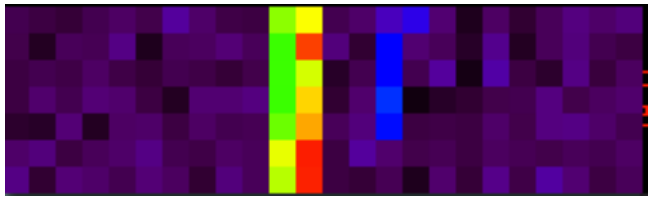




004DI_238W051PH001







004DI_ICYLON001_ISS

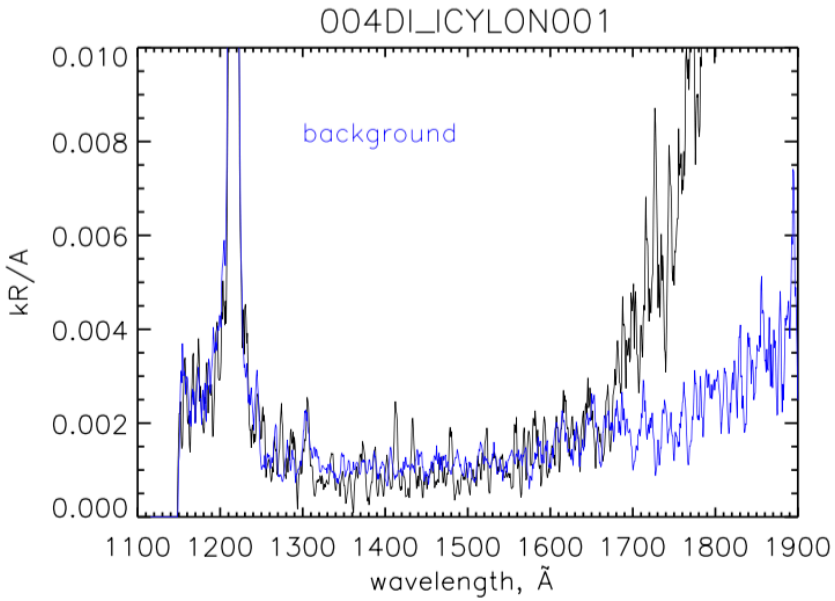
2005-065T17:43

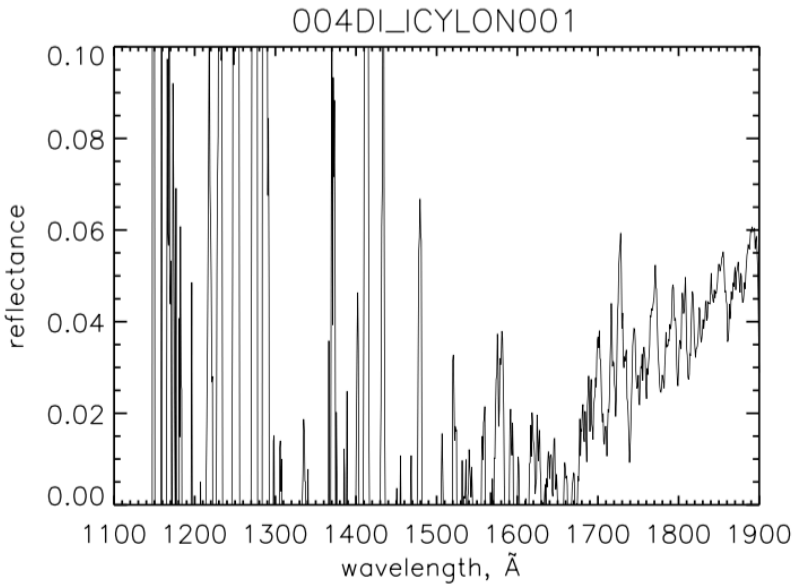
Alt= 1,357,853 km

Longitude= 238.6°W

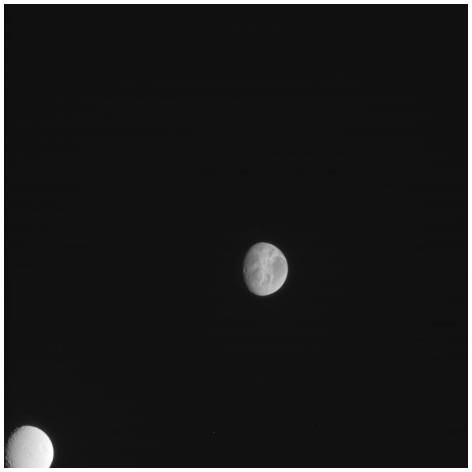
Latitude=0.18°S

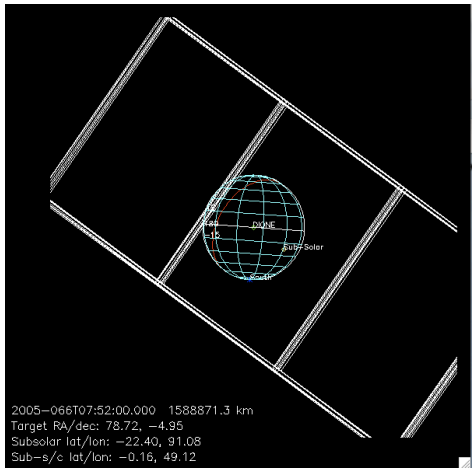
Phase= 50.6°

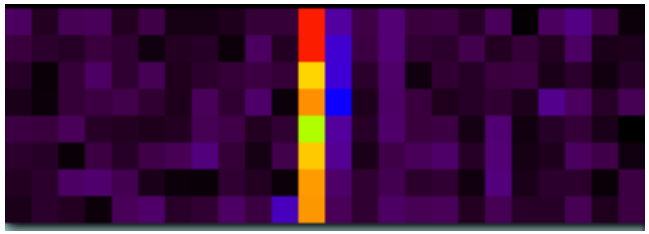




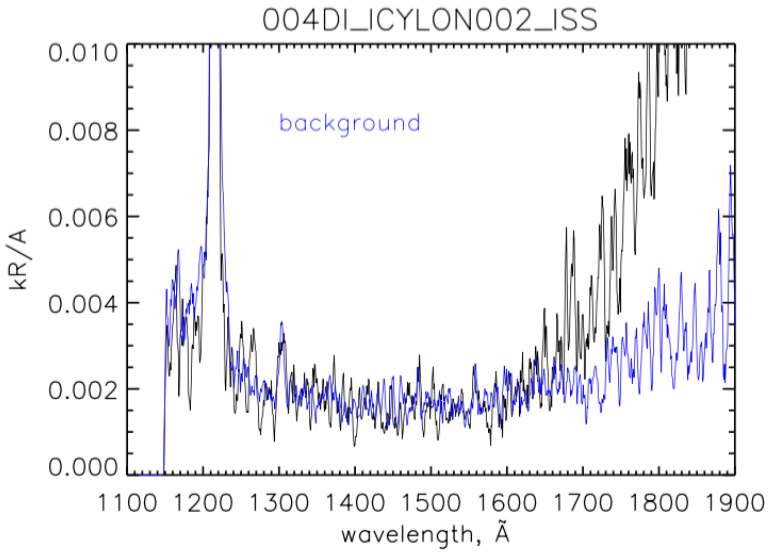
004DI_310W047PH001_ISS

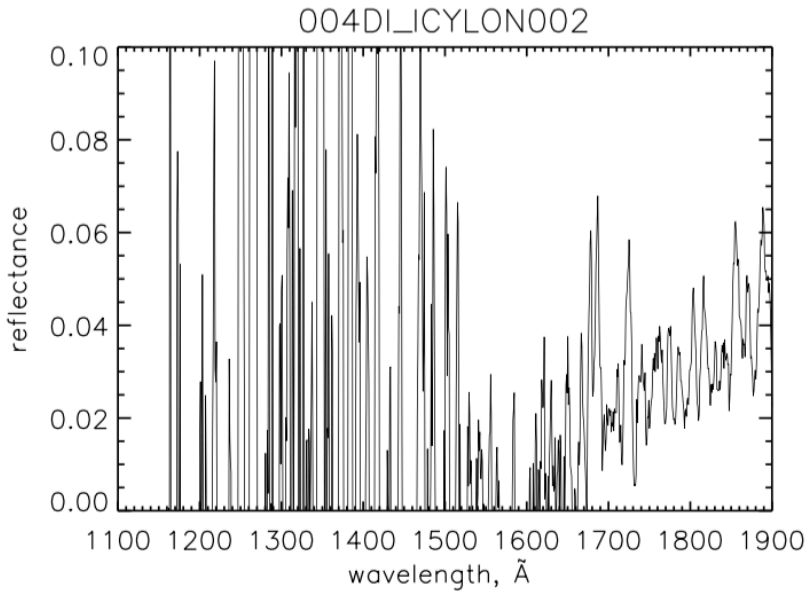




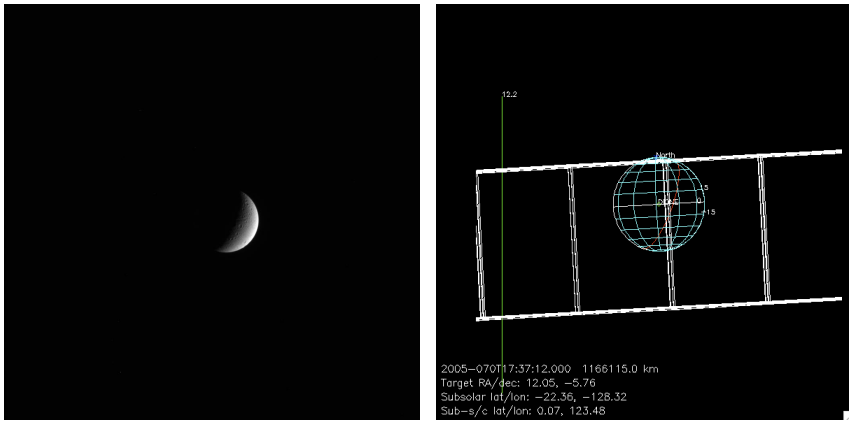


004DI_ICYLON002_ISS
2005-066T07:53
Alt= 1,589,355 km
Longitude= 311°W
Latitude=0.16°S
Phase= 46.4°

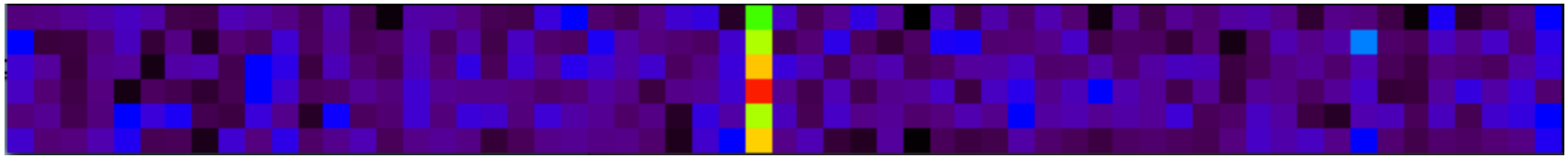


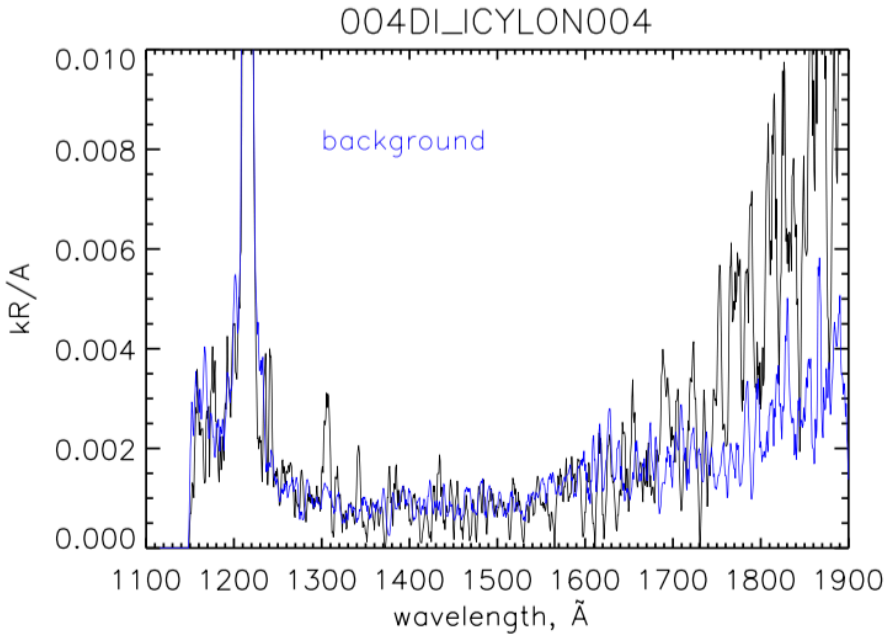


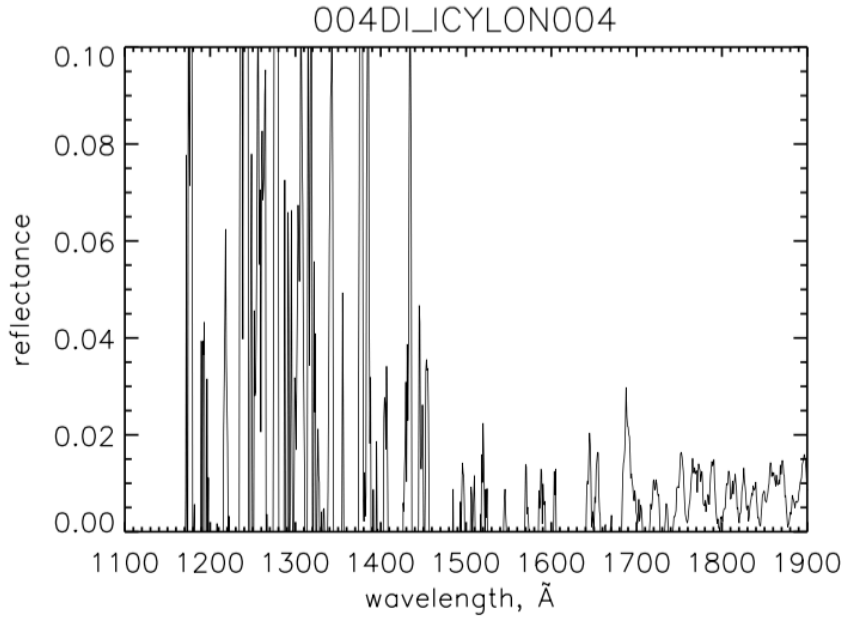
004DI_238W107PH001_ISS



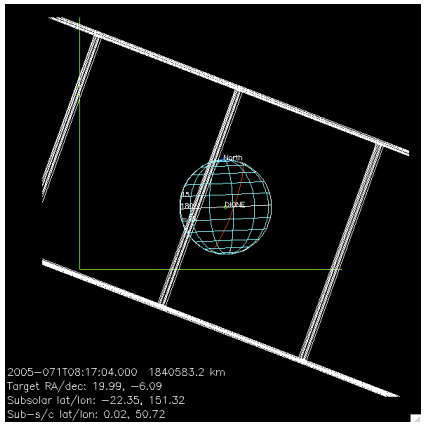
004DI_ICYLON004_ISS
2005-070T17:38
Alt= 1,169,197 km
Longitude= 237°W
Latitude=0.06°N
Phase= 106.8°







004DI_310W100PH001_ISS



004DI_ICYLON006_ISS

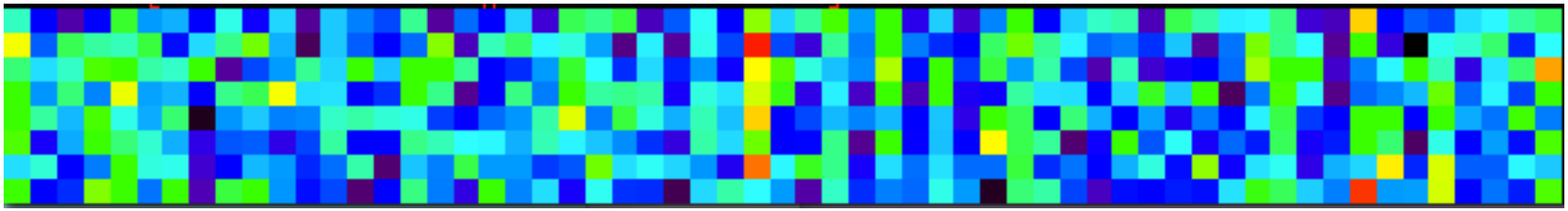
2005-071T08:18

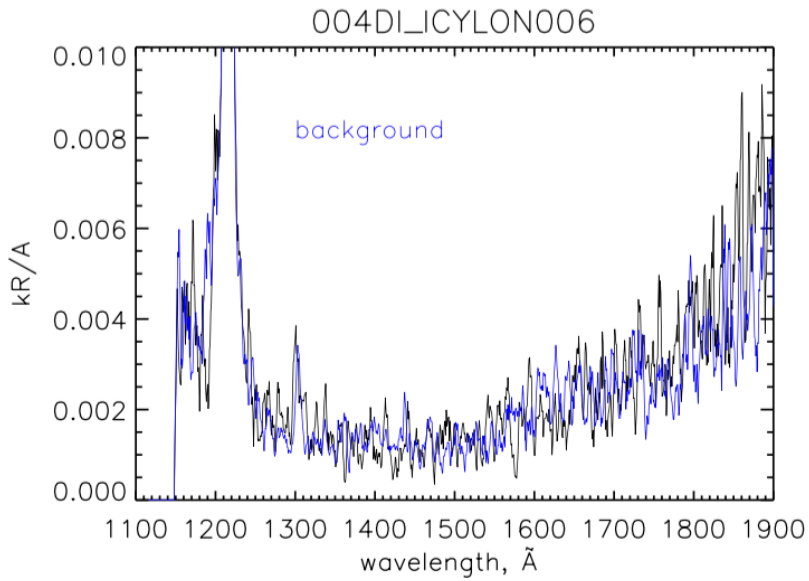
Alt= 1,844,673 km

Longitude= 309°W

Latitude=0.02°N

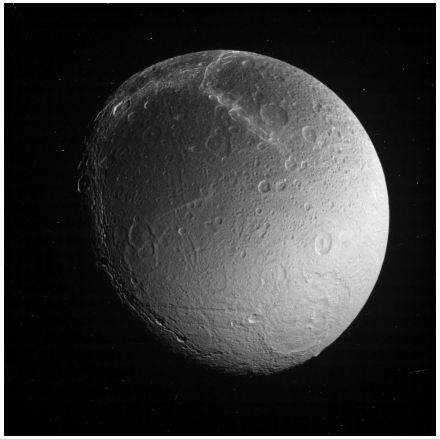
Phase= 99.7°

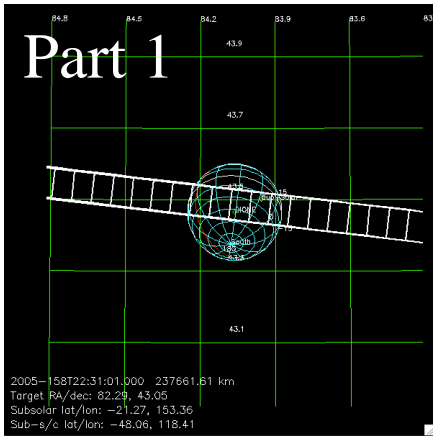


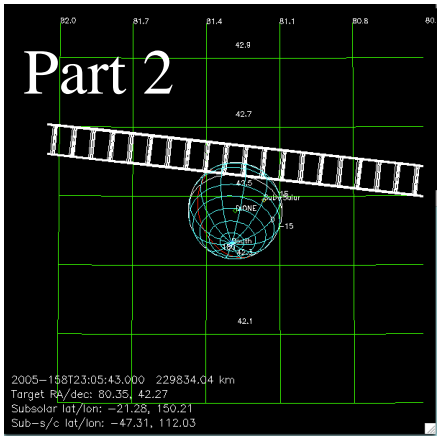


Low SNR

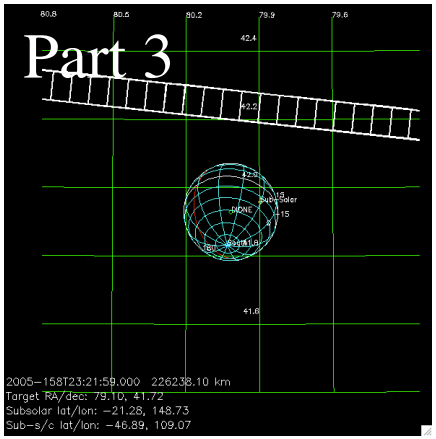
009DI_GLOCOL001_ISS

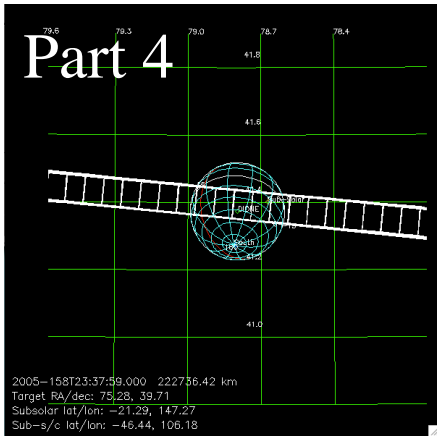


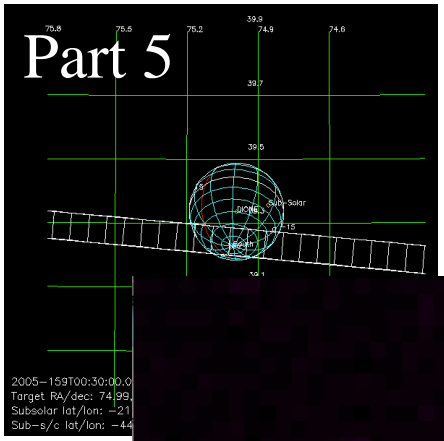




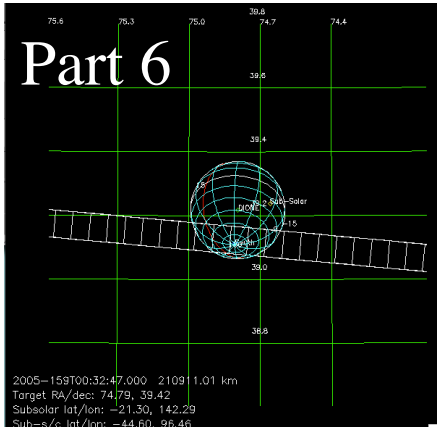
009DI_GLOCOL001_ISS
2005-158T22:32
Alt= 234,598 km
Longitude= 243°W
Latitude=48°S
Phase= 39°

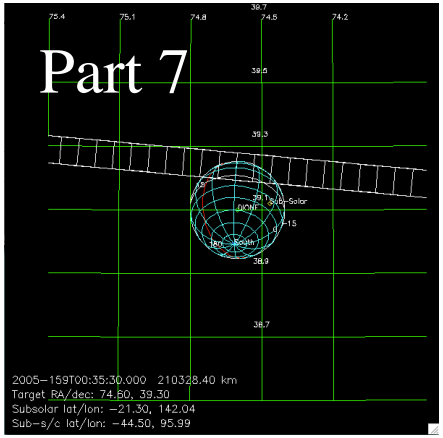


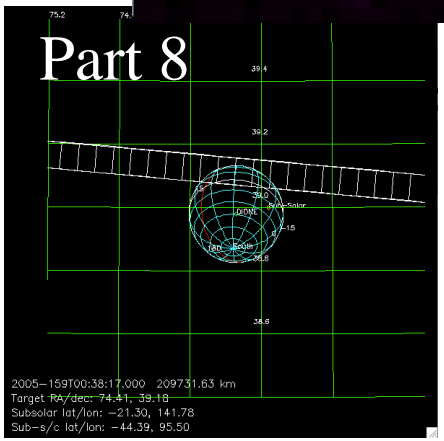




Part 1







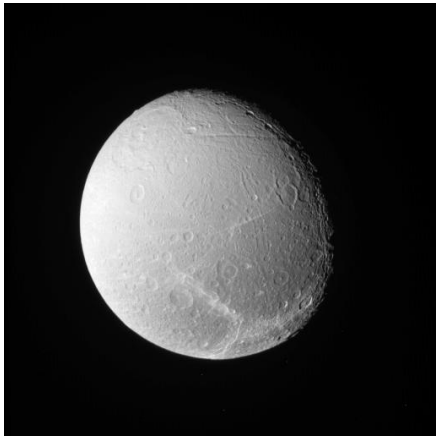
012DI_ICYLON007_PRIME

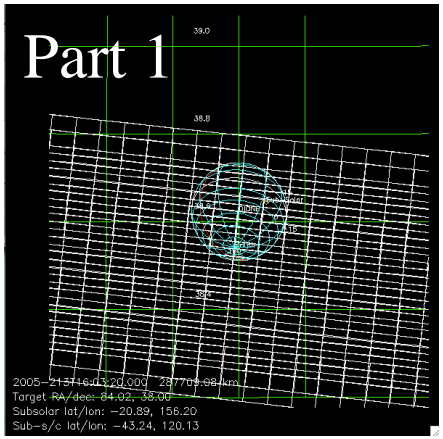
Alt= 284,288 km

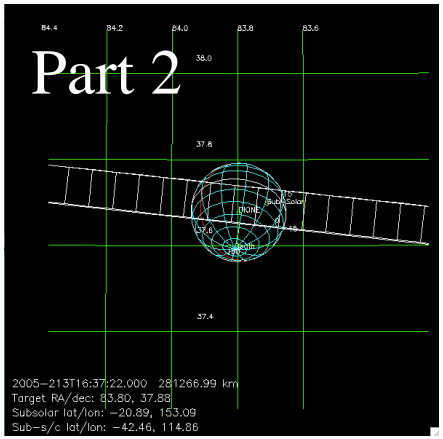
Longitude= 242°W

Latitude=43°S

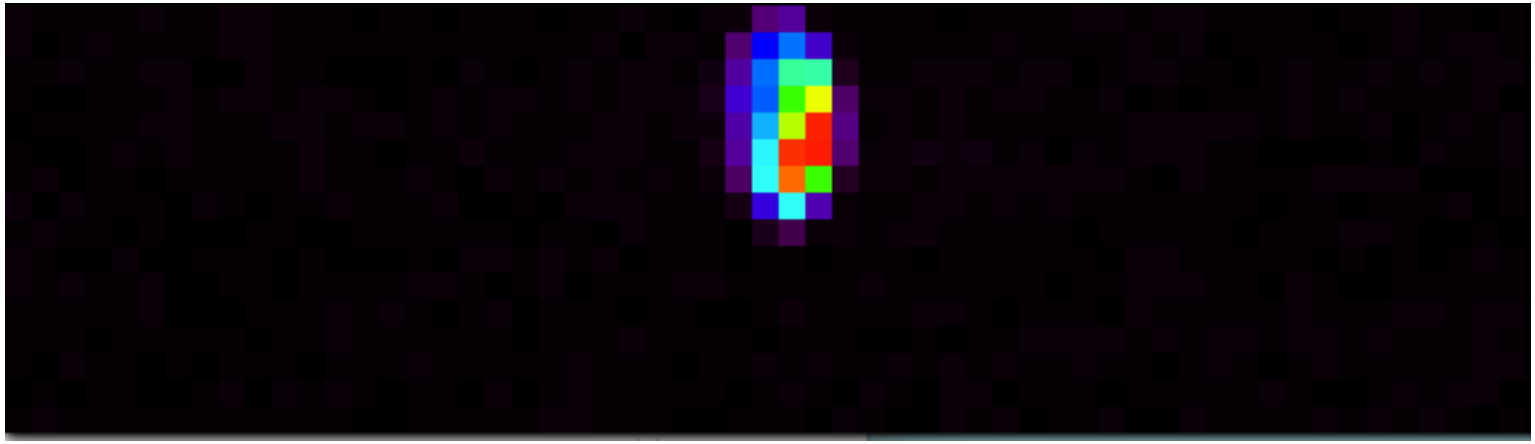
Phase= 37.9°



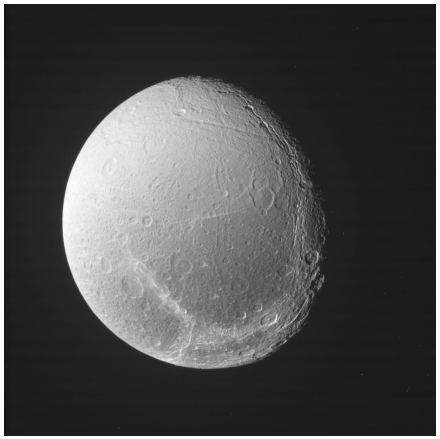


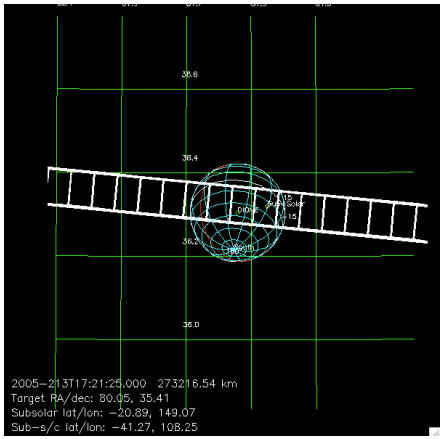


Part 1



ISS_012DI_PHOTOM010





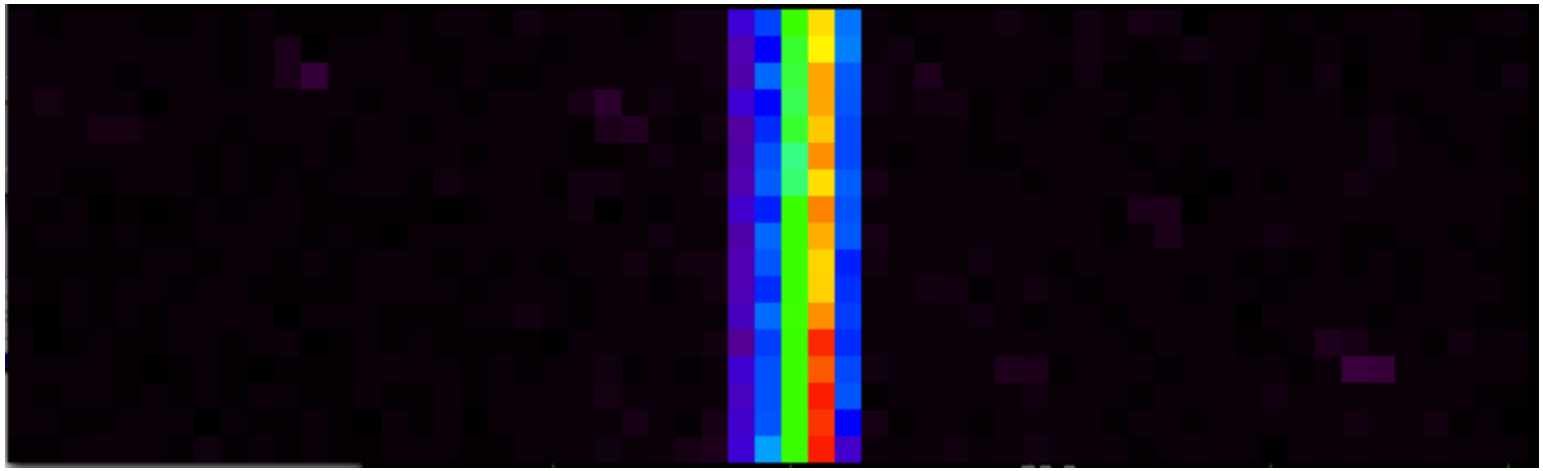
012DI_ICYLON009_ISS

Alt= 269,784 km

Longitude= 254°W

Latitude=41°S

Phase= 40.4°



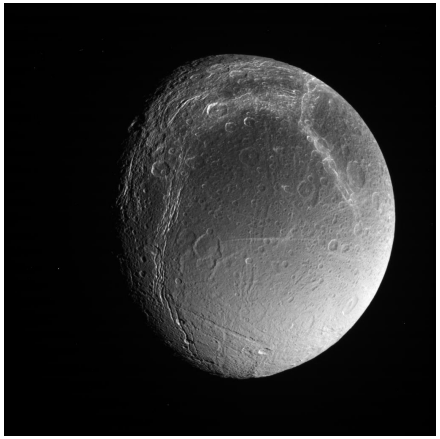
012DI_ICYLON010_PRIME

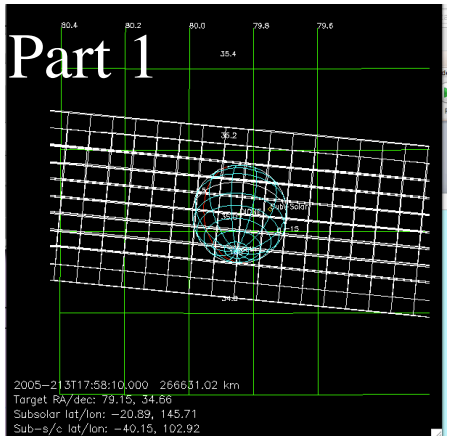
Alt= 264,642 km

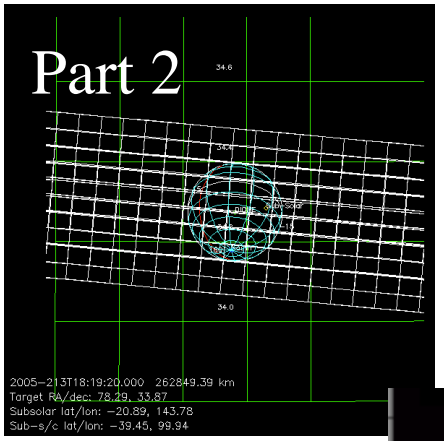
Longitude= 258°W

Latitude=39.9°S

Phase= 41.3°

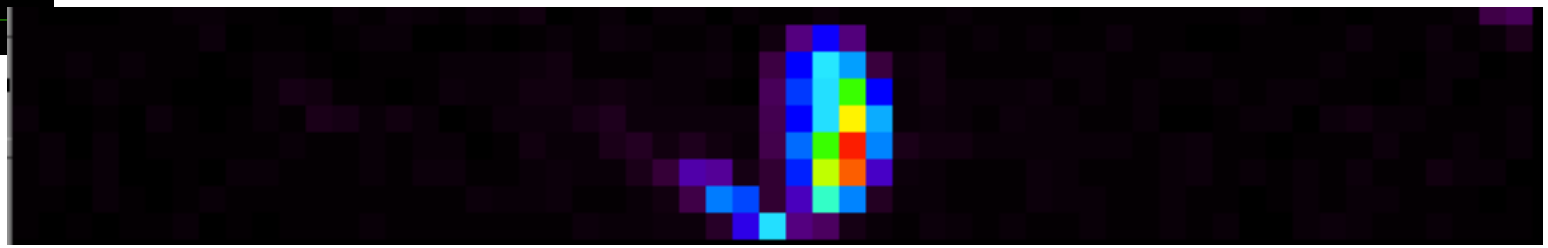




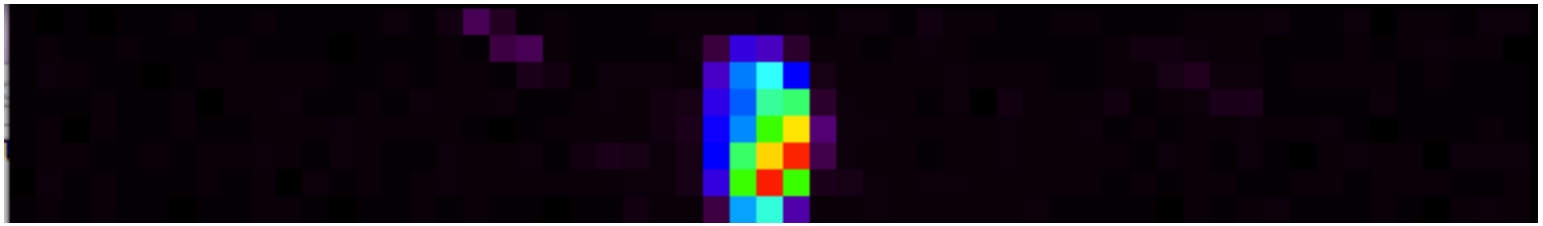


(note another object in slit)

Part 1



Part 2



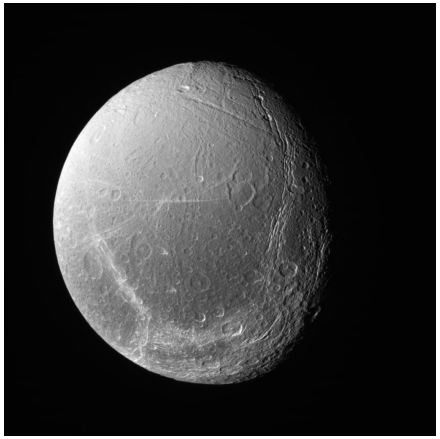
012DI_ICYLON012_PRIME

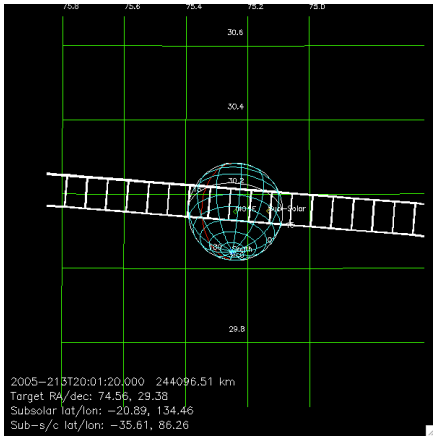
Alt= 241,407 km

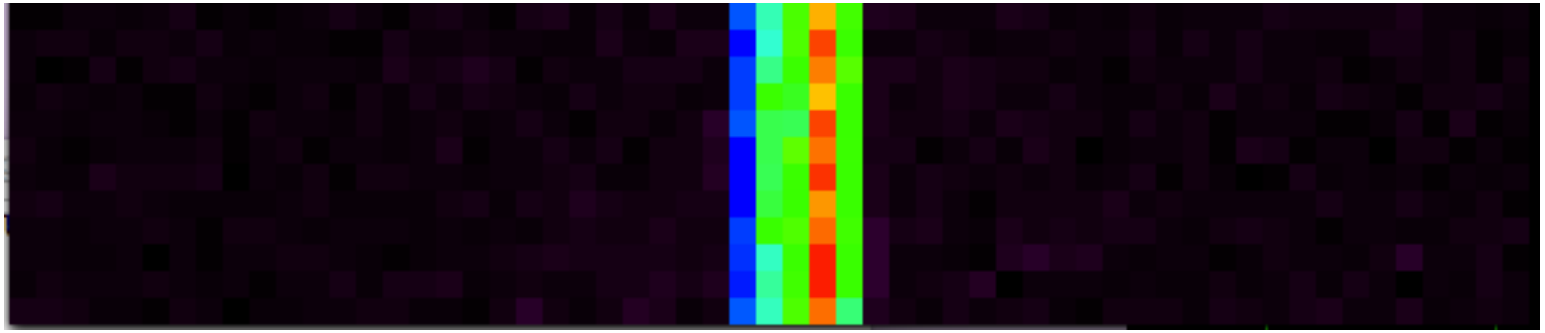
Longitude= 275°W

Latitude=35°S

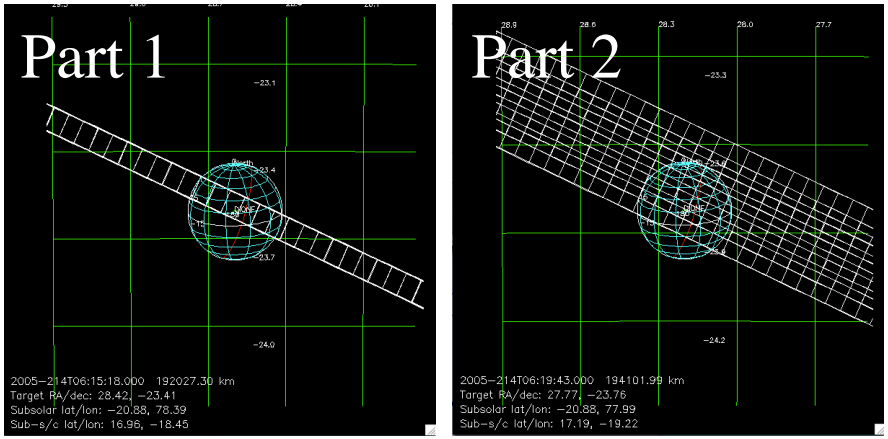
Phase= 44.7°







CIRS_012DI_FP1REGION020



012DI_ICYLON014_CIRS

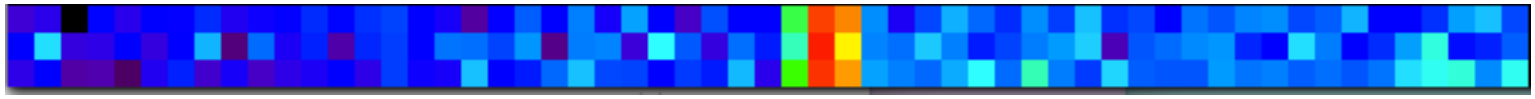
Alt= 191,935 km

Longitude= 19°W

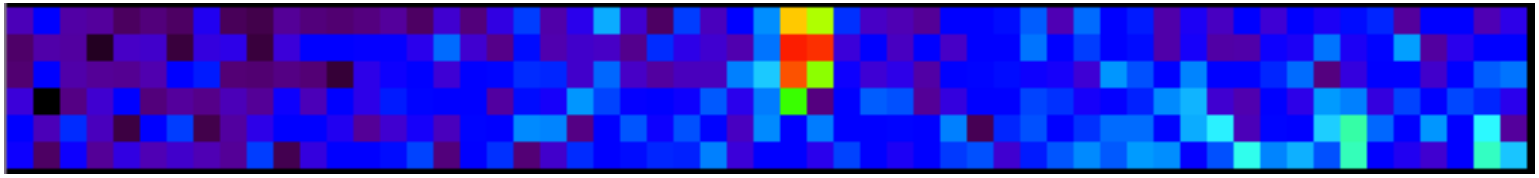
Latitude=17°N

Phase= 102°

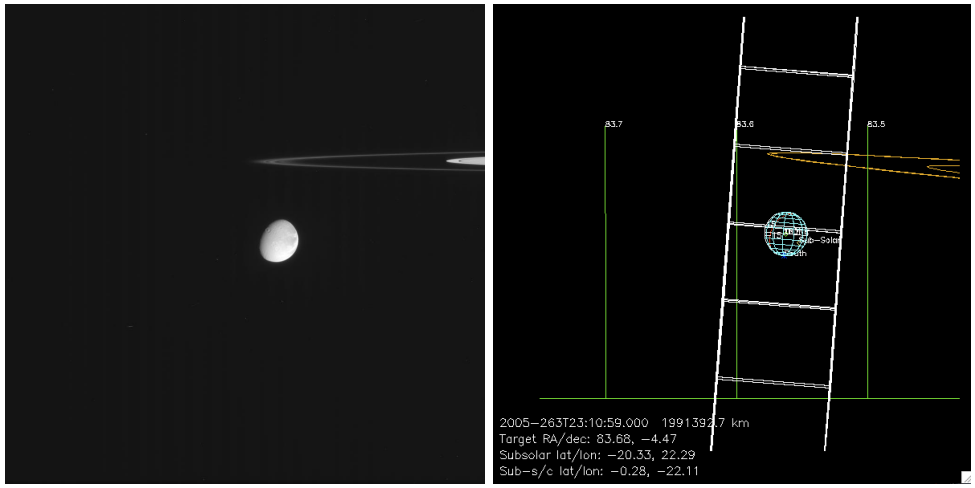
Part 1



Part 2



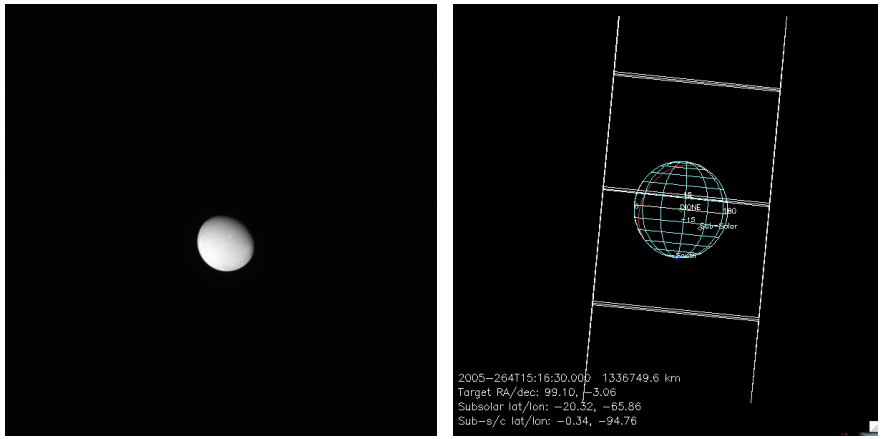
ISS_015DI_022W047PH001



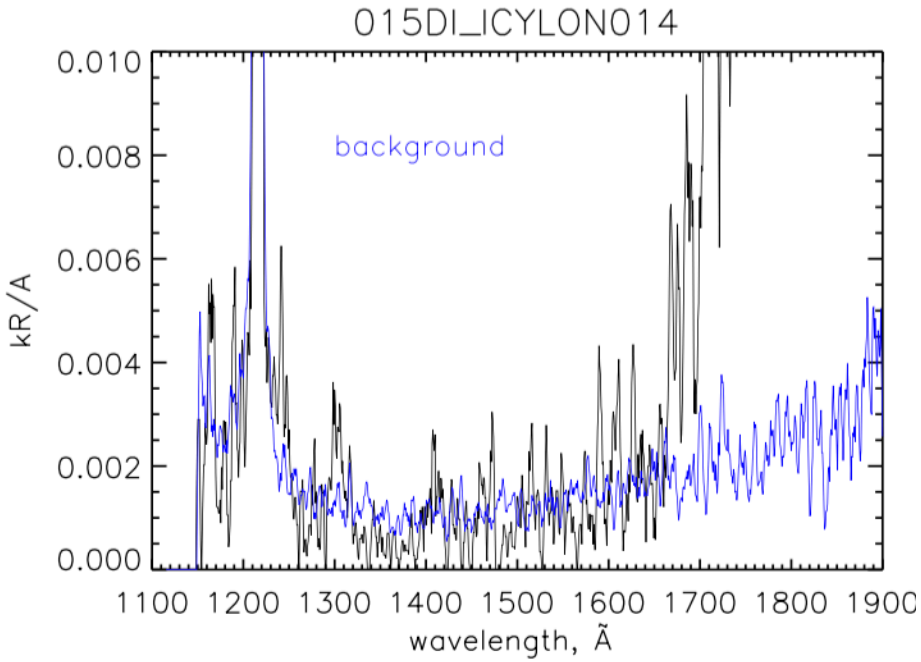
015DI_ICYLON010_ISS
2005-263T23:05
Alt= 1,989,543 km
Longitude= 22°W
Latitude=0.28°S
Phase= 47.8°

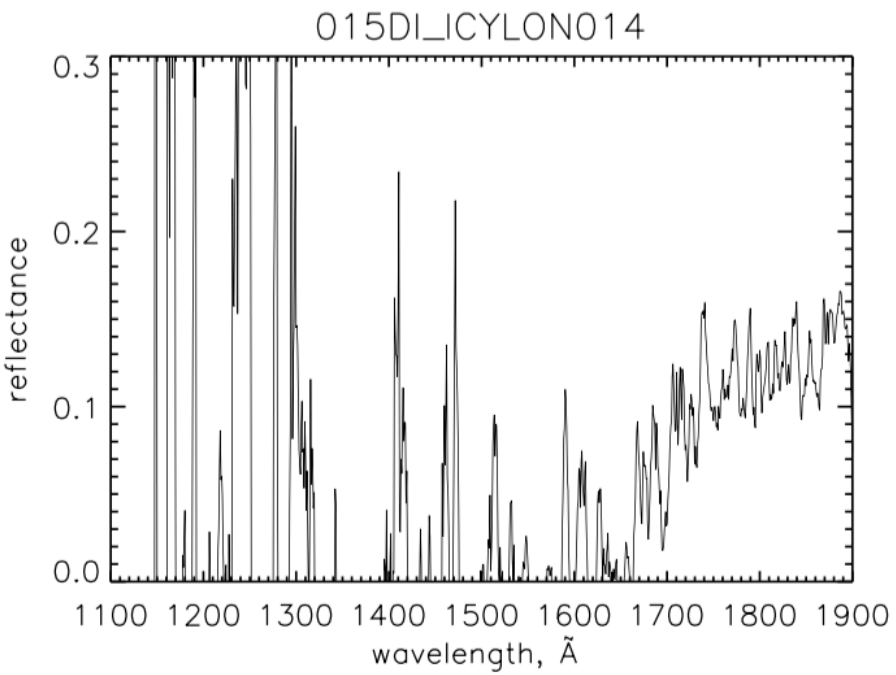
Dione and rings in same row

ISS_015DI_094W034PH001

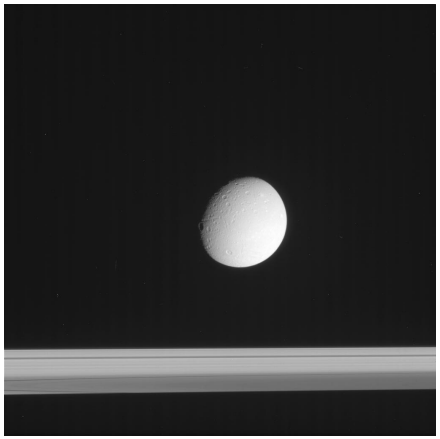


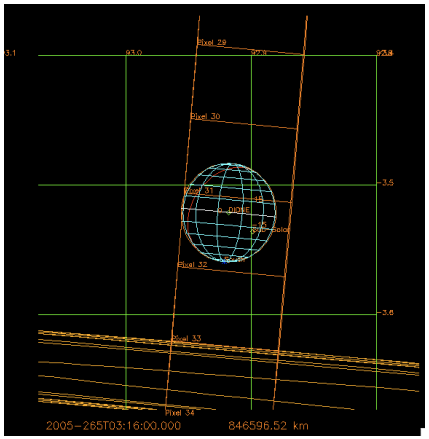
015DI_ICYLON014_ISS
2005-264T15:10
Alt= 1,334,567 km
Longitude= 95°W
Latitude=0.34°S
Phase= 34.6°





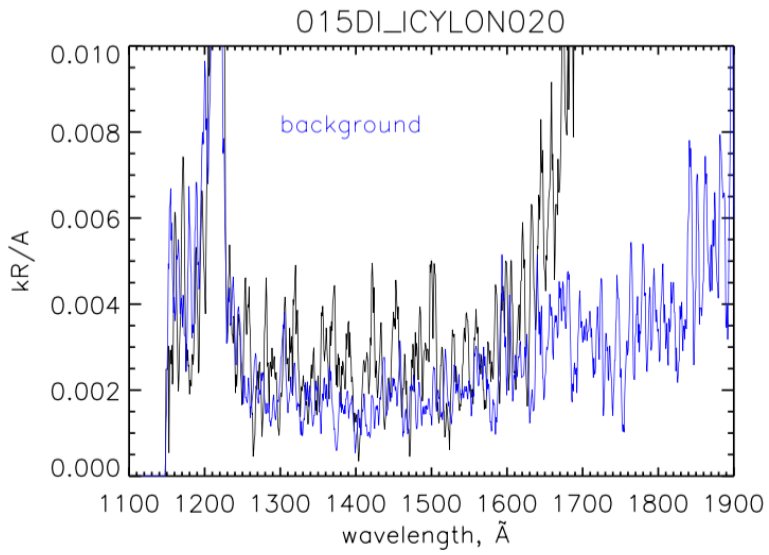
ISS_015DI_166W038PH001

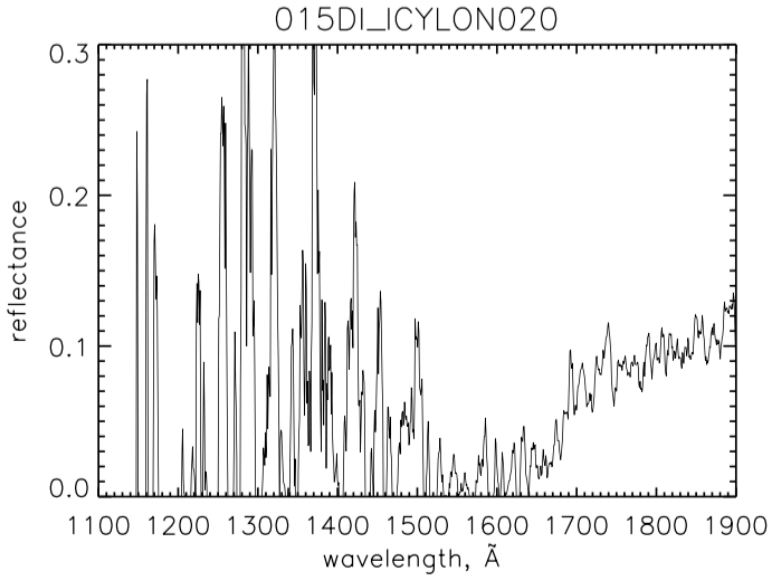




015DI_ICYLON020_ISS
2005-265T03:10
Alt= 844,760 km
Longitude= 167°W
Latitude=0.45°S
Phase= 39.7°

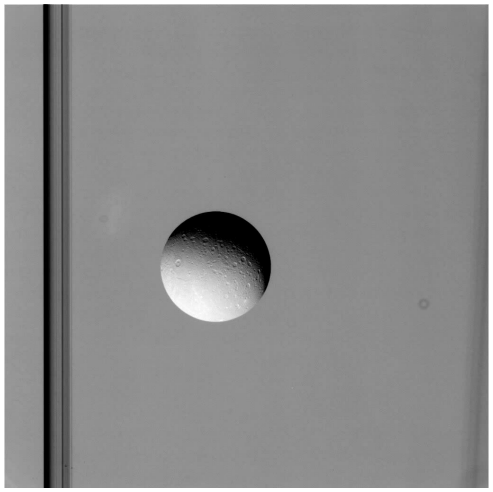
Dione rings



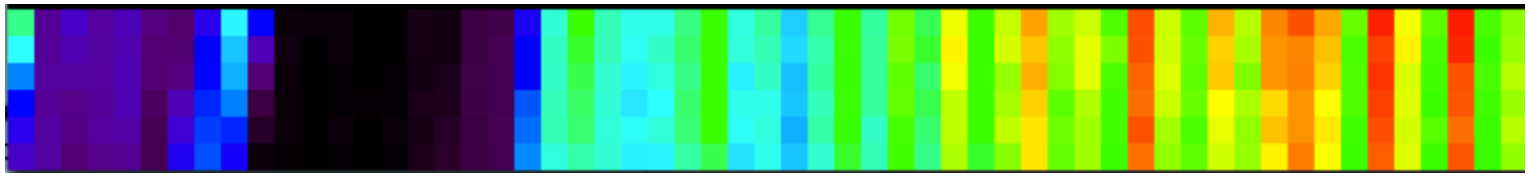


ISS_015DI_LIMB090R001

015DI_ICYLON021_ISS
2005-265T05:10
Alt= 803,614 km
Longitude= 180°W
Phase= 42.4°



Dione in front of Saturn



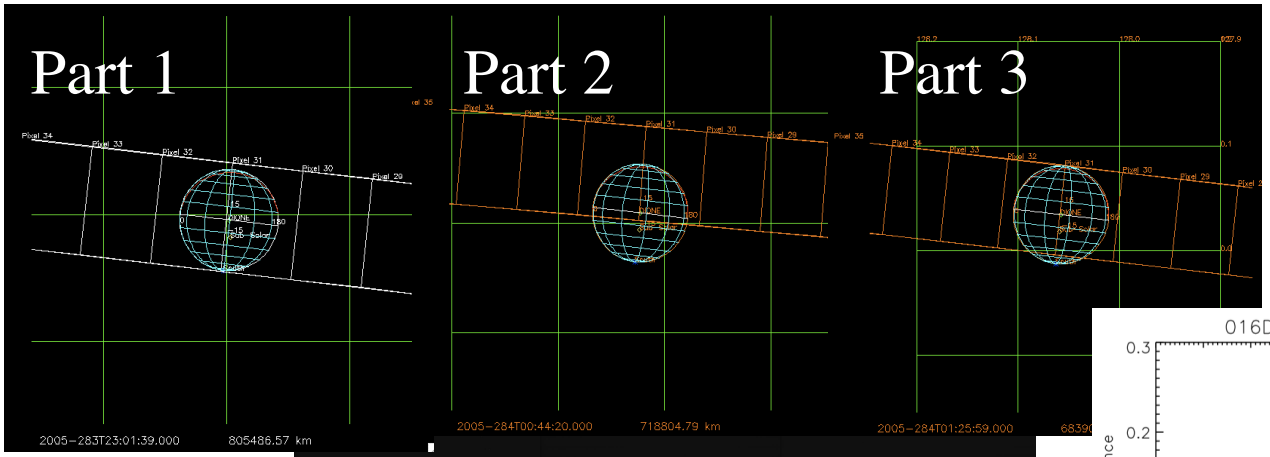
016DI_ICYLON001_PRIME

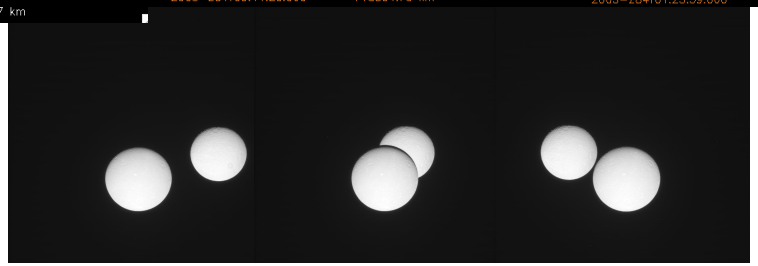
Alt= 763,502 km

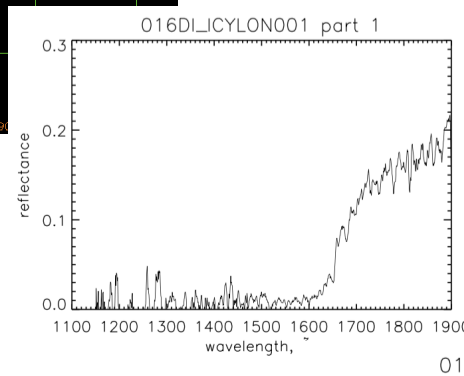
Longitude= 94°W

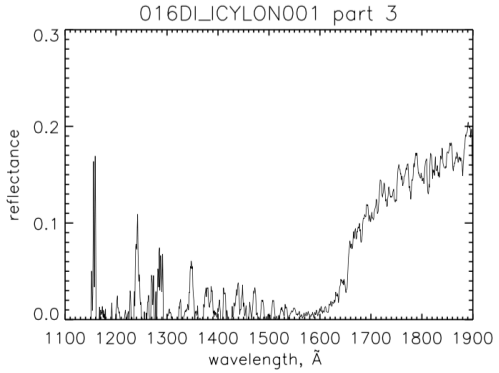
Latitude=0.31°S

Phase= 20°

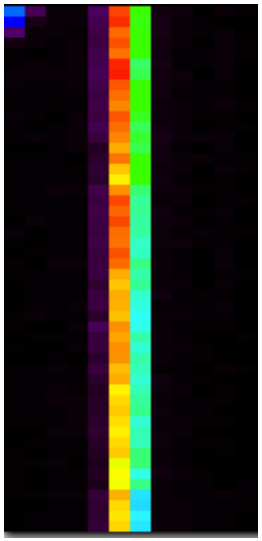


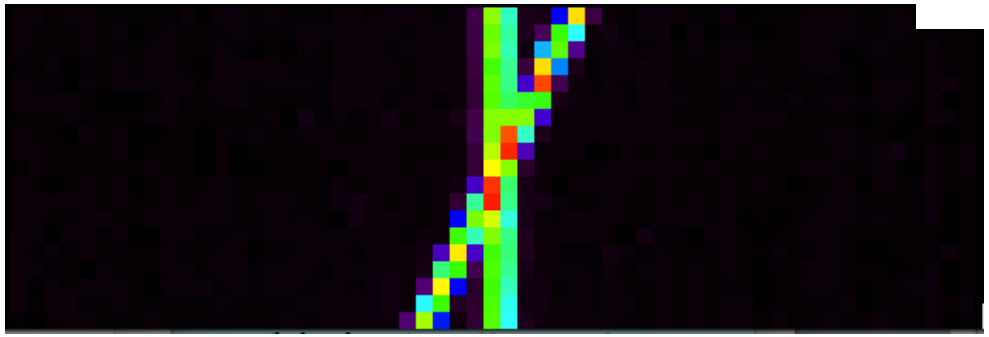


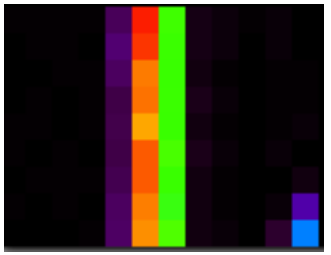




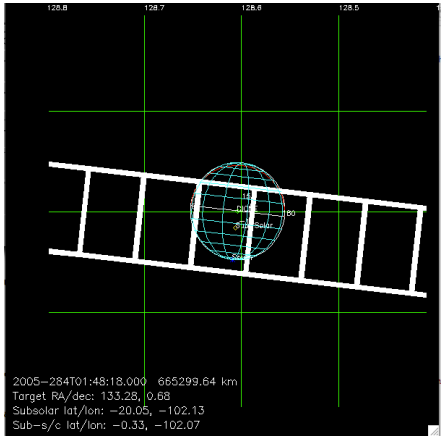
(Rhea passes by during 2nd part)

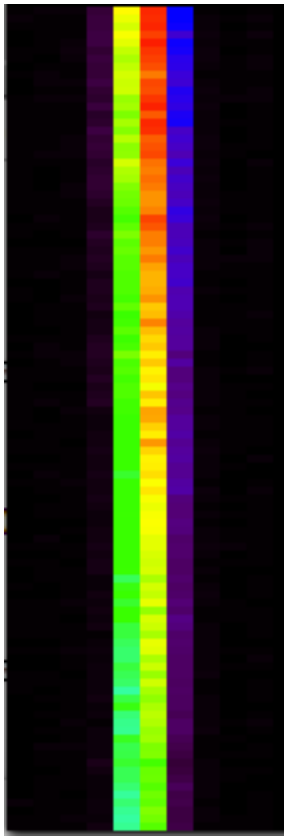






016DI_DIONE201_VIMS





016DI_ICYLON003_VIMS

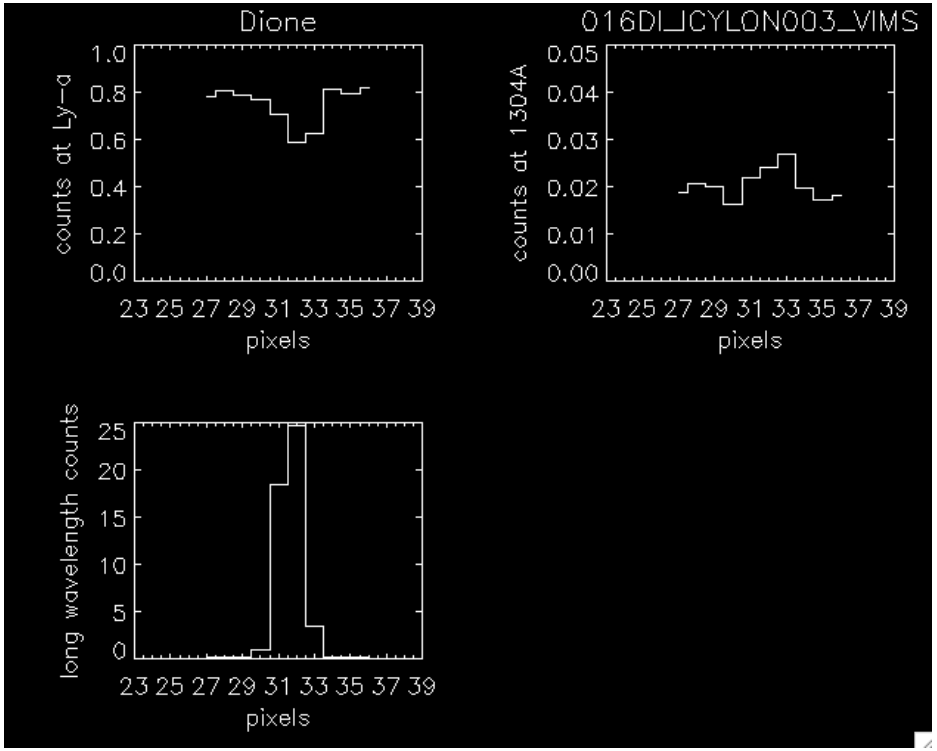
2005-284T01:45

Alt= 581,085 km

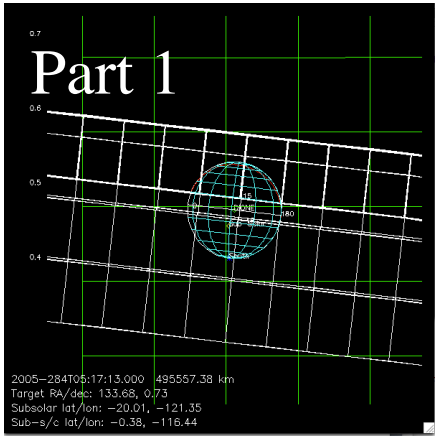
Longitude= 109°W

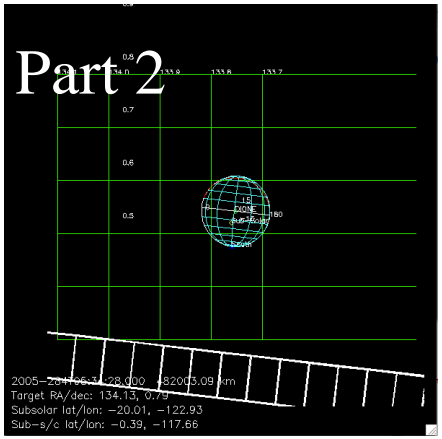
Latitude=.35°S

Phase= 19.9°



016DI_FP3INT001_CIRS





016DI_ICYLON004_CIRS

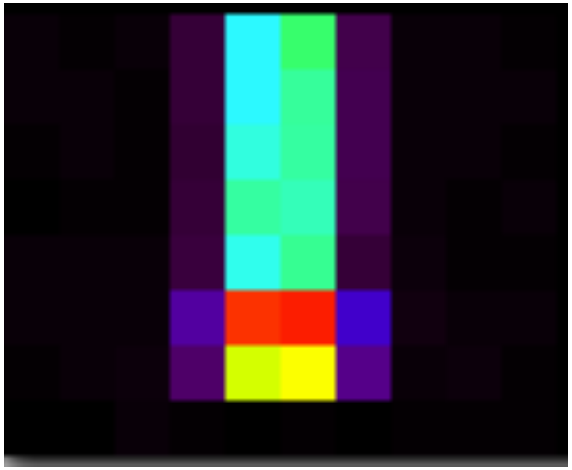
2005-284T05:18

Alt= 489,488 km

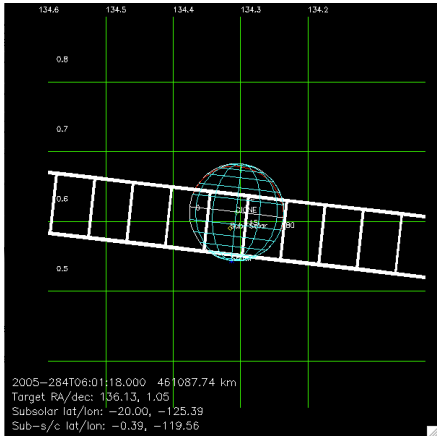
Longitude= 117°W

Latitude=.38°S

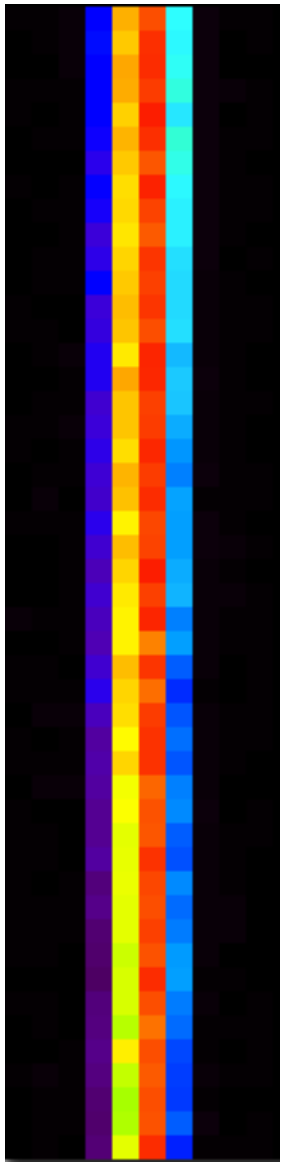
Phase= 20.3°



016DI_DIONE302_VIMS

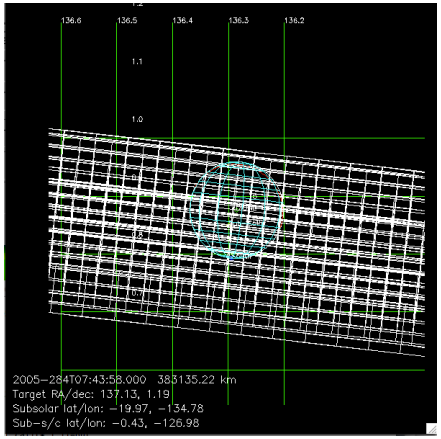


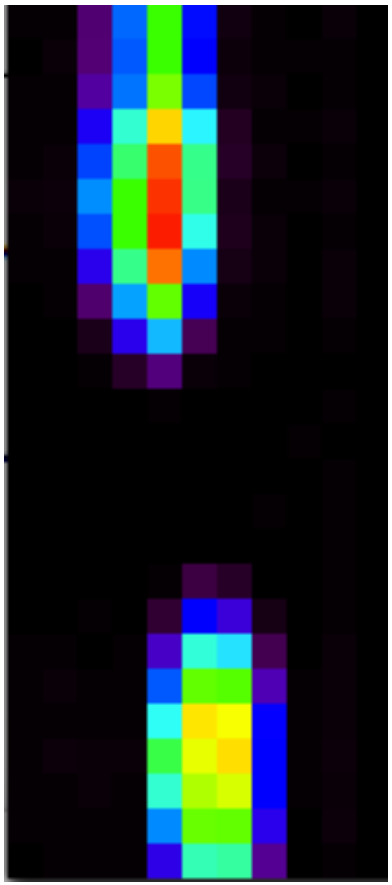
016DI_ICYLON005_VIMS



2005-284T05:58
Alt= 424,540 km
Longitude= 123°W
Latitude=0.4°S
Phase= 20.8°

016DI_FP3MAP004_CIRS





016DI_ICYLON006_CIRS

2005-284T07:44

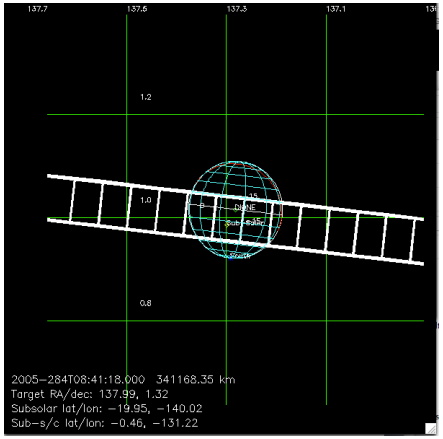
Alt= 364,899 km

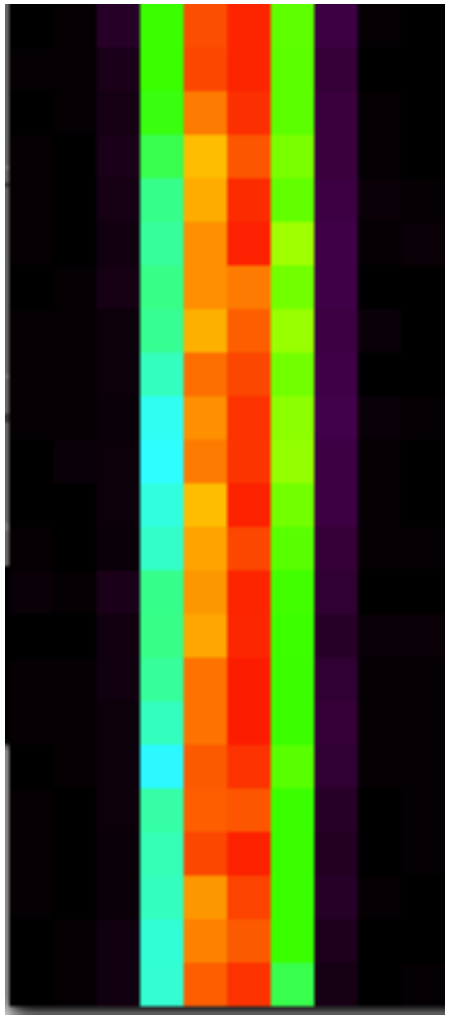
Longitude= 128°W

Latitude=0.44°S

Phase= 21.2°

016DI_DIONE002_VIMS





016DI_ICYLON007_VIMS

2005-284T08:38

Alt= 324,855 km

Longitude= 133°W

Latitude=0.47°S

Phase= 21.6°

016DI_ICYLON008_PRIME

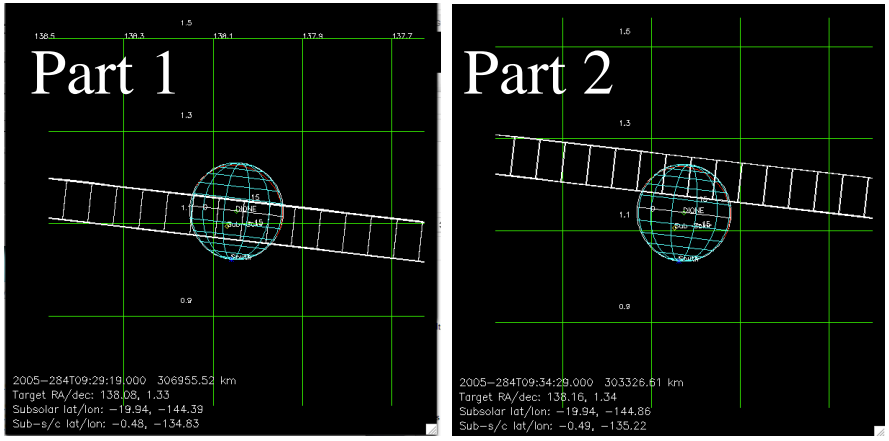
2005-284T09:30

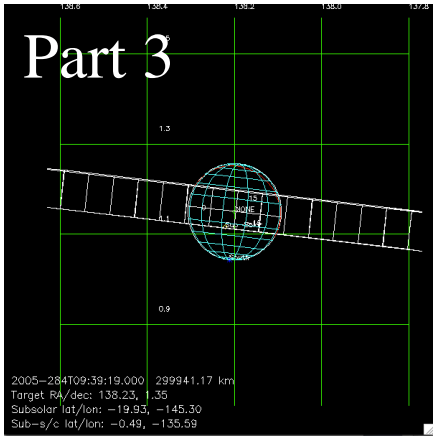
Alt= 305,690 km

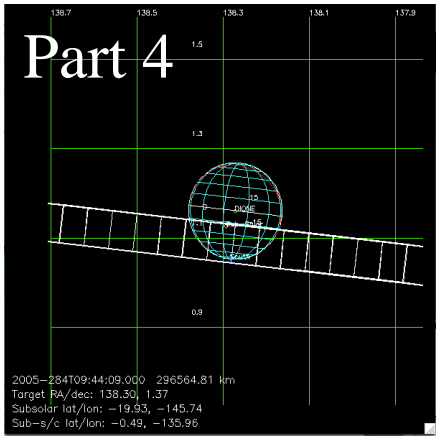
Longitude= 135°W

Latitude=0.48°S

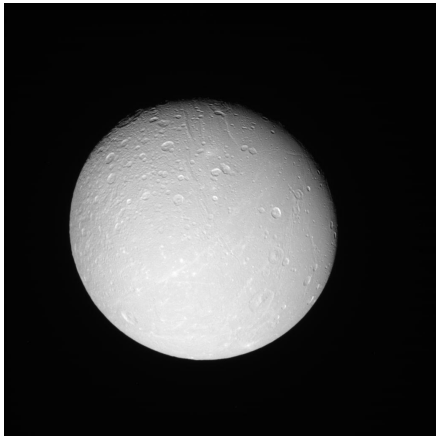
Phase= 21.8°

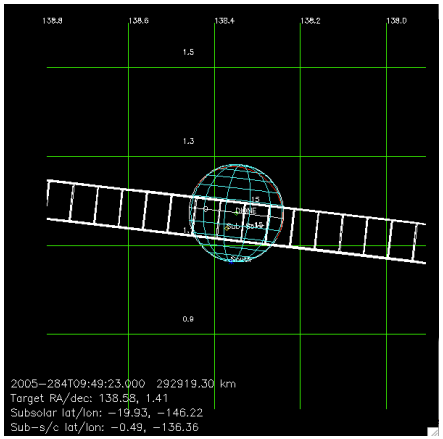






016DI_GLOCOL001_ISS





016DI_ICYLON009_ISS

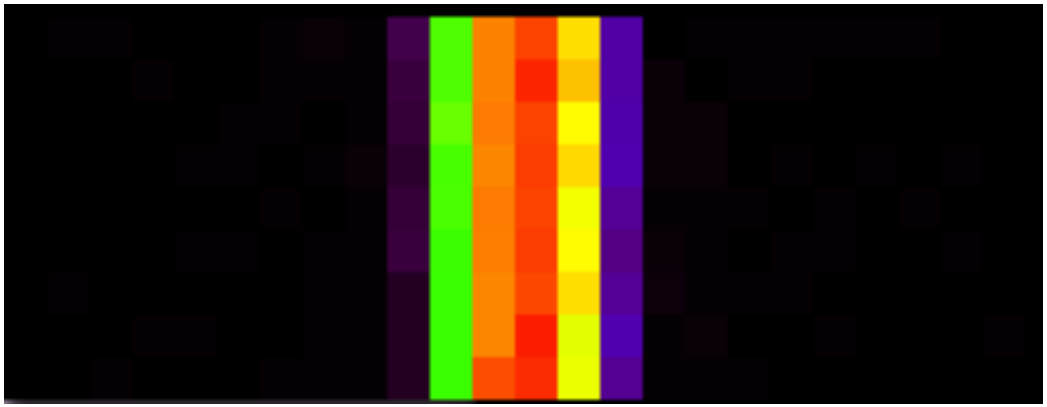
2005-284T09:50

Alt= 286,810 km

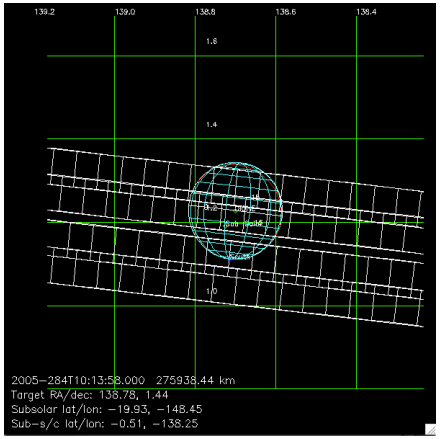
Longitude= 137°W

Latitude=0.5°S

Phase= 21.9°



016DI_FP3MAP005_CIRS



016DI_ICYLON010_CIRS

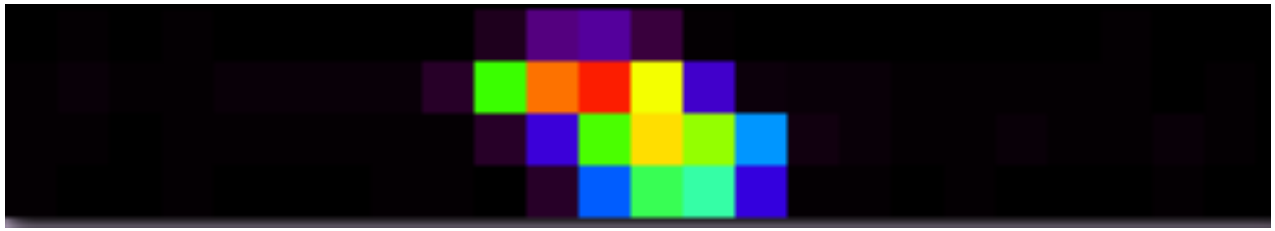
2005-284T10:14

Alt= 273,321 km

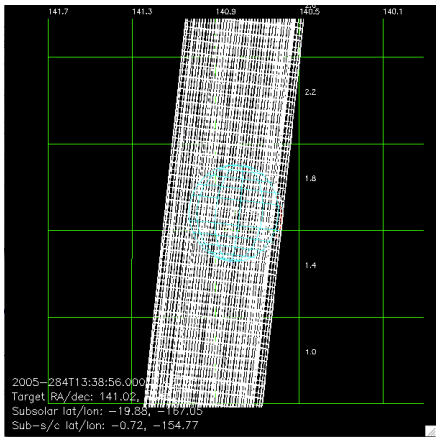
Longitude= 138°W

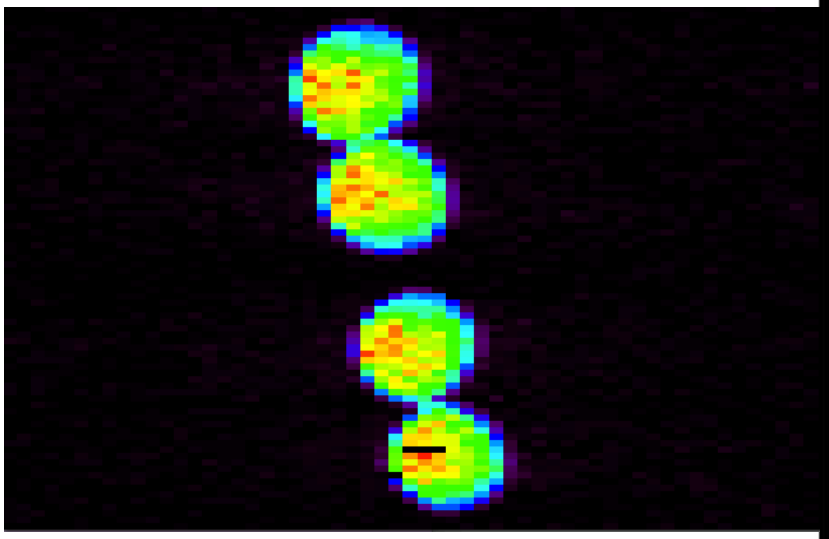
Latitude=0.5°S

Phase= 22.0°

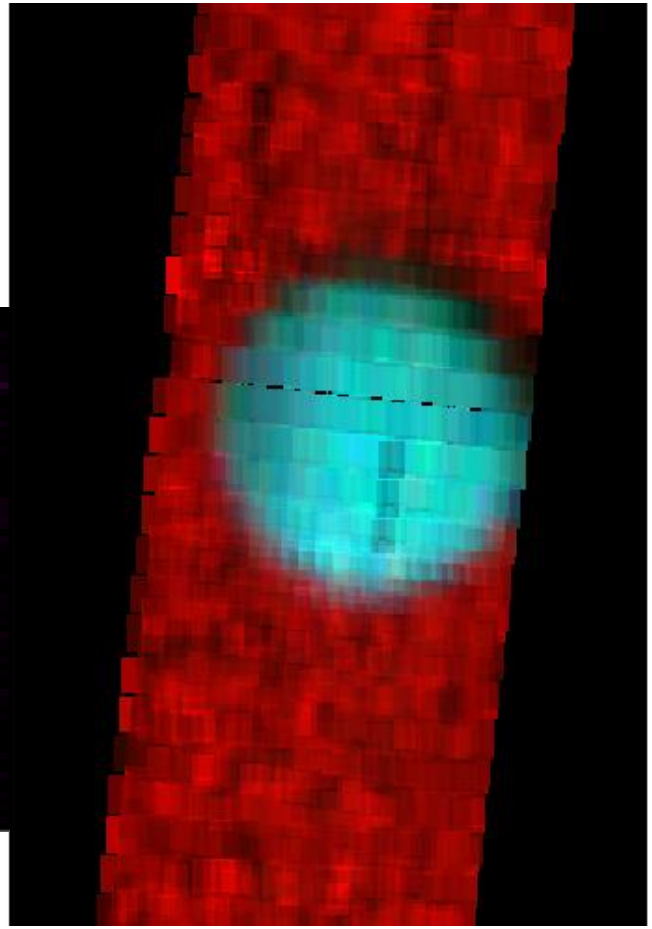


016DI_FP3MAP006_CIRS





016DI_ICYMAP001_CIRS
2005-284T13:39
Alt= 131,024 km
Longitude= 156°W
Latitude=0.8°S
Phase= 22.9°



016DI_REGMAPA001

7-panel mosaic

016DI_ICYMAP002_ISS

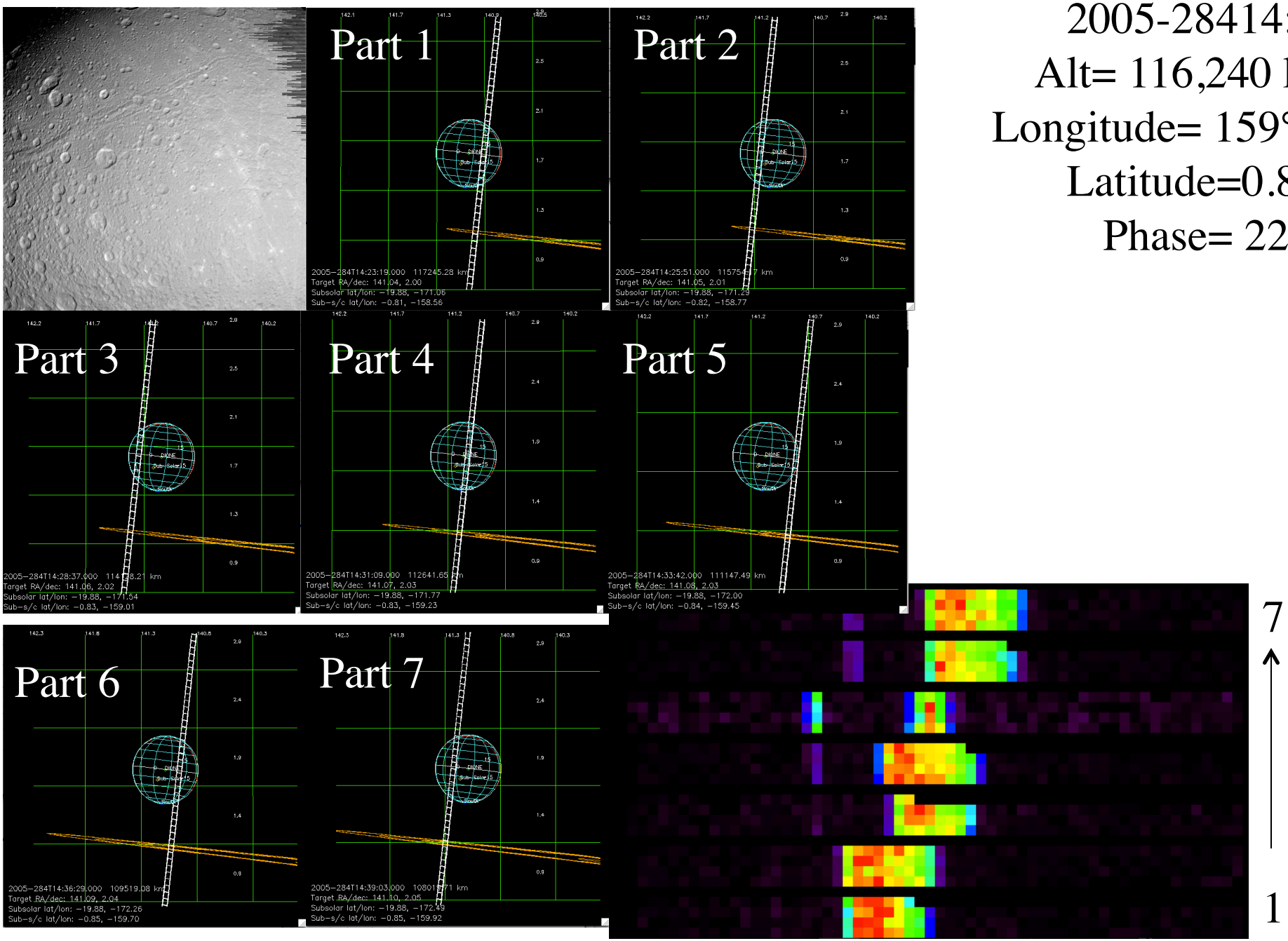
2005-28414:23

Alt= 116,240 km

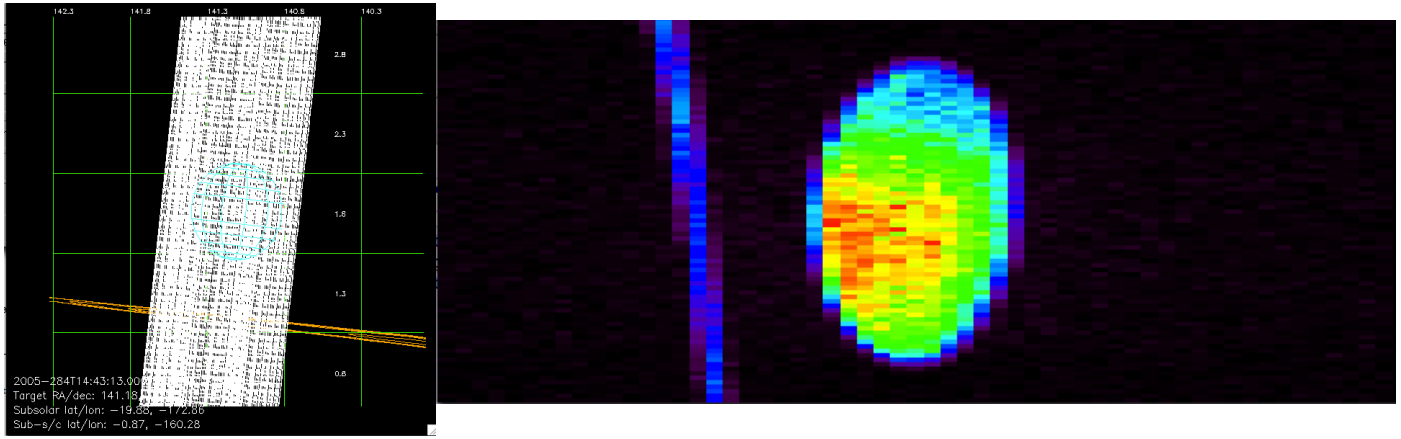
Longitude= 159°W

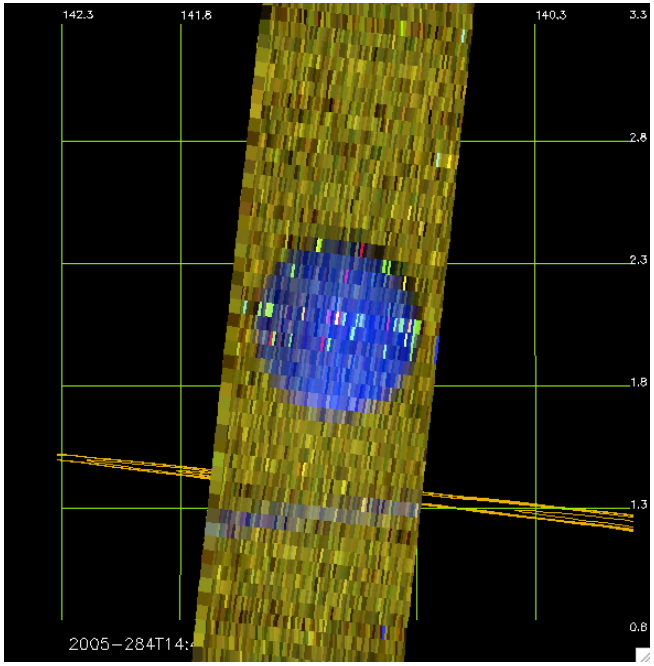
Latitude=0.8°S

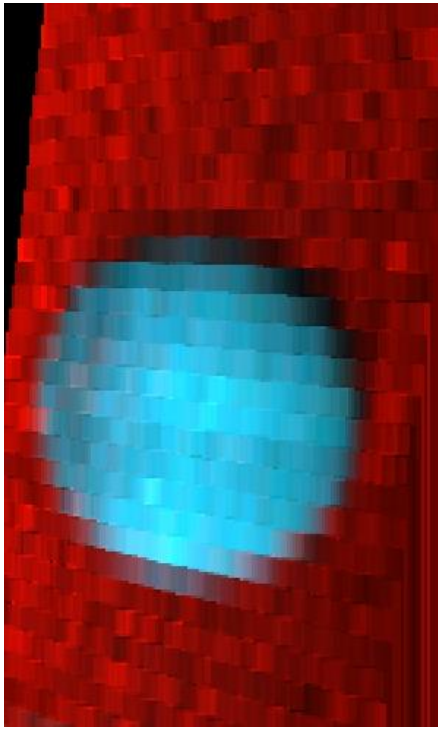
Phase= 22.9°

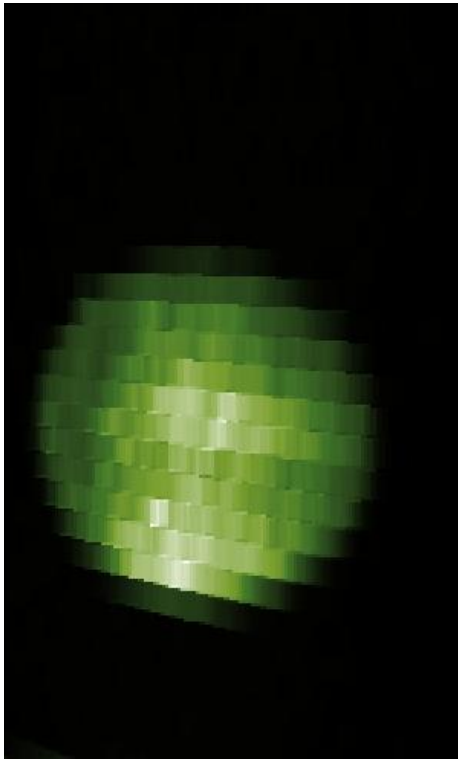


016DI_ICYMAP003_PRIME
2005-284T14:43
Alt= 92,746 km
Longitude= 162°W
Latitude=1°S
Phase= 22.9°





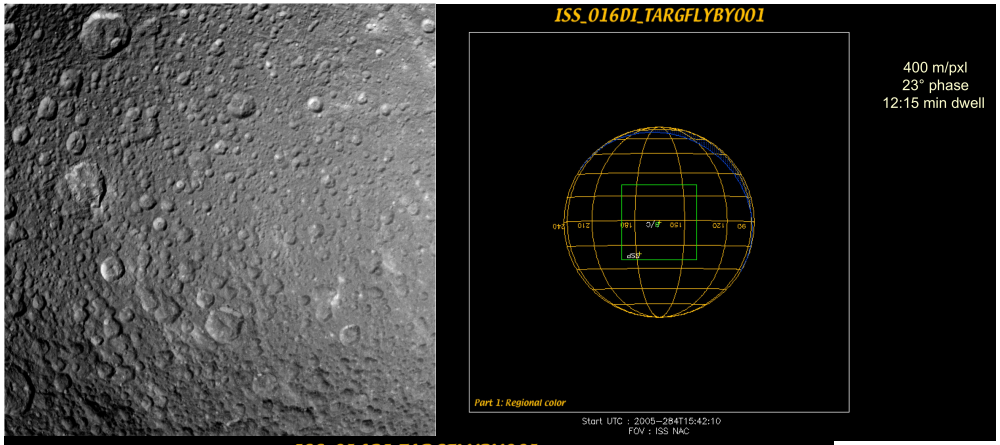




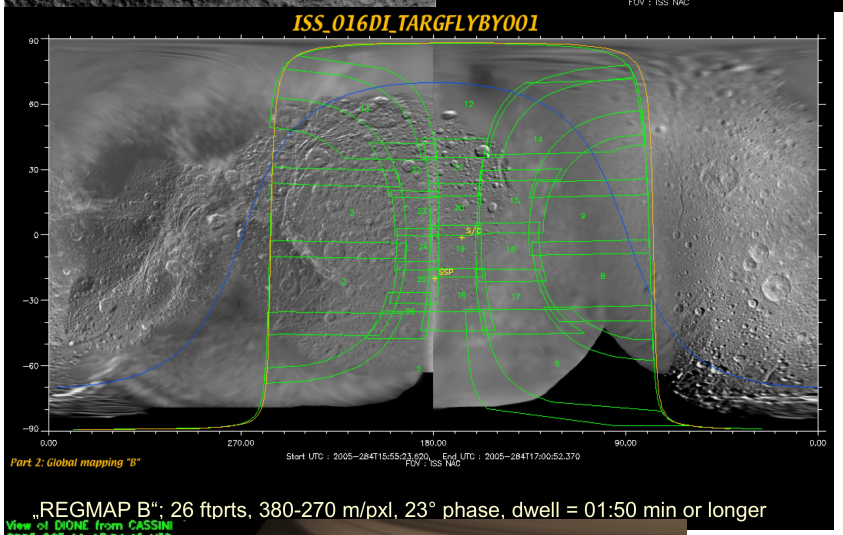
016DI_TARGFLYBY001_ISS

35 parts

016DI_ICYMAP005_ISS
2005-284T15:42
Alt= 64,749 -> 3585 km
Longitude= 166°W
Latitude
Phase= 22.7°



Part 1 (stare)

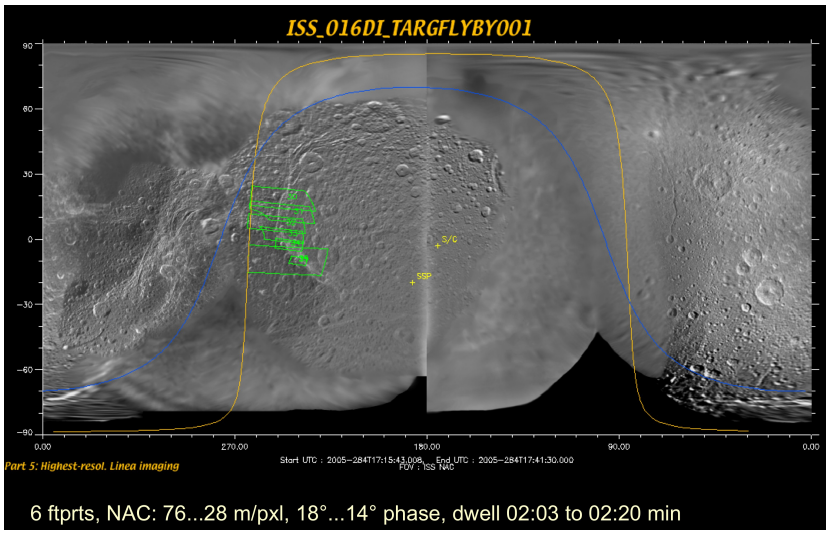


Parts 2-28 (mosaic)

„REGMAP B"; 26 ftprts, 380-270 m/pxl, 23° phase, dwell = 01:50 min or longer

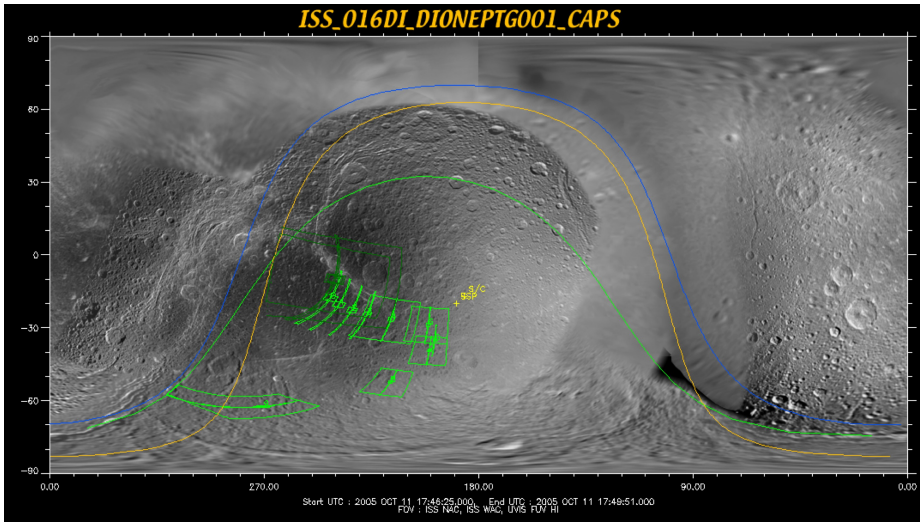
Parts 29, 30

Parts 31-35 (mosaic)



6 ftprts, NAC: 76...28 m/pxl, 18°...14° phase, dwell 02:03 to 02:20 min

016DI_DIONEPTG001_CAPS



Spatial res.: ~160...60 m/pxl (WAC); ~40...12 m/pxl (NAC, 2sum); *but no IVP tracking*

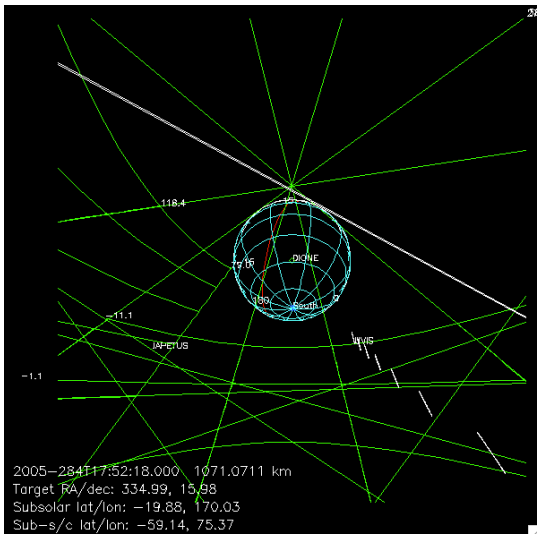
016DI_ICYMAP006_CAPS

2005-284T17:52

Alt= 726 km

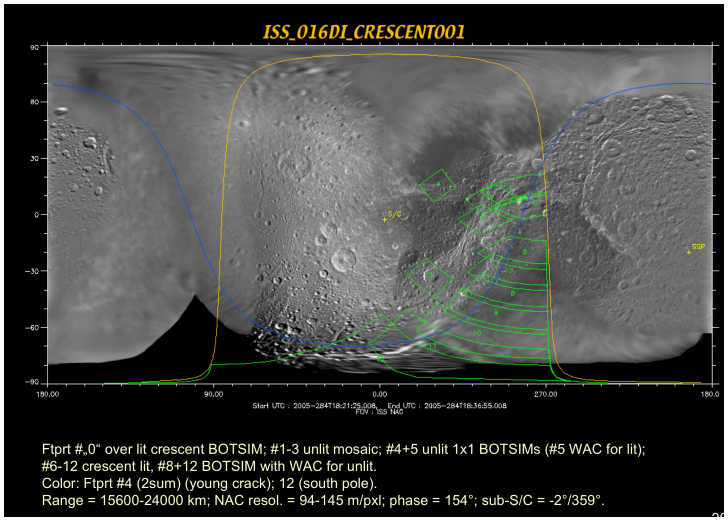
Longitude= 302°W

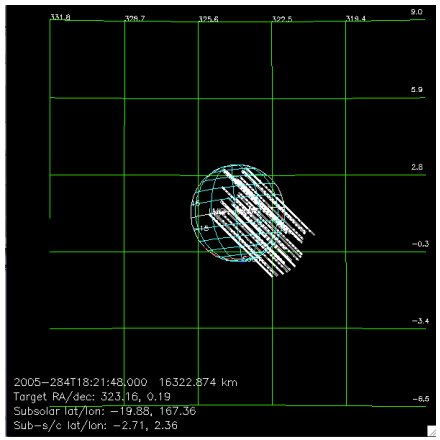
Phase= 85.4°



While pointing for CAPS, Dione flies through ORS boresights at C/A

016DI_CRESCENT001_ISS

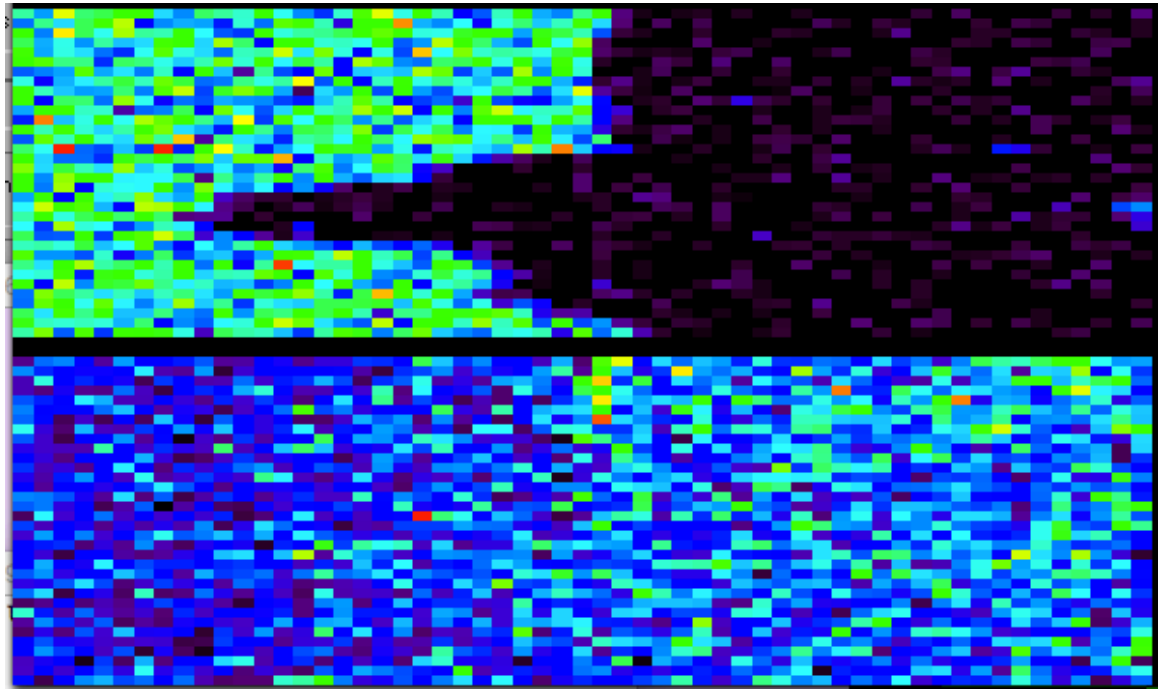




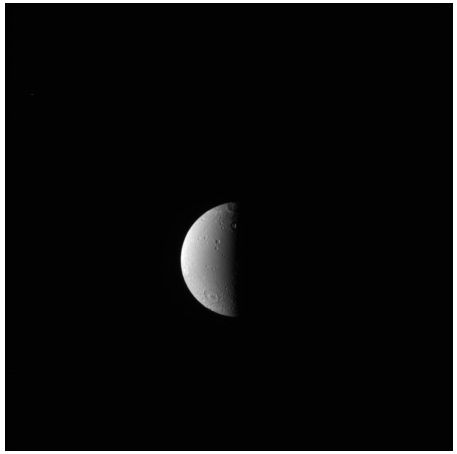
016DI_ICYMAP007_ISS
2005-284T18:22
Alt= 20,274 km
Longitude= 359°W
Latitude=2°S
Phase= 153.5°

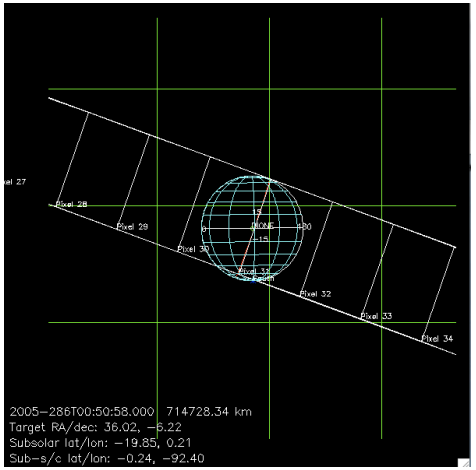
Ly-a

Long waves
(low SNR)



016DI_094W093PH001_ISS





016DI_ICYLON011_ISS

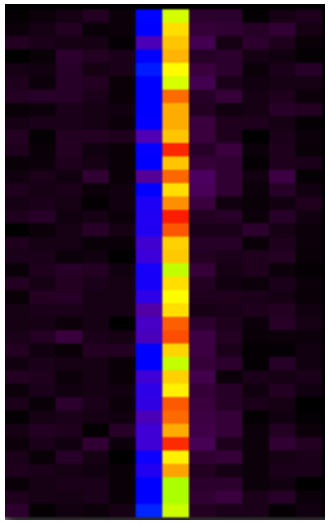
2005-286T00:51:58

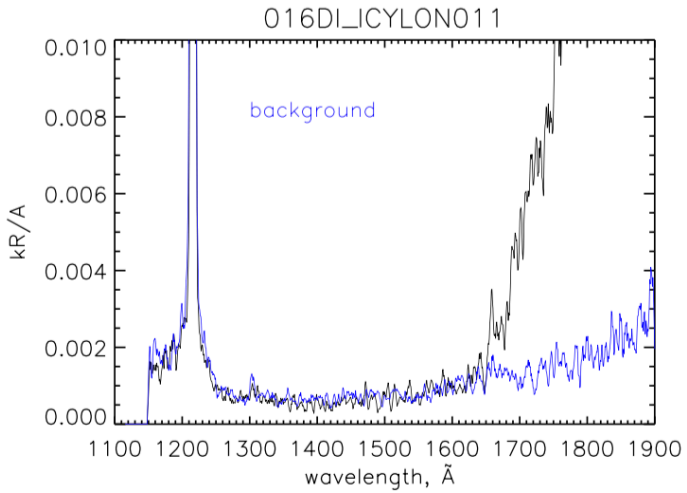
Alt= 709,411 km

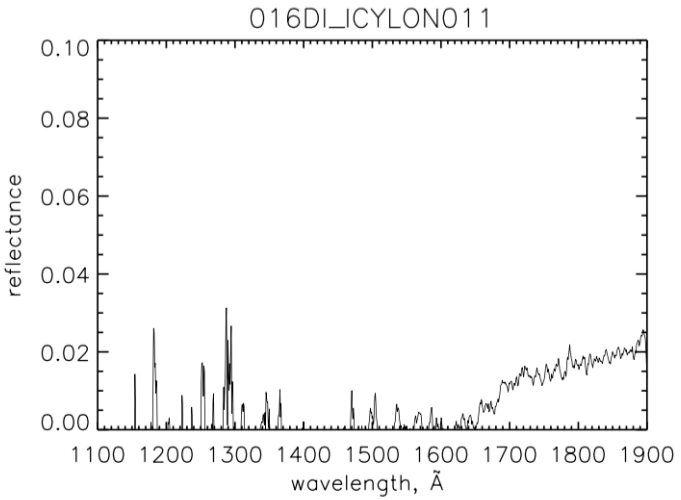
Longitude= 96°W

Latitude=0.25°S

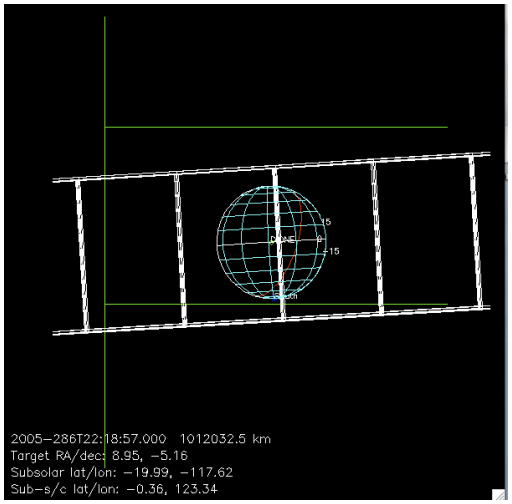
Phase= 92.4°

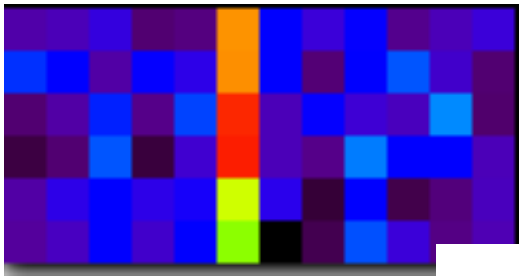






016DI_238W119PH001_ISS





016DI_ICYLON012_ISS

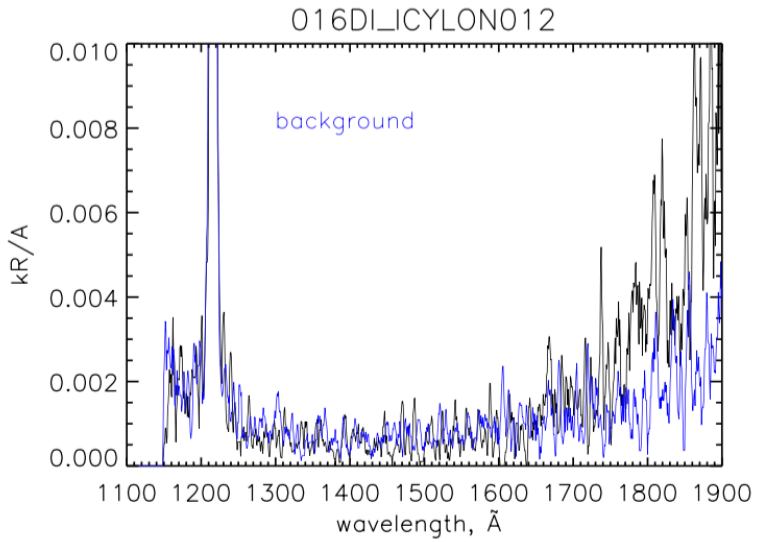
2005-286T22:19

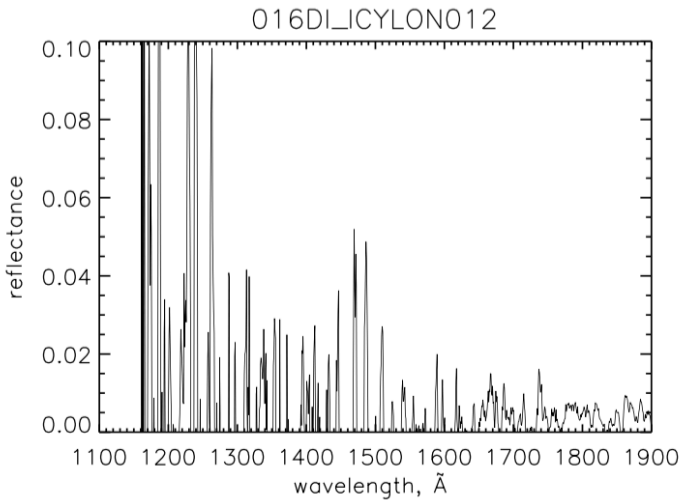
Alt= 1,015, 190 km

Longitude= 237°W

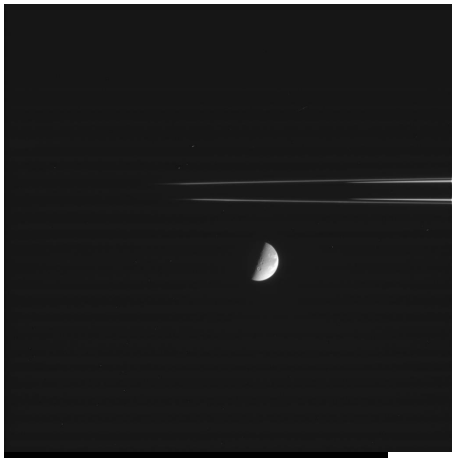
Latitude=0.35°S

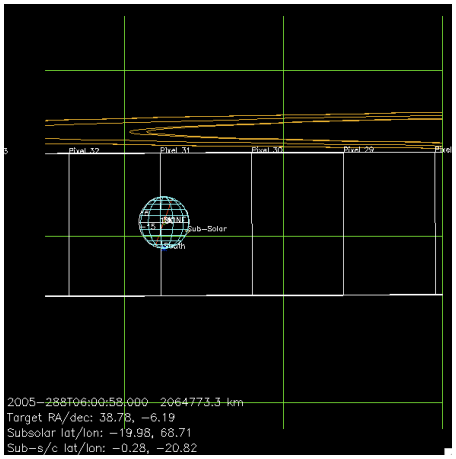
Phase= 117.5°

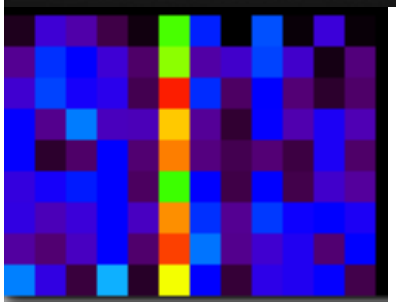




016DI_022W090PH001_ISS







016DI_ICYLON013_ISS

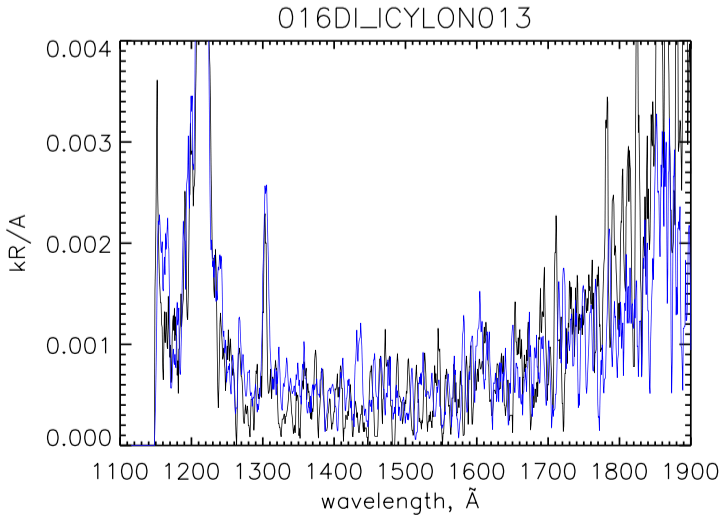
2005-288T05:55

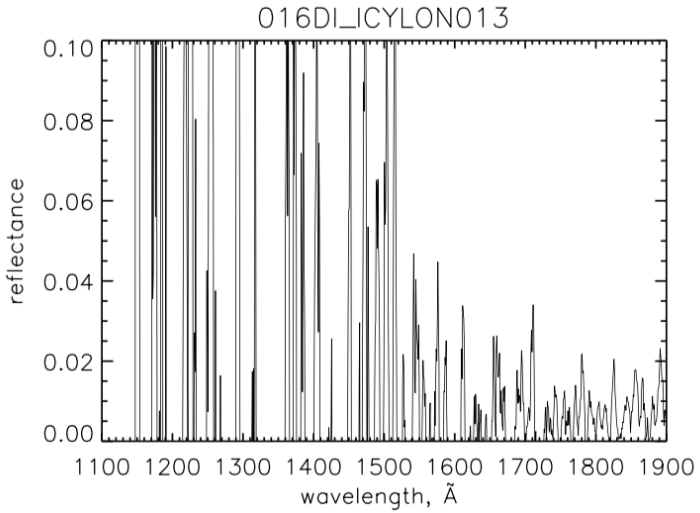
Alt= 2,064,142 km

Longitude= 21°W

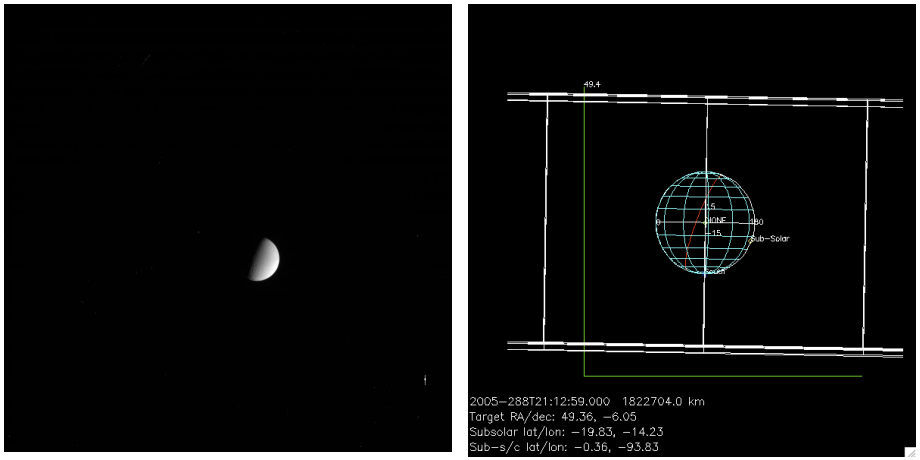
Latitude=0.28°S

Phase= 89.7°



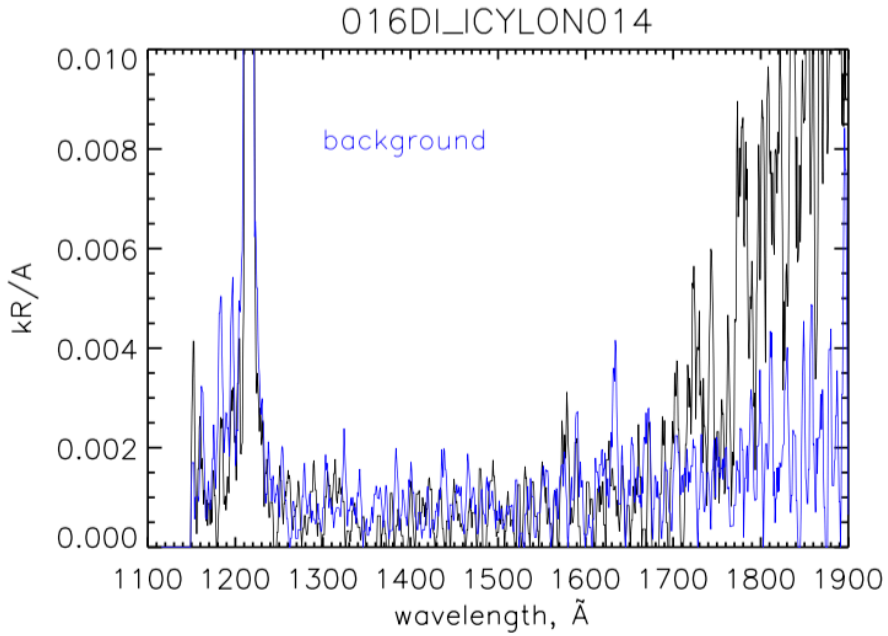


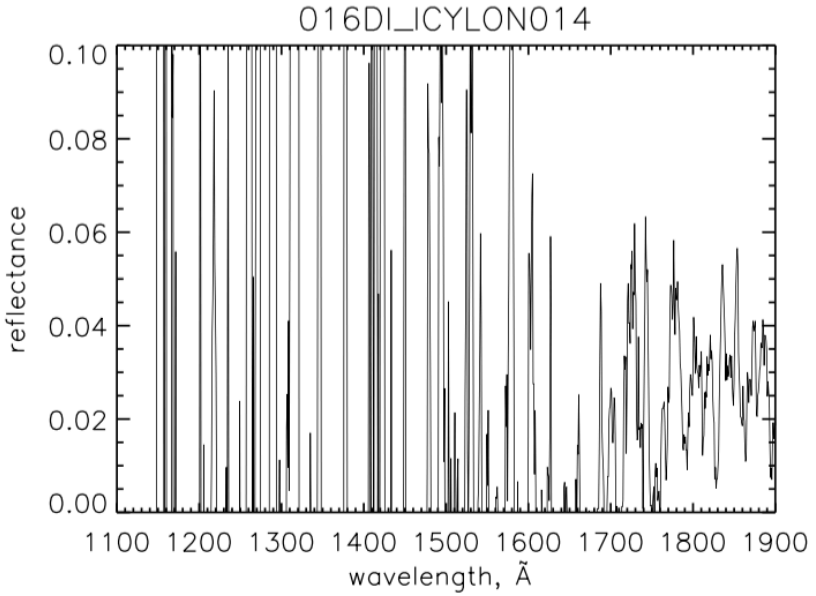
016DI_094W080PH001_ISS



016DI_ICYLON014_ISS

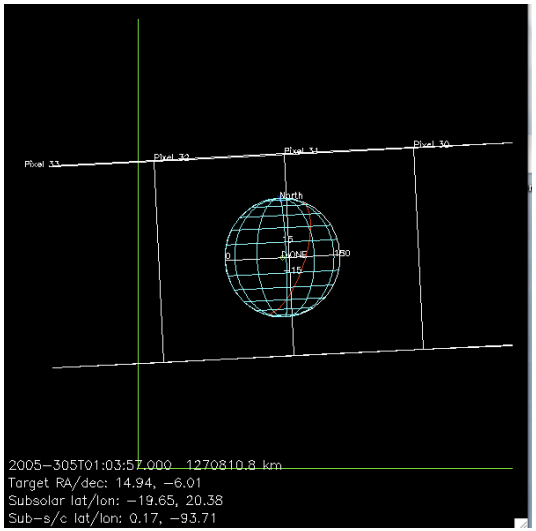
2005-288T21:13
Alt= 1,821,315 km
Longitude= 94°W
Latitude=0.36°S
Phase= 80.0°

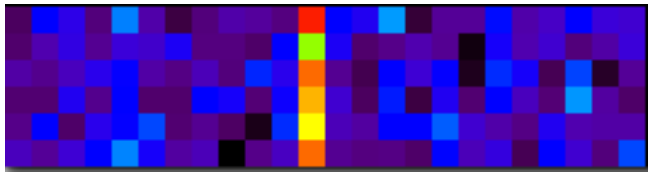


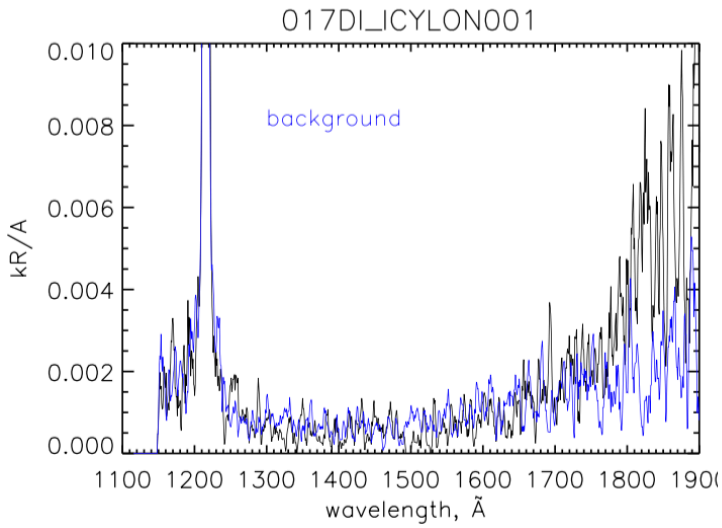


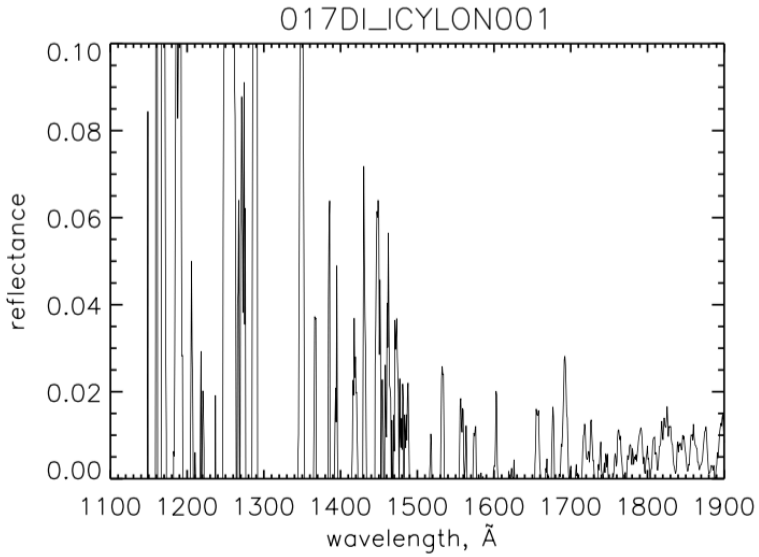
ISS_017DI_094W113PH001_PRIME

017DI_ICYLON001_ISS
2005-305T01:04
R= 1,268,945 km
Longitude= 94°W
Latitude=0.17°N
Phase= 112.8°

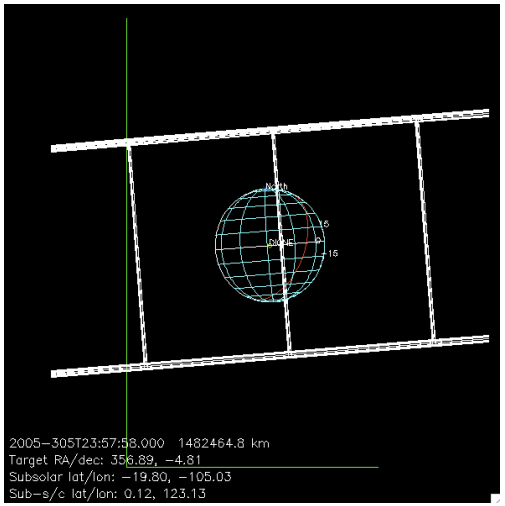








017DI_238W130PH001_ISS



017DI_ICYLON002_ISS

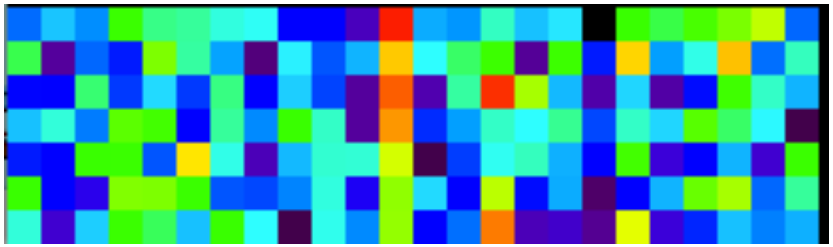
2005-305T23:50

Alt= 1,486,218 km

Longitude= 237°W

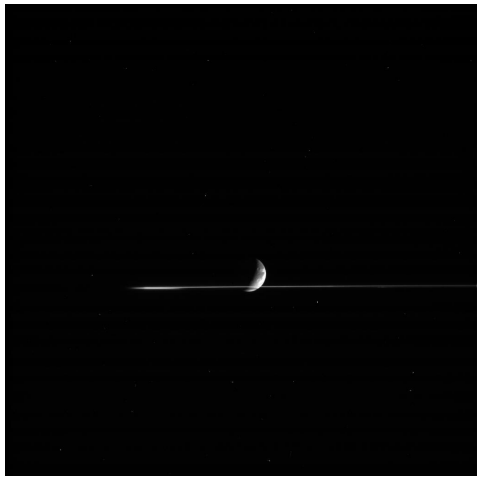
Latitude=0.12°N

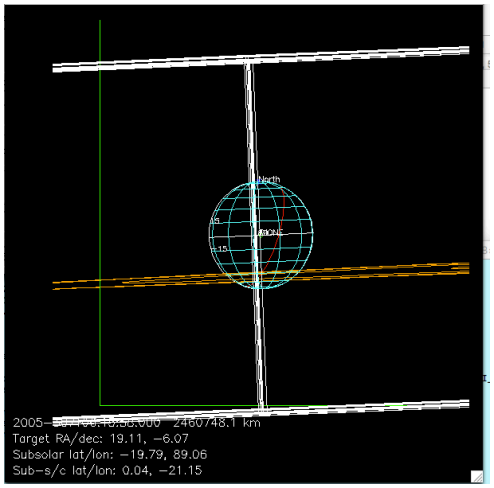
Phase= 129.3°

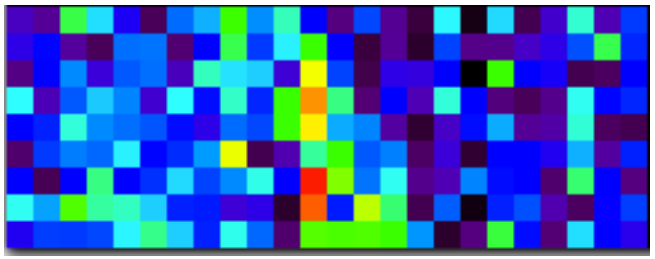


Low SNR

017DI_022W109PH001_ISS



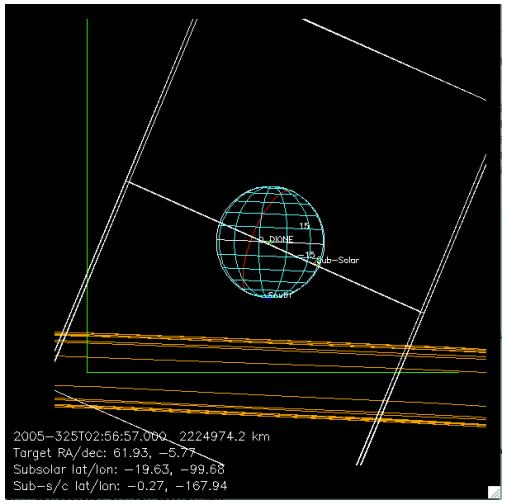




017DI_ICYLON003_ISS
2005-307T06:16
Alt= 2,460,037 km
Longitude= 21°W
Latitude=0.04°N
Phase= 109.2°

Rings in rows with Dione

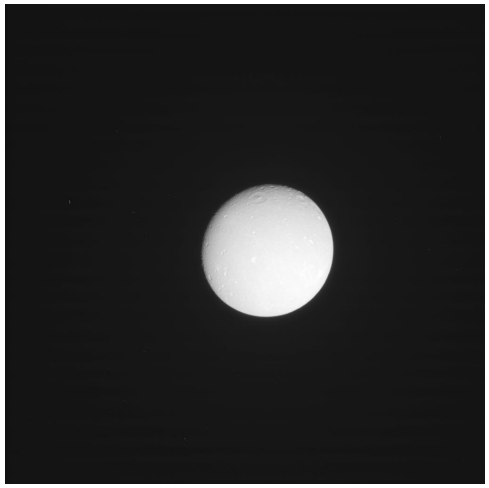
018DI_166W069PH001_ISS

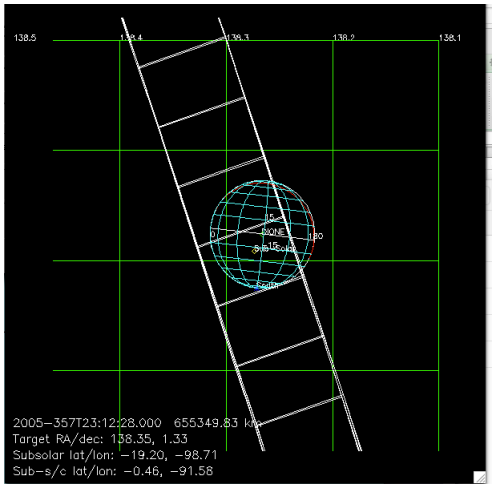


018DI_ICYLON001_ISS
2005-325T02:58
Alt= 2,224,154 km
Longitude= 168°W
Latitude=0.28°S
Phase= 69.5°

Rings in rows with Dione

019DI_LIMB180LA001_ISS





019DI_ICYLON001_ISS

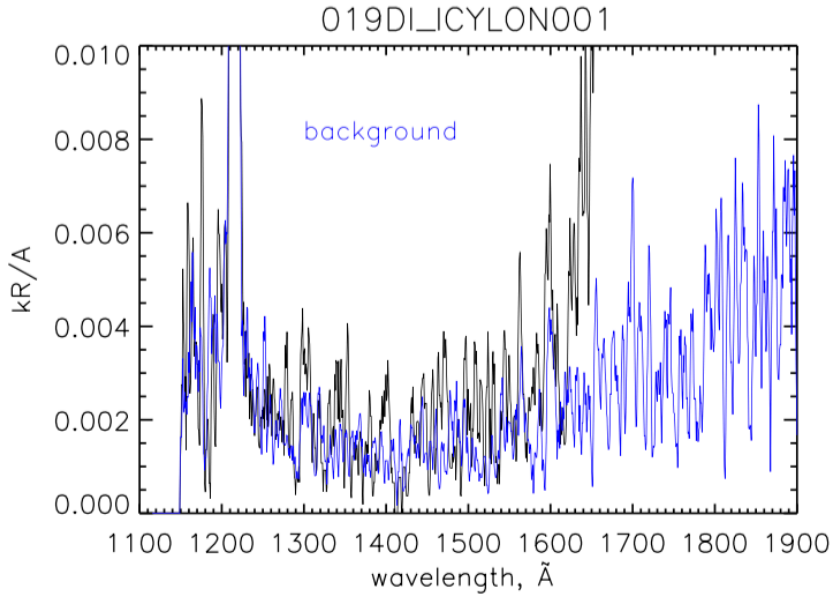
2005-357T23:13

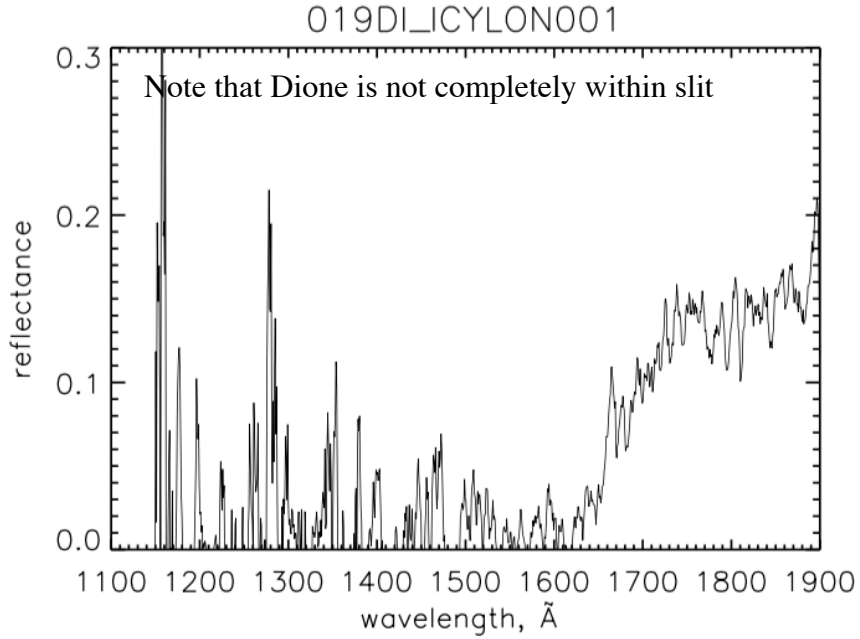
Alt= 654,008 km

Longitude= 91°W

Latitude=0.46°S

Phase= 20°

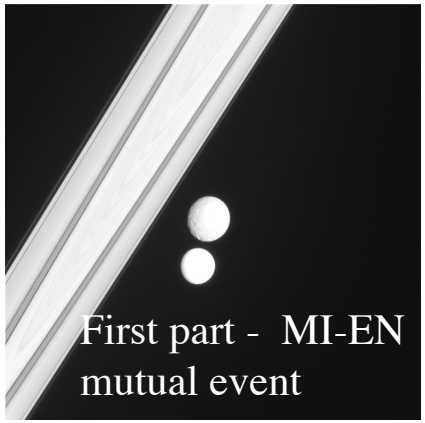


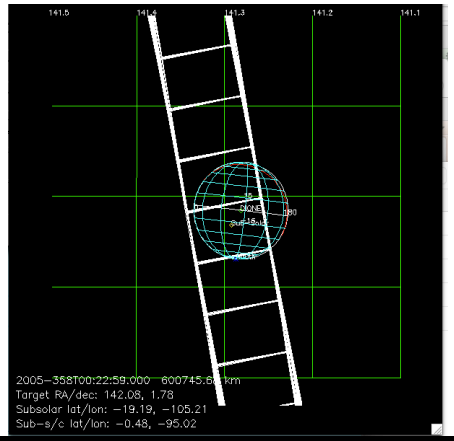


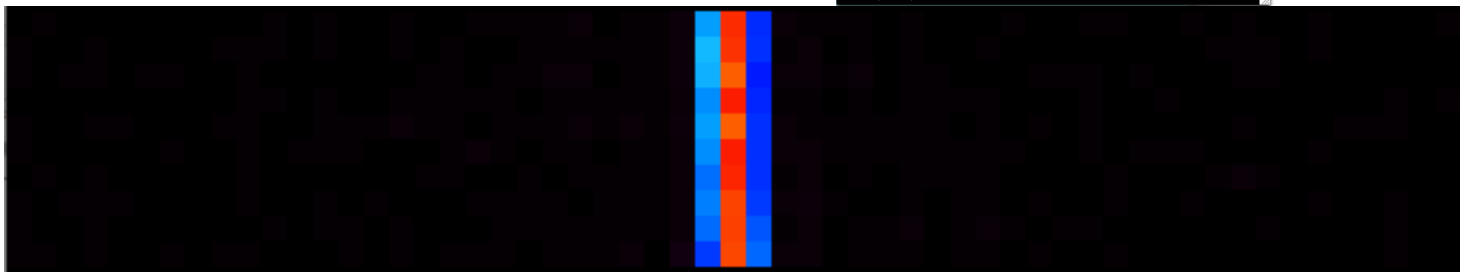
019DI_GLOCOL001_ISS

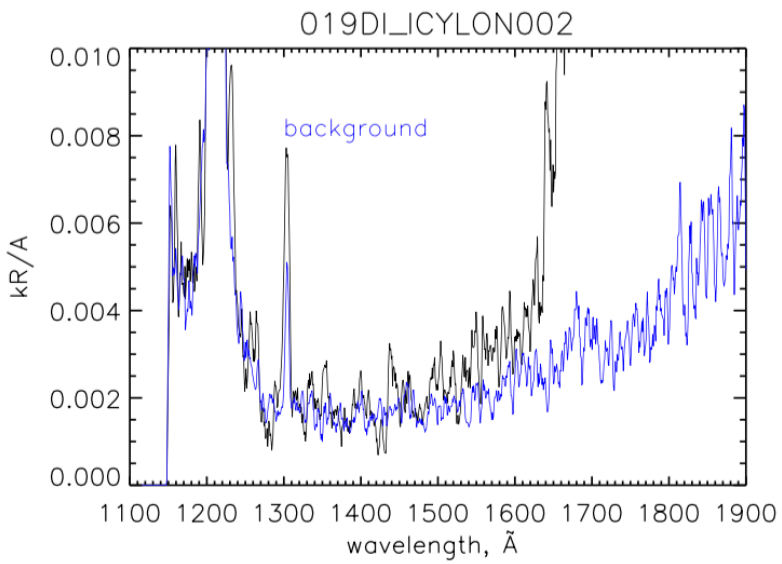
019DI_ICYLON002_ISS

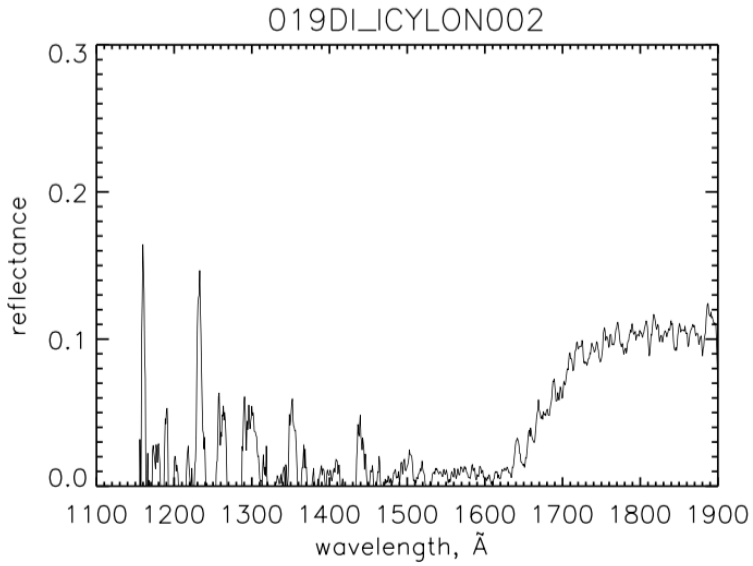
2005-357T23:35
Alt= 593,295 km
Longitude= 95°W
Latitude=0.5°S
Phase= 21.4°



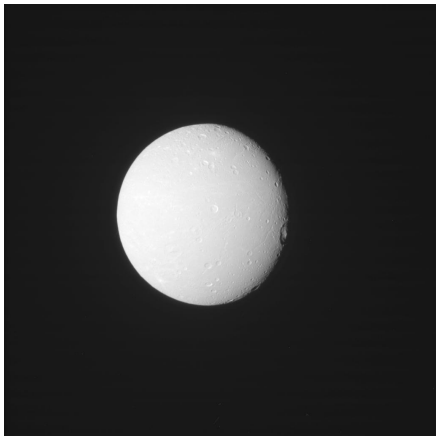


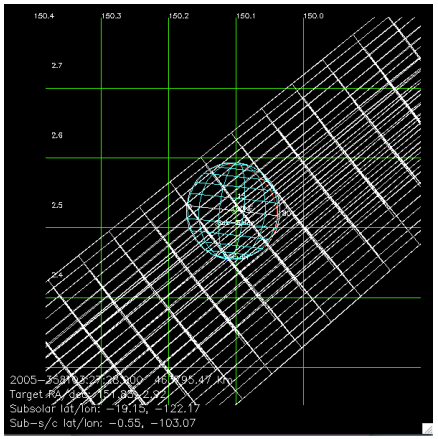






019DI_FP3GLOBAL022_CIRS





019DI_ICYLON003_CIRS

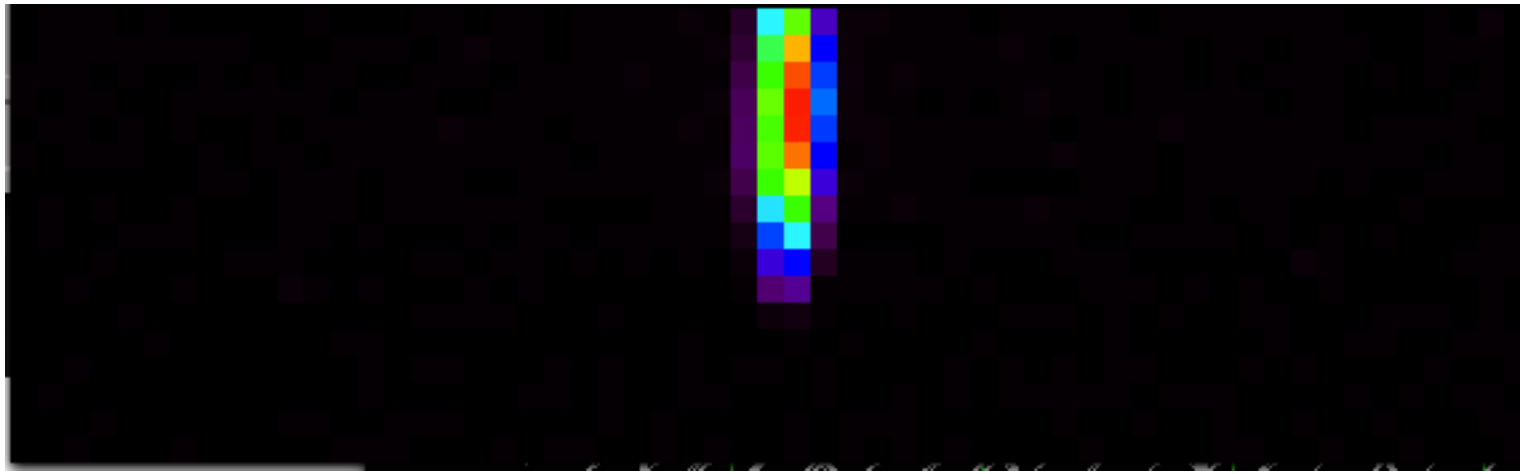
2005-358T03:25

Alt= 451,879 km

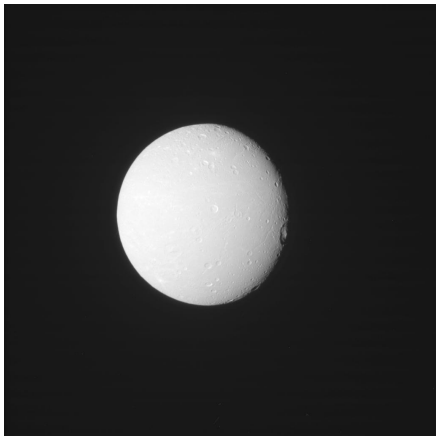
Longitude= 104°W

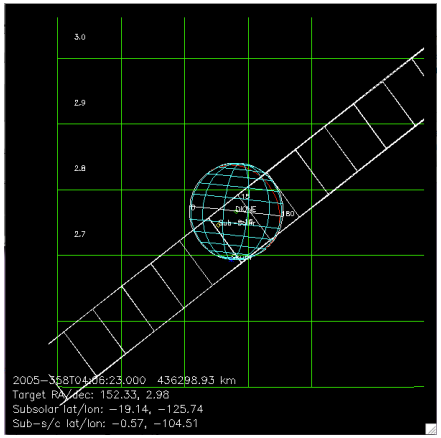
Latitude=0.57°S

Phase= 27°



019DI_REGGEODA001_ISS





019DI_ICYLON004_ISS

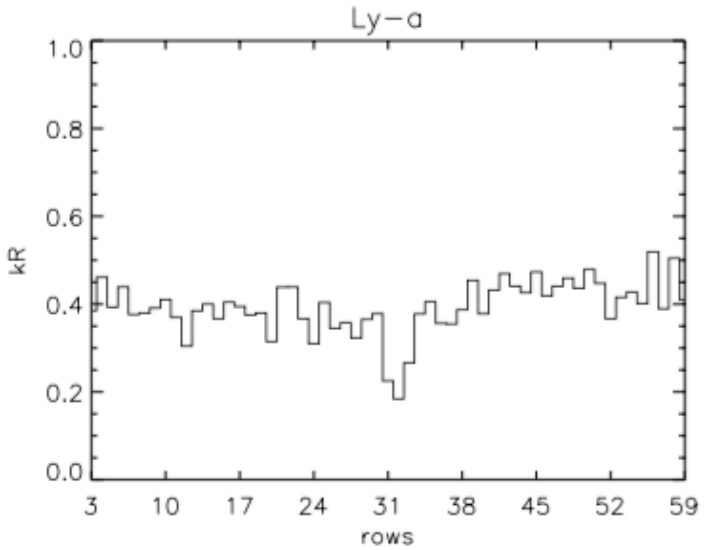
2005-358T04:05

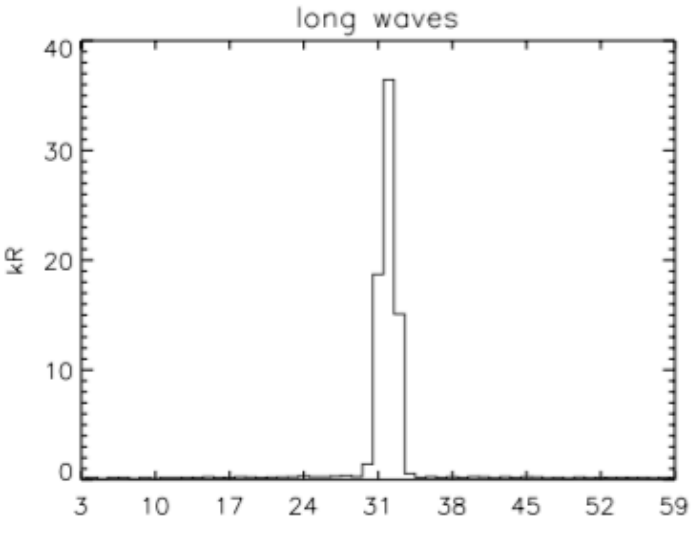
Alt= 435,039 km

Longitude= 104.6°W

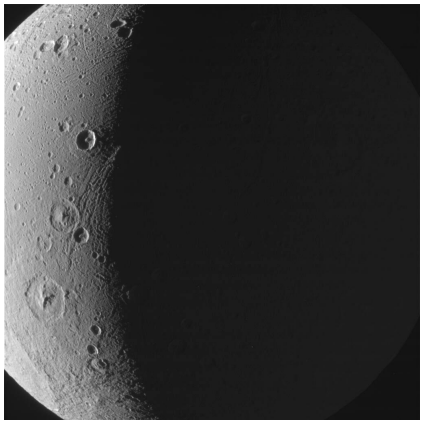
Latitude=0.57°S

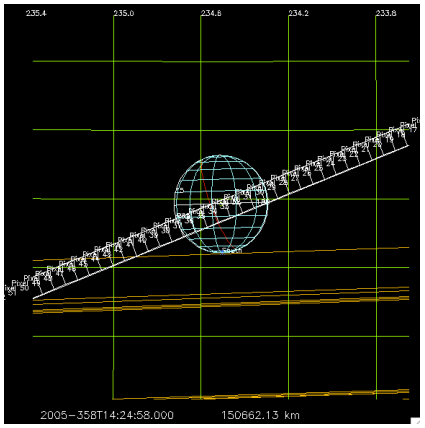
Phase= 27.9°





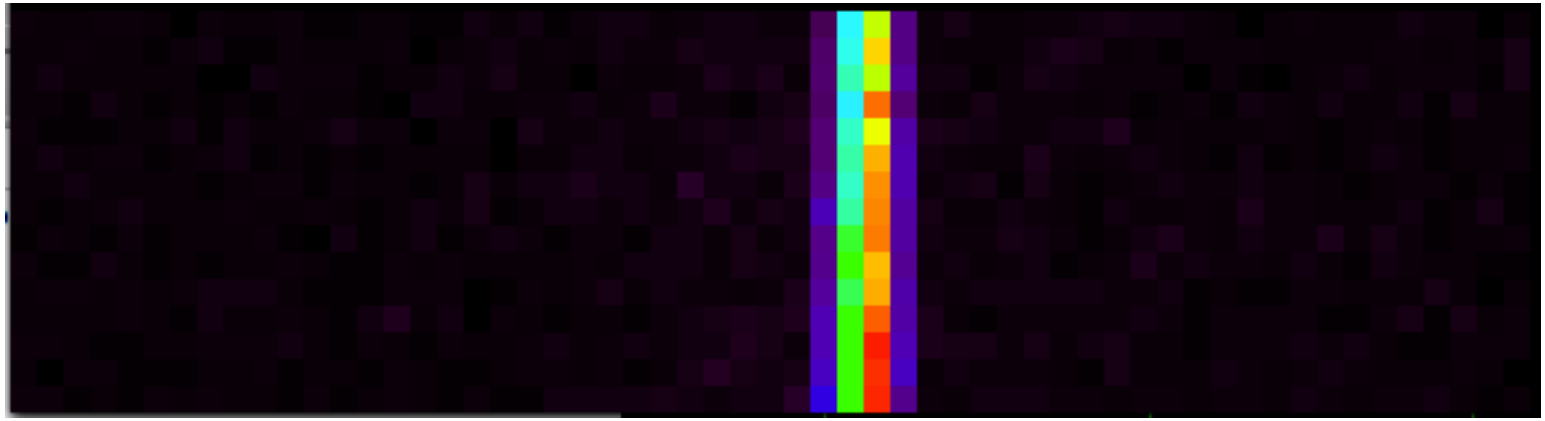
019DI_DIONE002_VIMS



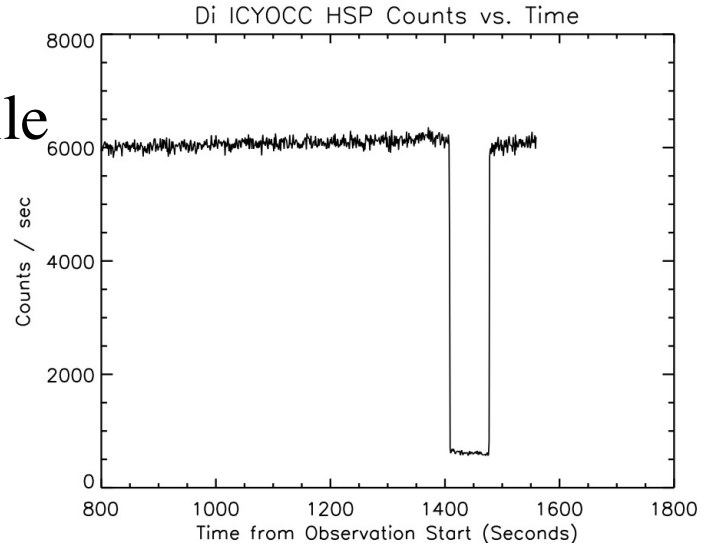


019DI_ICYLON005_VIMS

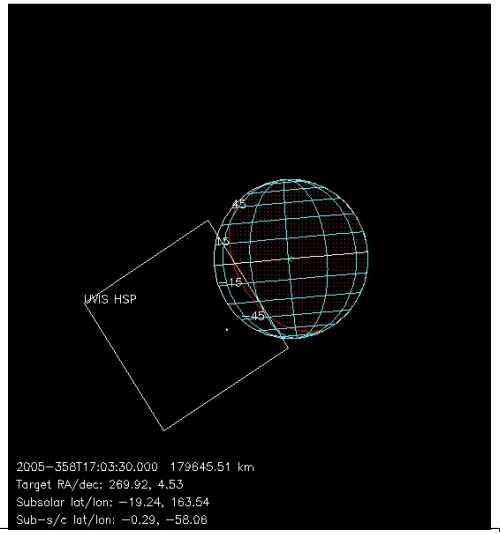
2005-358T14:20
Alt=150,555 km
Longitude= 76°W
Latitude=0.65°S
Phase= 105°



HSP profile

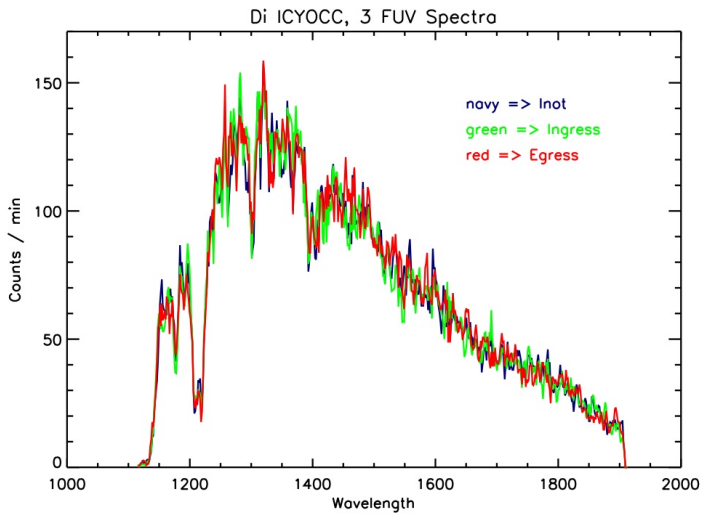


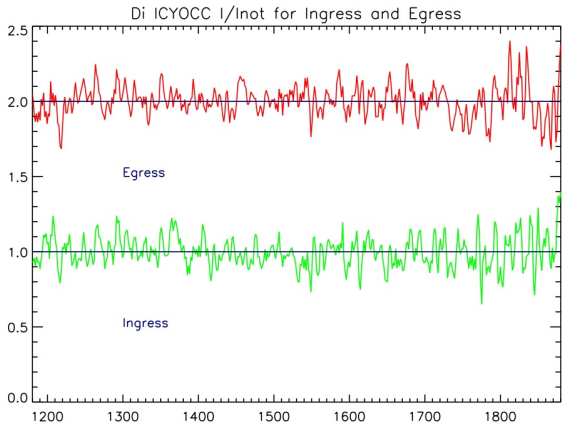
UVIS_019DI_ICYOCC081_PRIME
2005-358T16:40
Ingress lat/lon: -54.1 / 148.8
Egress lat/lon: -52.1 / 328.6
Star: 66 Ophiuchus



Ingress

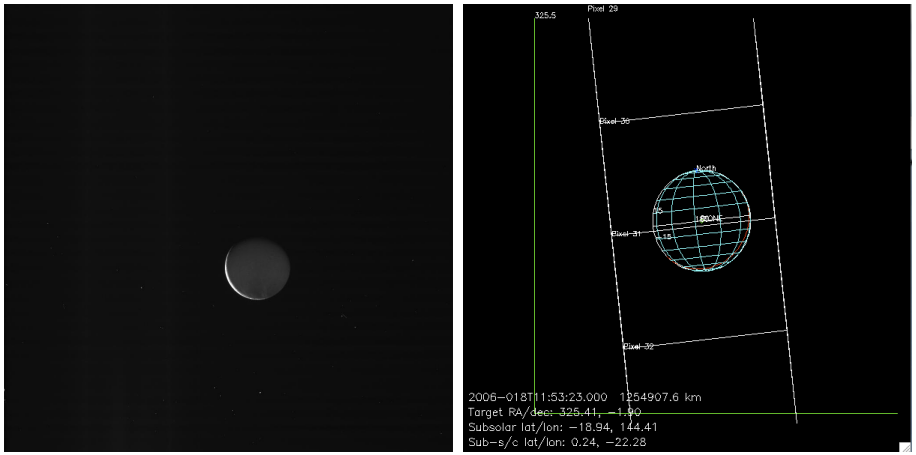
Spectra of I, I_0 (counts per integration period vs wavelength)





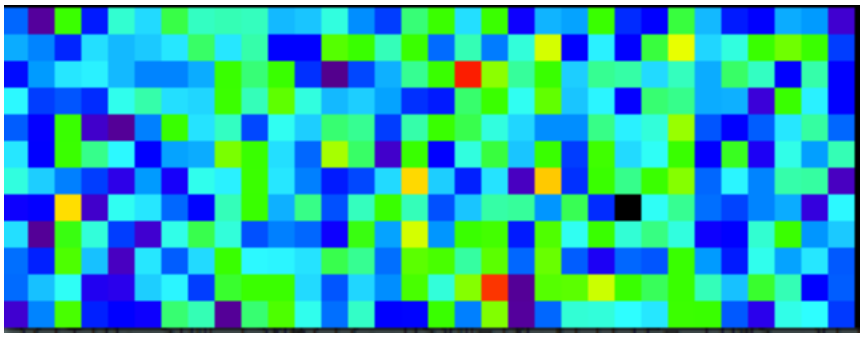
Spectrum of I/I_0

020DI_022W157PH001_ISS



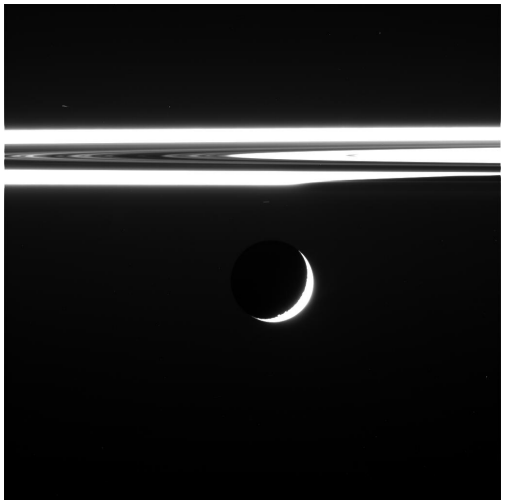
020DI_ICYLON001_ISS

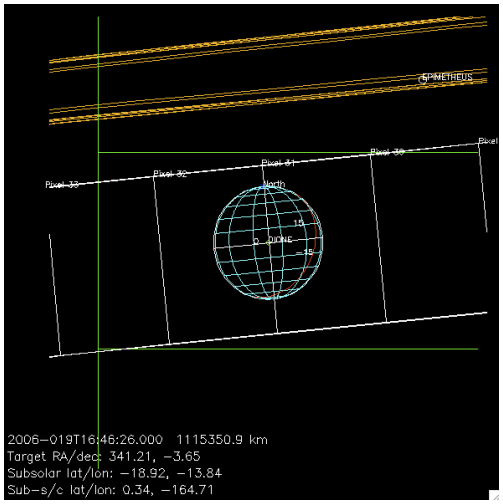
2006-018T11:54
Alt= 1,256,358 km
Longitude= 23°W
Latitude=0.25°N
Phase= 157.1°

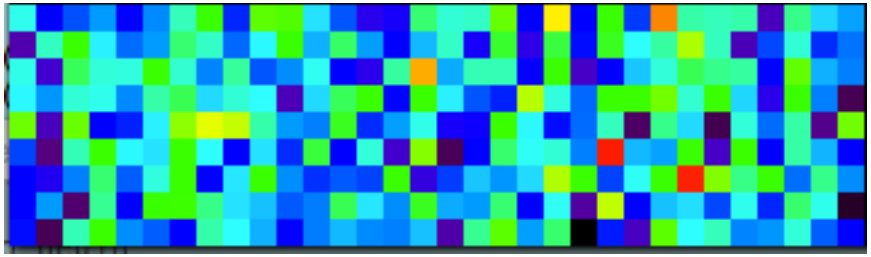


Low SNR

020DI_166W146PH001_ISS



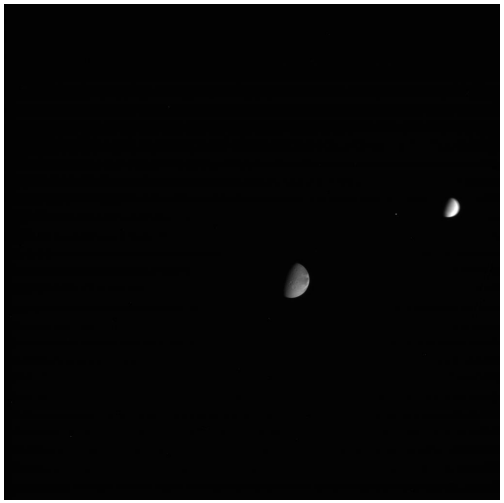


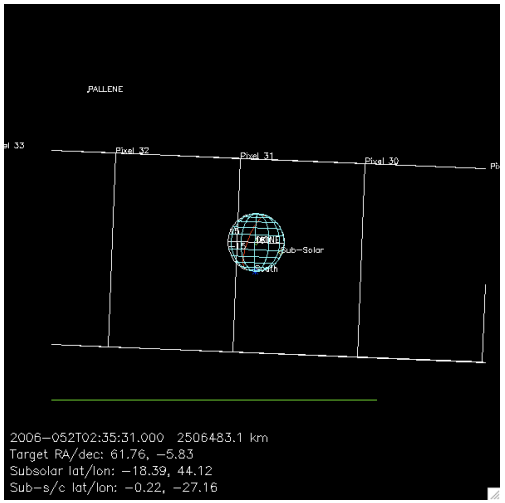


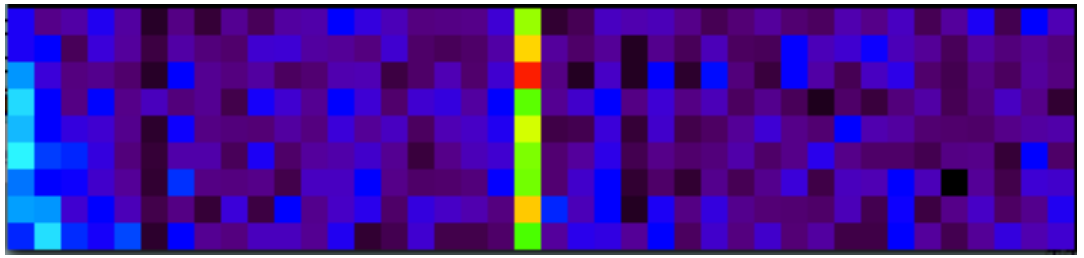
020DI_ICYLON012_ISS
2006-019T16:40
Alt= 1,115,973 km
Longitude= 165°W
Latitude=0.34°N
Phase= 146°

Low SNR

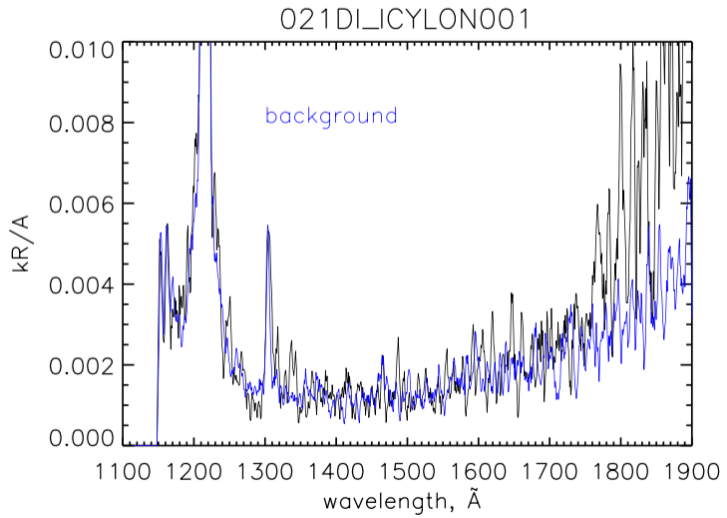
021DI_027W073PH001_ISS

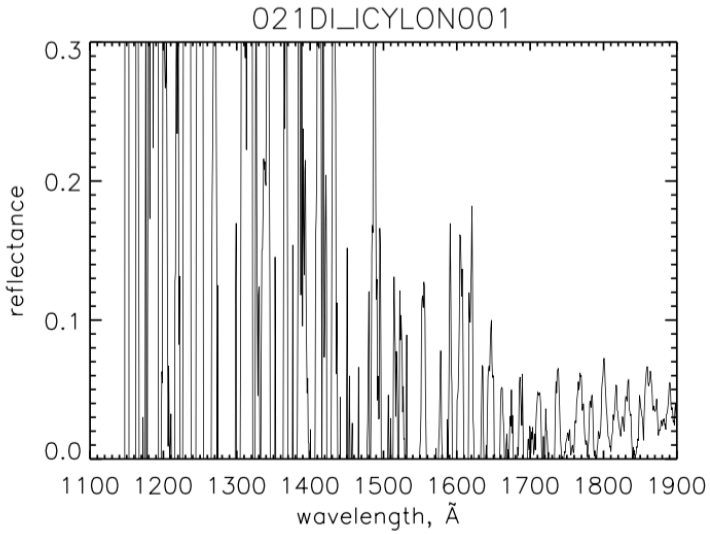




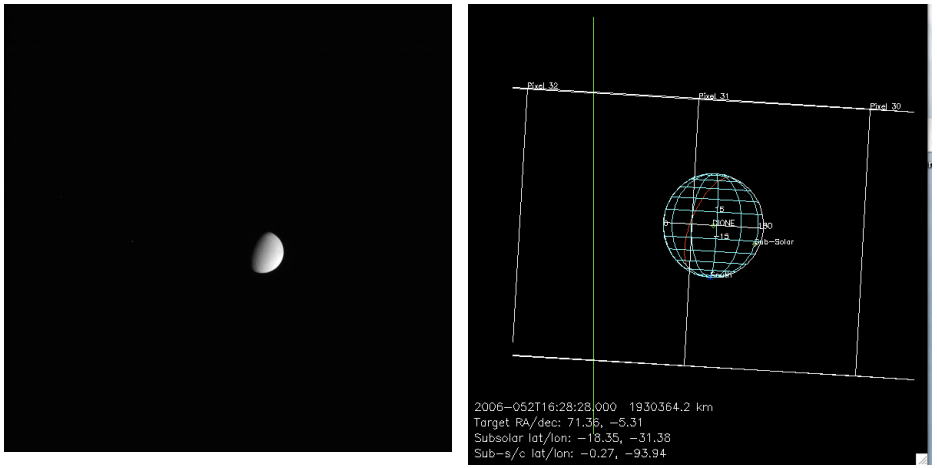


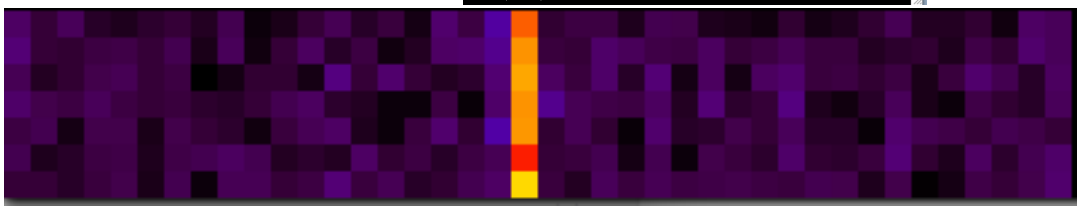
021DI_ICYLON001_ISS
2006-052T02:36
Alt= 2,502,063 km
Longitude= 28°W
Latitude=0.22°S
Phase= 72.6°





021DI_094W064PH001_ISS





021DI_ICYLON002_ISS

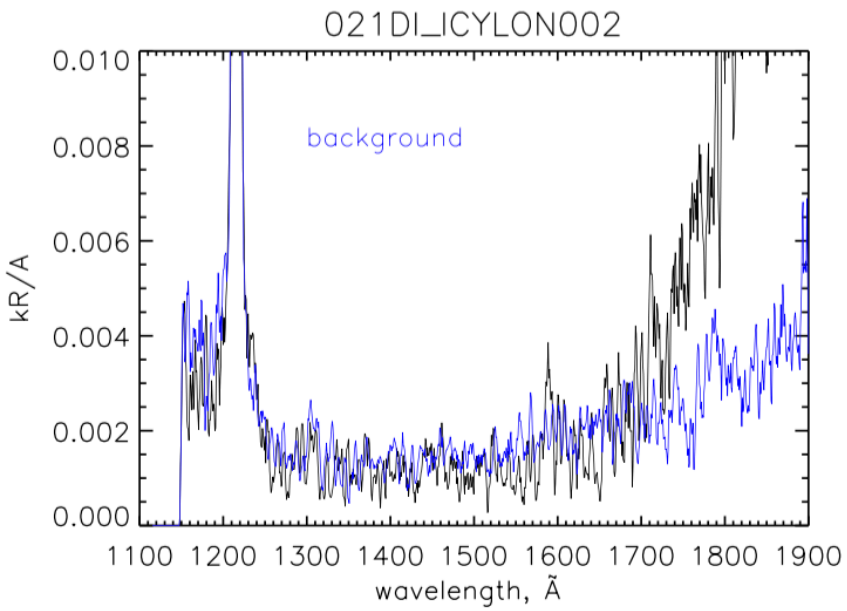
2006-052T16:29

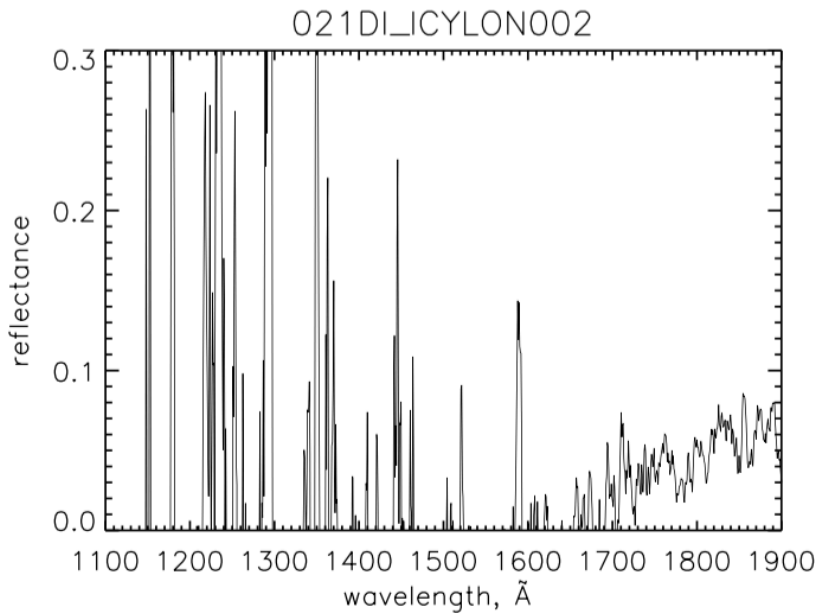
Alt= 1,924,986 km

Longitude= 94°W

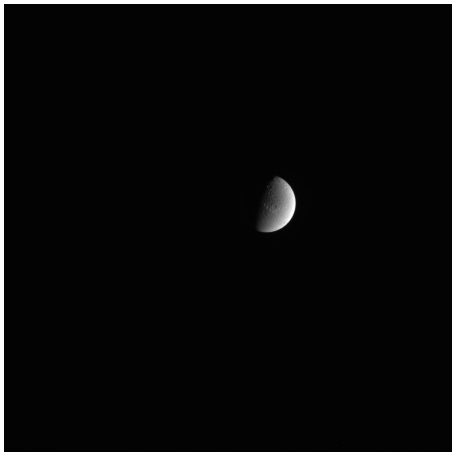
Latitude=0.27°S

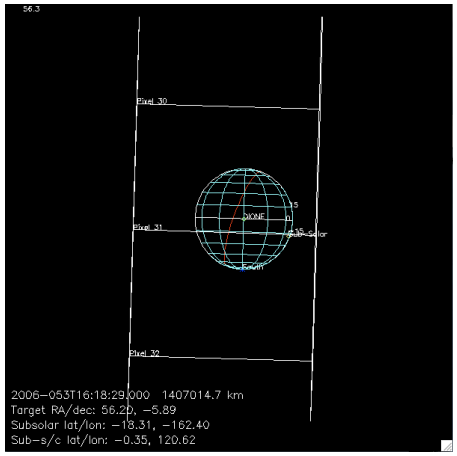
Phase= 63.7°





021DI_238W078PH001_ISS





021DI_ICYLON003_ISS

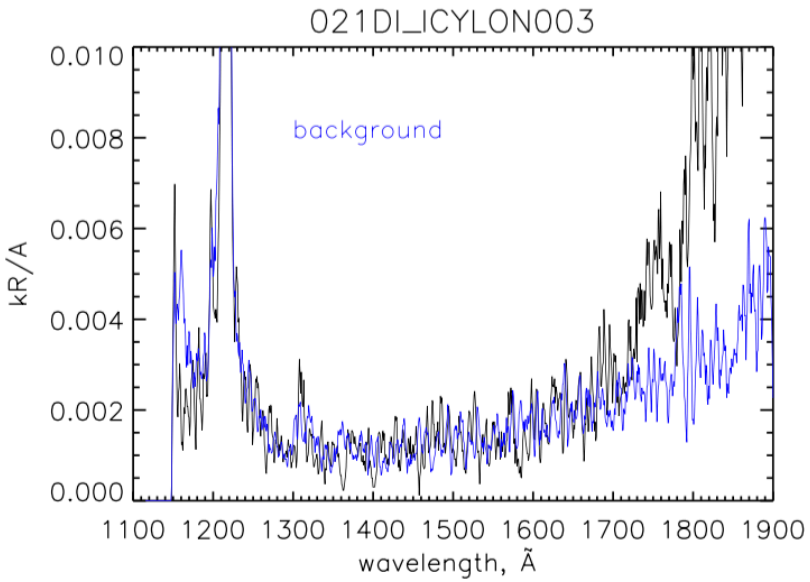
2006-053T16:19

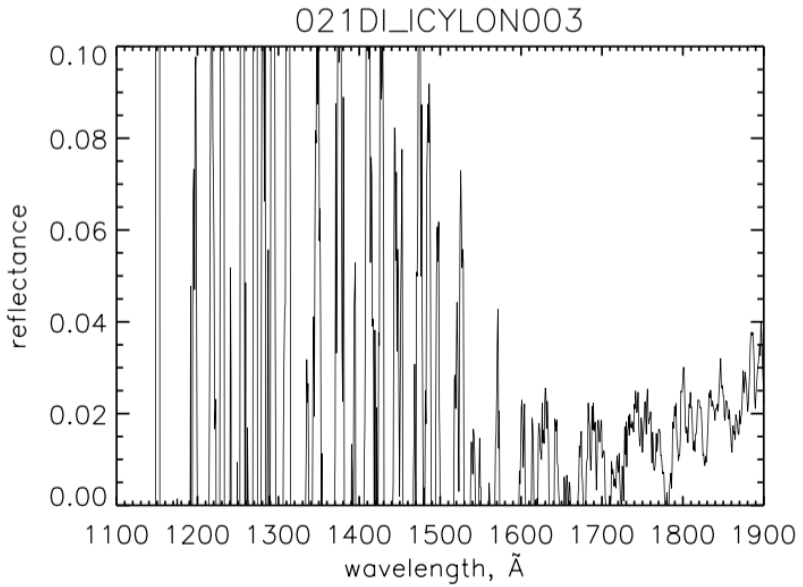
Alt= 1,407,760 km

Longitude= 240°W

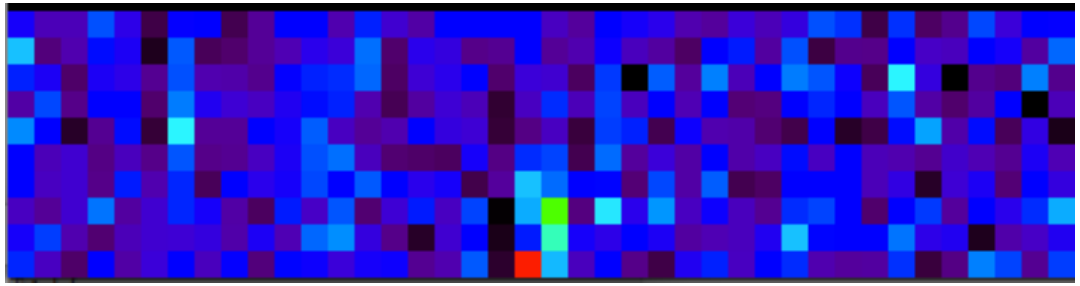
Latitude=0.35°S

Phase= 78°





021DI_022W152PH001_ISS

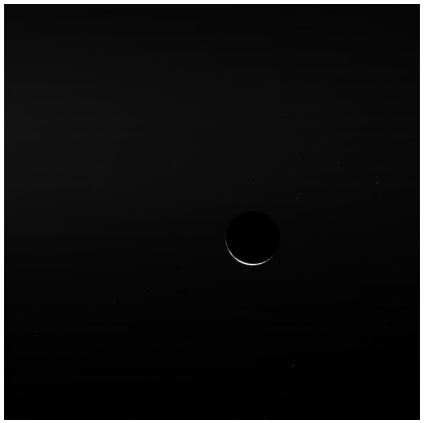


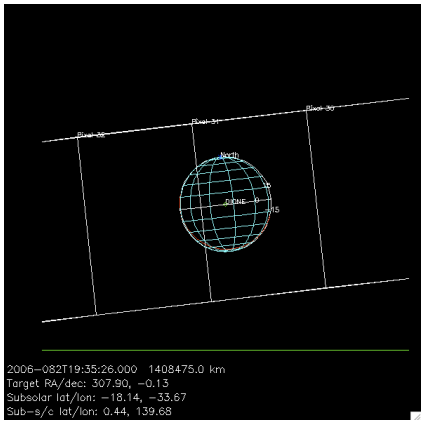
Dione + rings

021DI_ICYLON004_ISS
2006-062T12:51
Alt= 2,795,139 km
Longitude= 22°W
Latitude=0.12°N
Phase= 132.0°

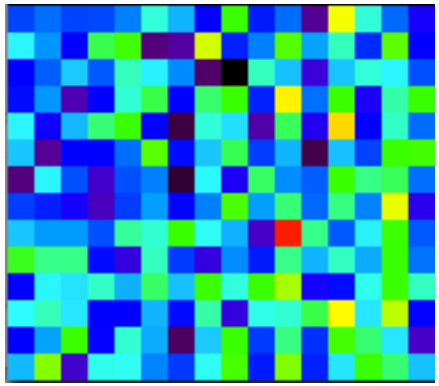
Dione is in rows with rings for first few records; very low SNR with just Dione for last few records

022DI_238W161PH001_ISS



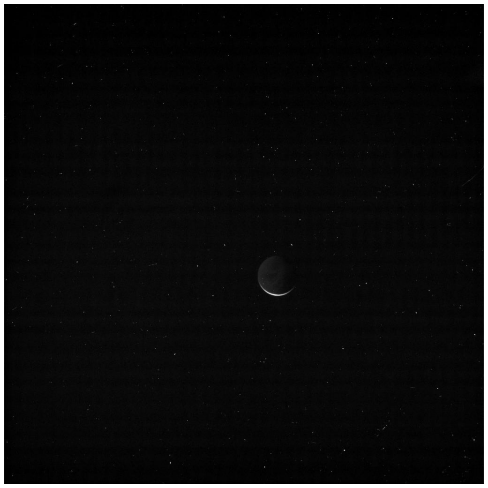


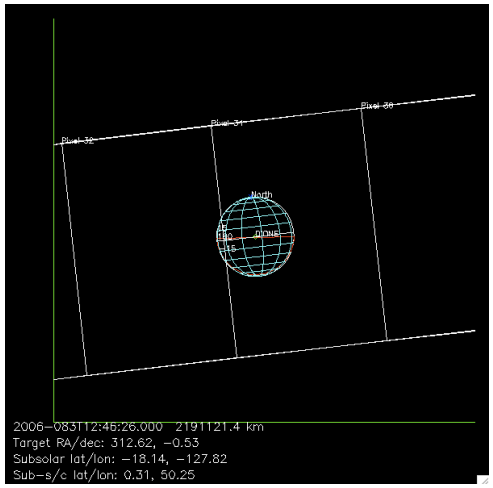
022DI_ICYLON001_ISS
2006-082T19:36
Alt= 1,416,138 km
Longitude= 222°W
Latitude=0.44°N
Phase= 161.1°



Low SNR

022DI_310W162PH001_ISS





022DI_ICYLON002_ISS

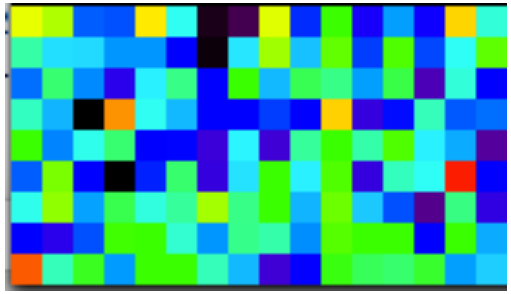
2006-083T12:40

Alt= 2,195,935 km

Longitude= 310°W

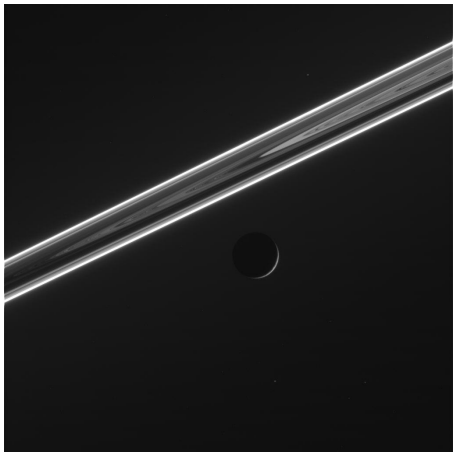
Latitude=0.31°N

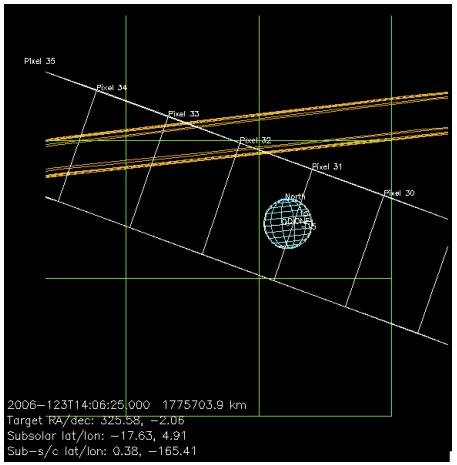
Phase= 162.1°



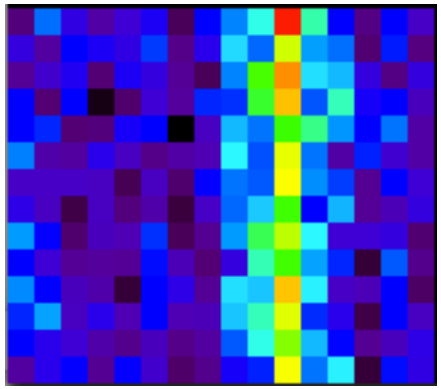
Low SNR

023DI_166W160PH001_ISS



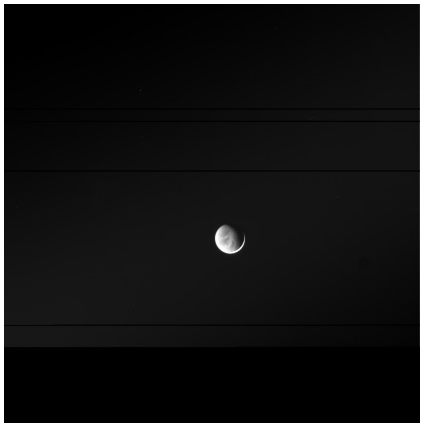


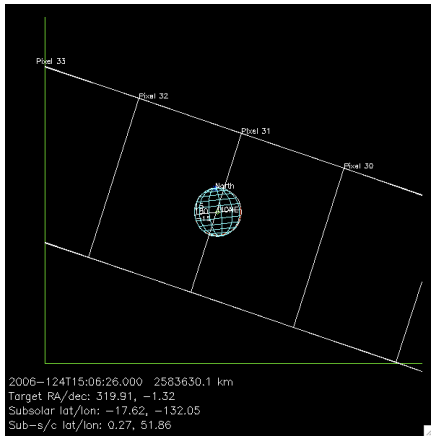
023DI_ICYLON070_ISS
2006-123T14:07
Alt= 1,775,203 km
Longitude= 166°W
Latitude
Phase= 160.4°

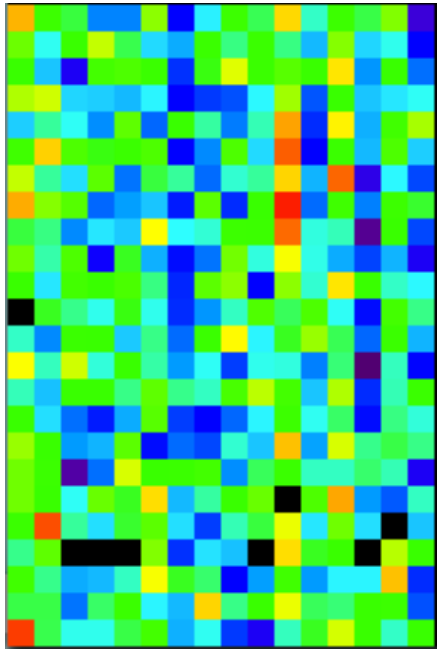


Rings in rows with Dione

023DI_310W162PH001_ISS



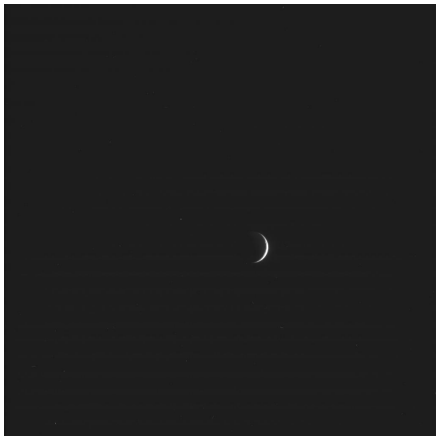


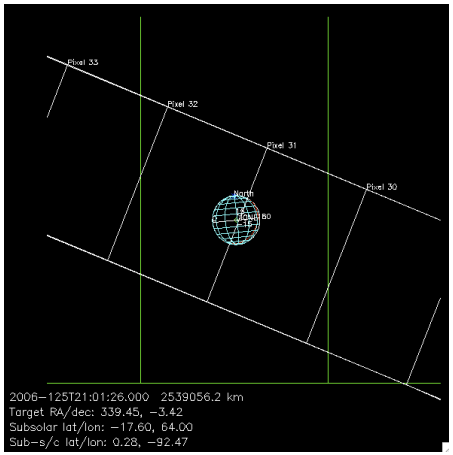


023DI_ICYLON073_ISS
2006-124T15:07
Alt= 2,596,556 km
Longitude= 309°W
Latitude=0.27°N
Phase= 162.2°

Low SNR

023DI_094W151PH001_ISS





023DI_ICYLON075_ISS

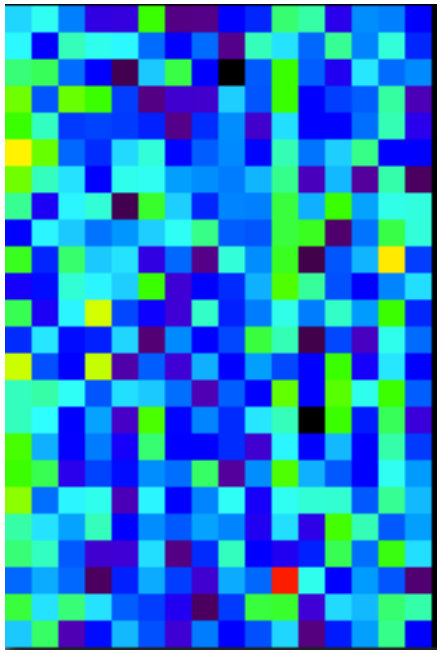
2006-125T21:02

Alt= 2,527,325 km

Longitude= 94.5°W

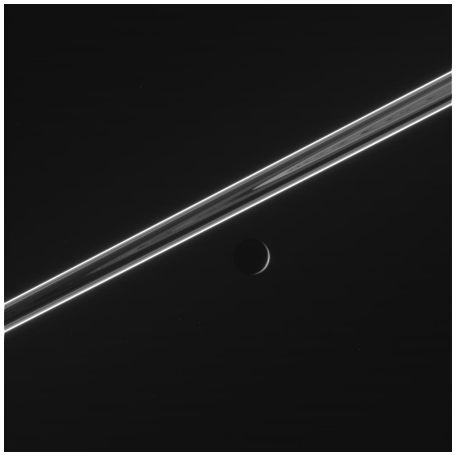
Latitude=0.28°N

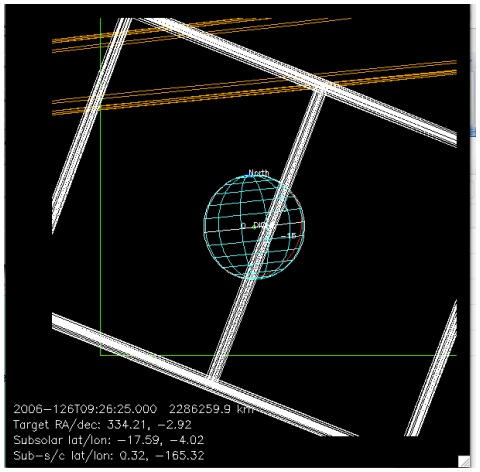
Phase= 151.1°

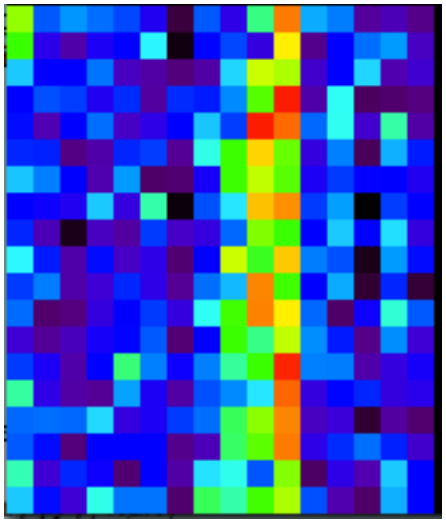


Low SNR

023DI_166W155PH001_ISS



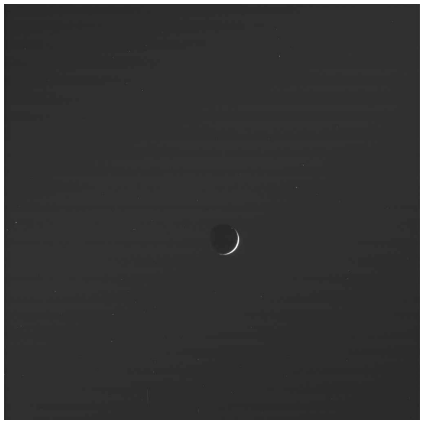


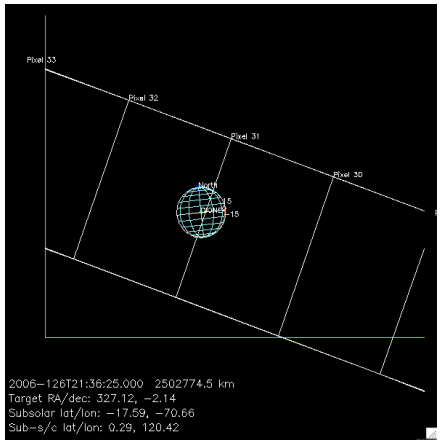


023DI_ICYLON076_ISS
2006-126T09:27
Alt= 2,284,812 km
Longitude= 167°W
Latitude=0.32°N
Phase= 154.9°

Rings in rows with Dione

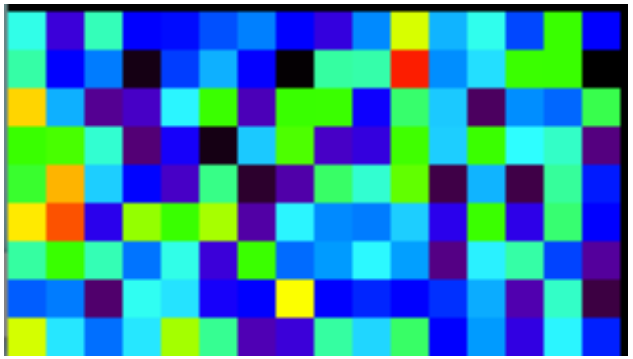
023DI_238W160PH001_ISS





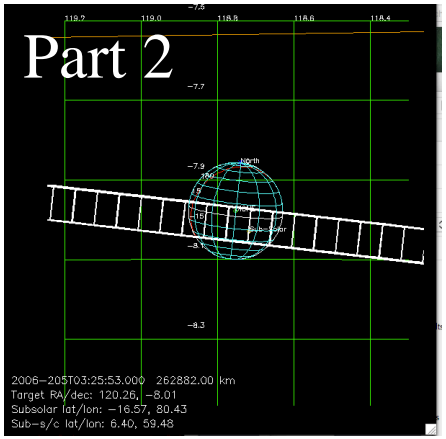
023DI_ICYLON077_ISS

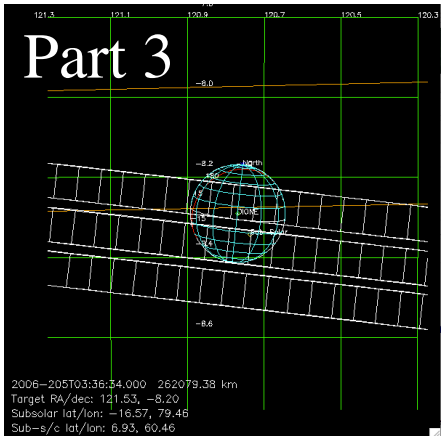
2006-126T21:37
Alt= 2,506,925 km
Longitude= 240°W
Latitude=0.29°N
Phase= 159.6°



Low SNR

026DI_GLOCOL001_ISS

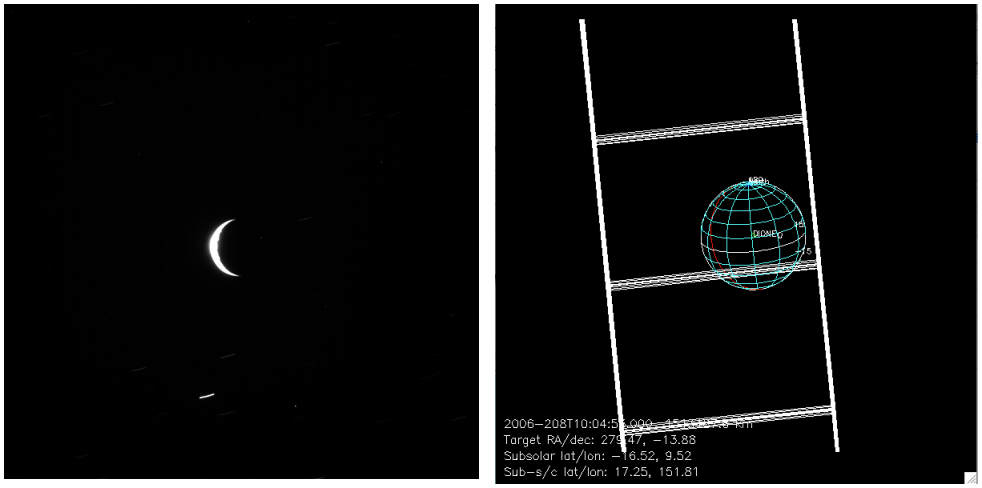




026DI_GLOCOL001_ISS
2006-205T03:23
Alt= 262,001 km
Longitude= 300°W
Latitude=6.6°N
Phase= 30.6°

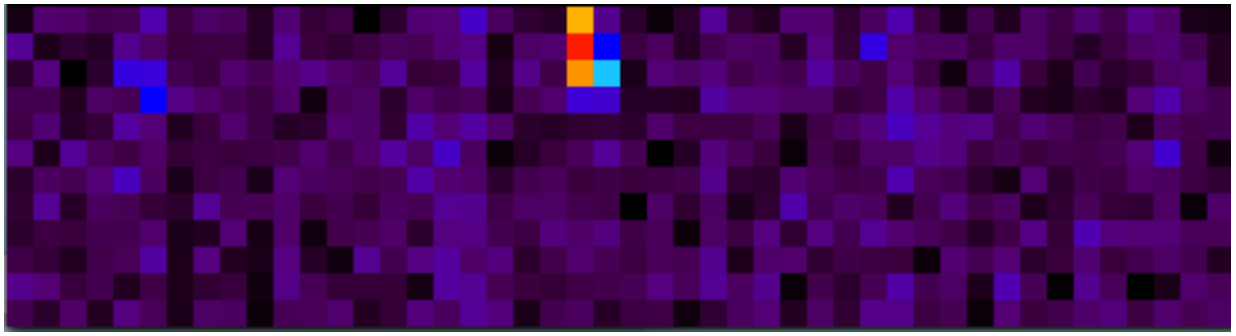
Part 2

026MI_PHOTOM007_ISS

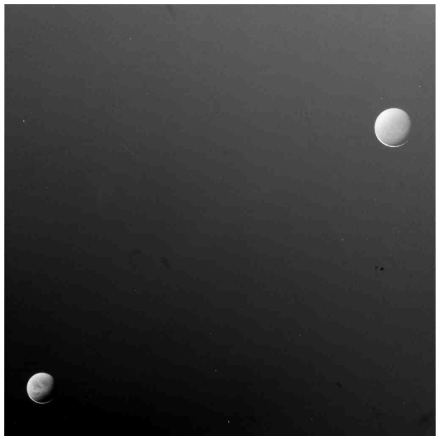


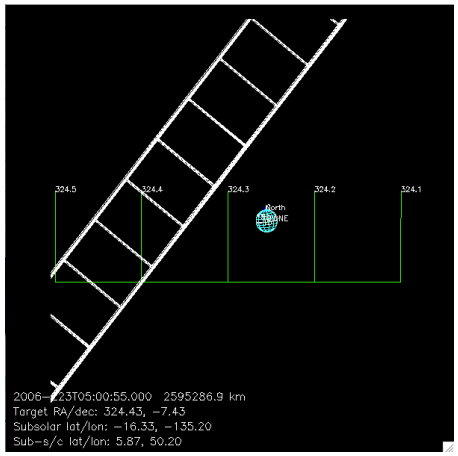
026MI_ICYLON001_ISS
2006-208T10:05
Alt= 1,518,119 km
Longitude= 209°W
Latitude=17°N
Phase= 143.9°

first part is Dione – but a star in the slit dominates the signal
Low SNR from Dione itself



026DI_310W168PH001_ISS





027DI_ICYLON001_ISS
2006-223T05:01
Alt= 2,597,894 km
Longitude= 310°W
Phase= 168.2°

With Rhea

Dione not in UVIS slit…

027DI_REGGEODA001_ISS

7-panel mosaic

027DI_ICYLON002_ISS

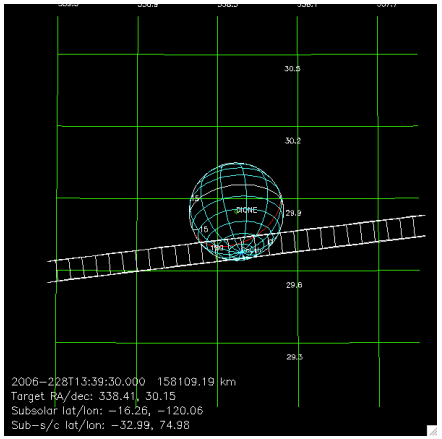
2006-228T13:40

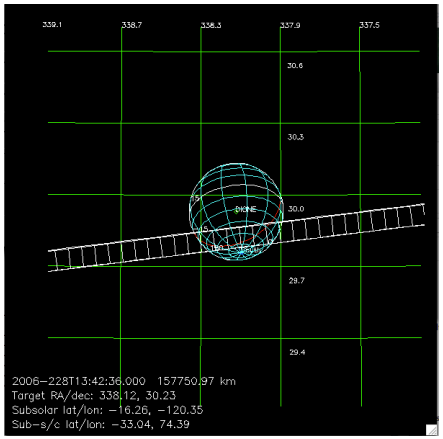
Alt= 157,909 km

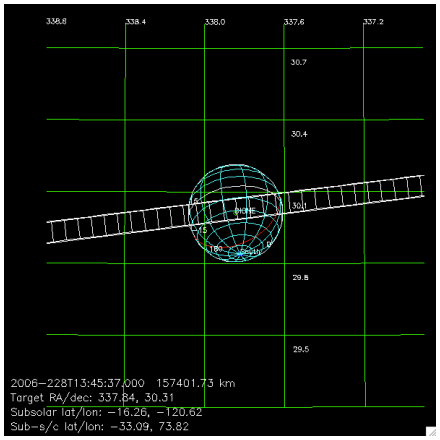
Longitude= 286°W

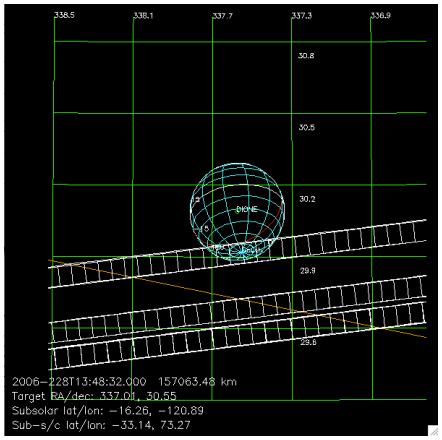
Latitude

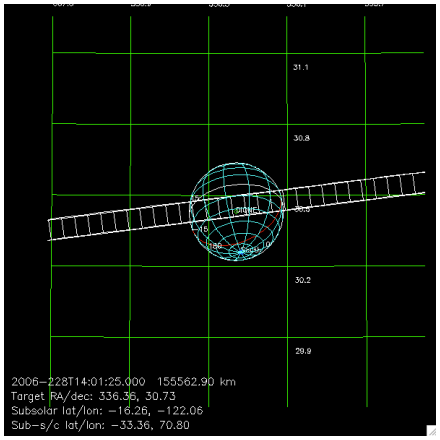
Phase= 129°

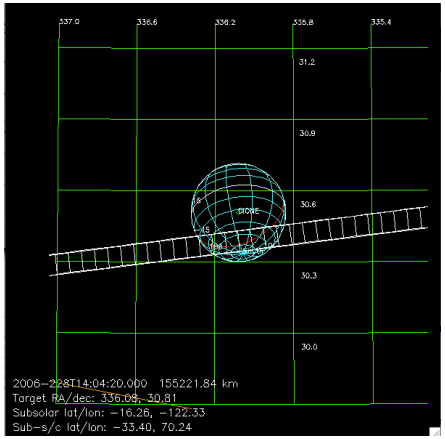


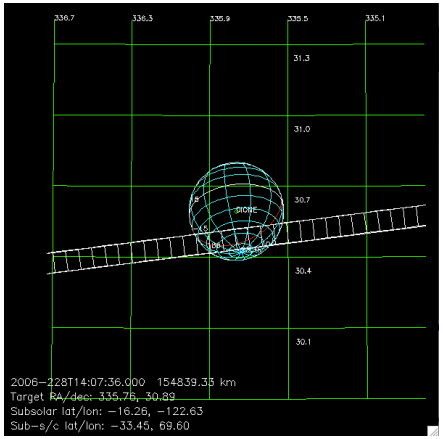


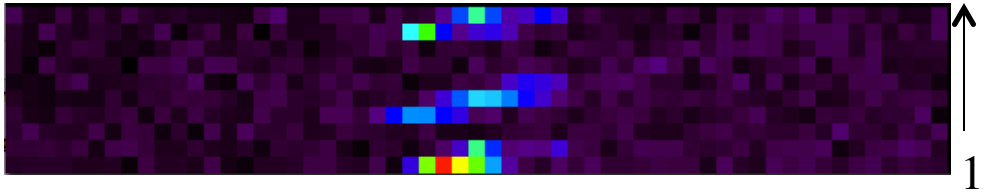


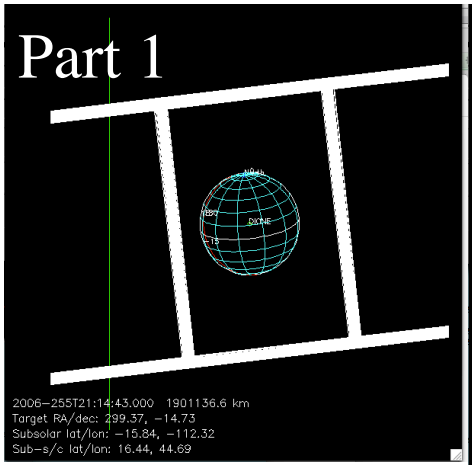


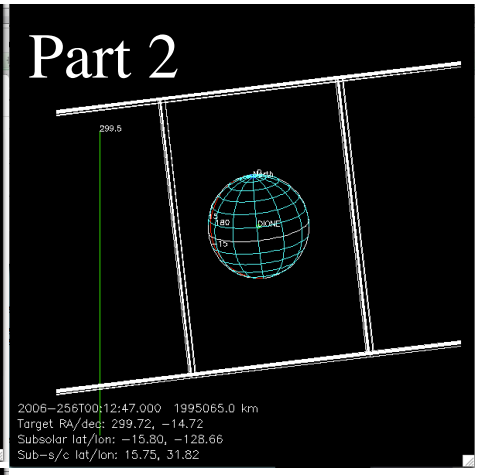


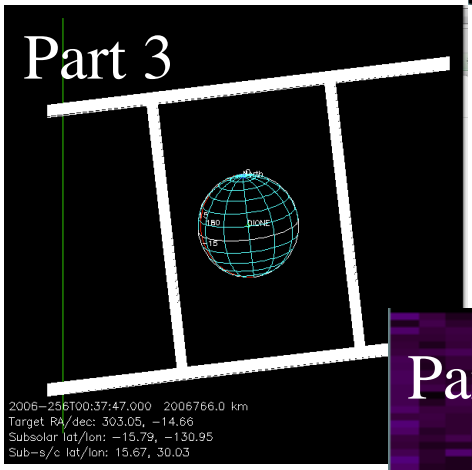


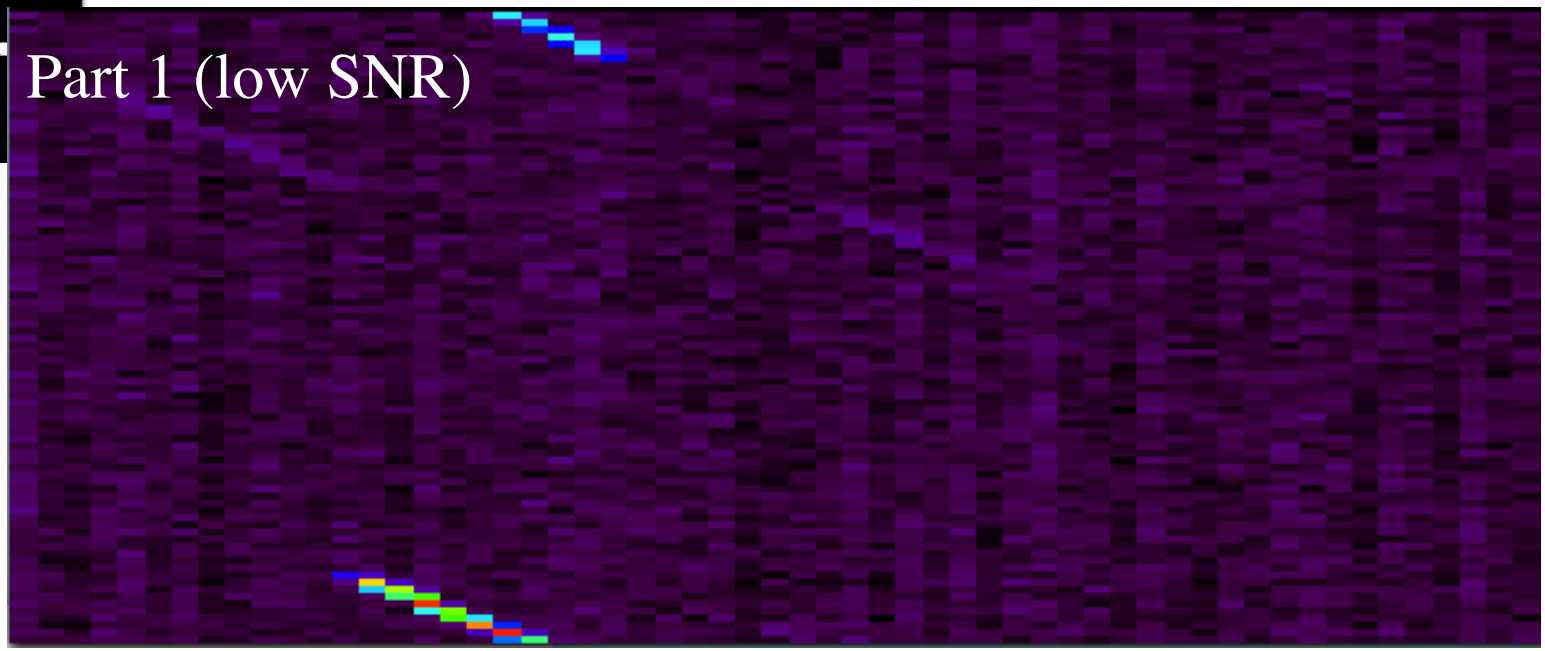




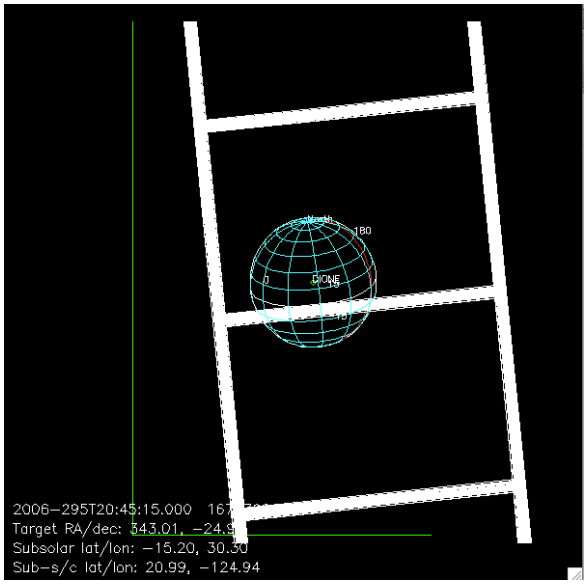






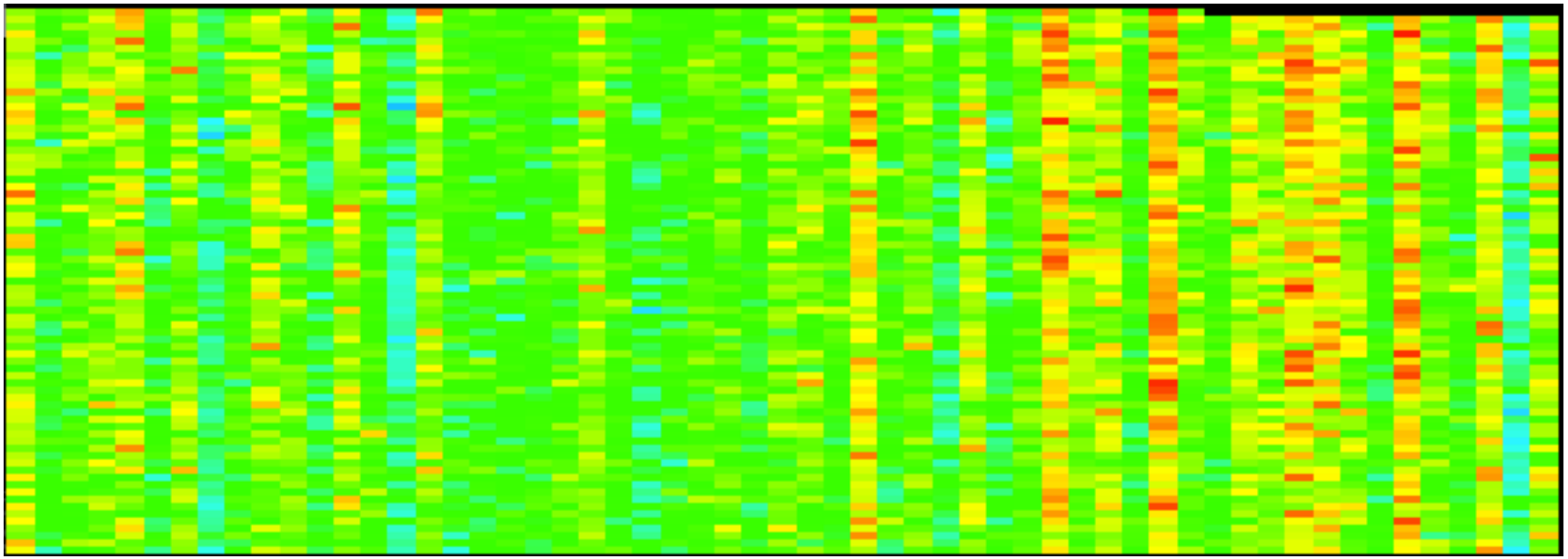


028DI_STARE001_PRIME
2006-255T21:15
Alt= 1,947,977 km
Longitude= 322°W
Latitude=16°N
Phase= 159.5°



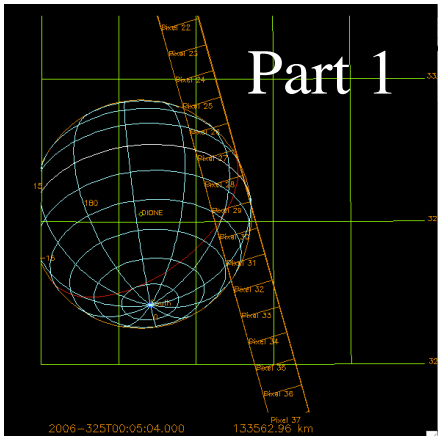
031DI_STARE002_PRIME
2006-295T19:19
Alt= 1,597,880 km
Longitude= 129°W
Latitude=20.6°N
Phase= 152.3°

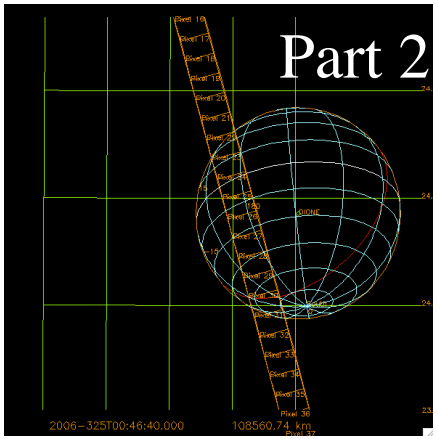
Low SNR

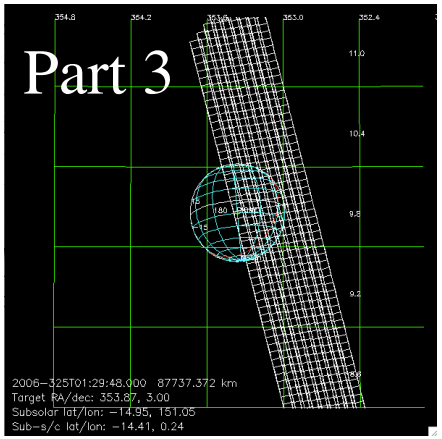


033DI_ICYLON001_VIMS
2006-325T00:05
Alt= 121,300 km
Longitude= 358°W
Latitude=33.5°S
Phase= 125.8°

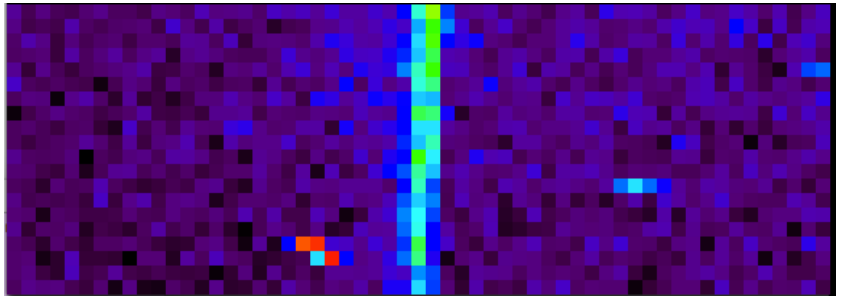
Note: Saturn shine



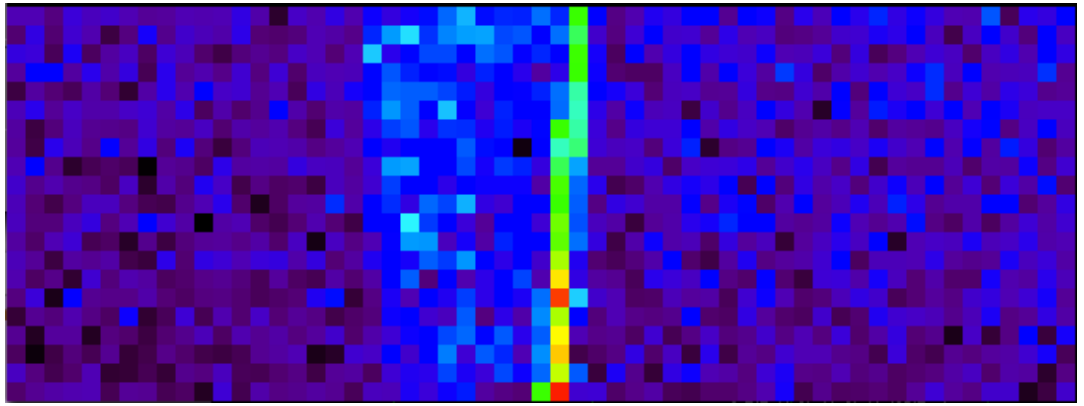


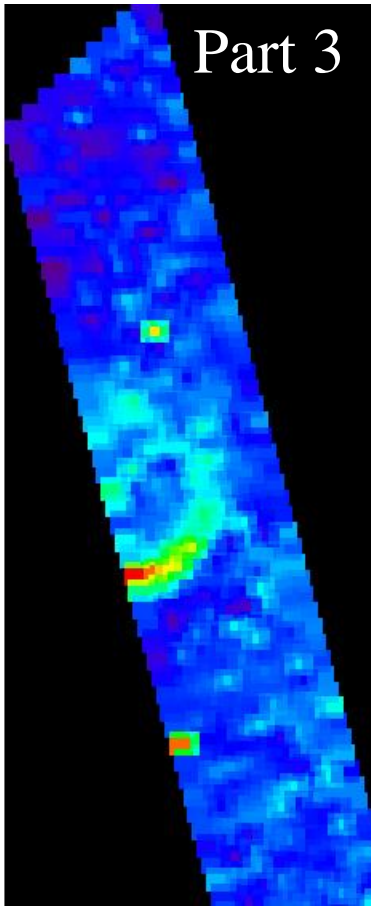


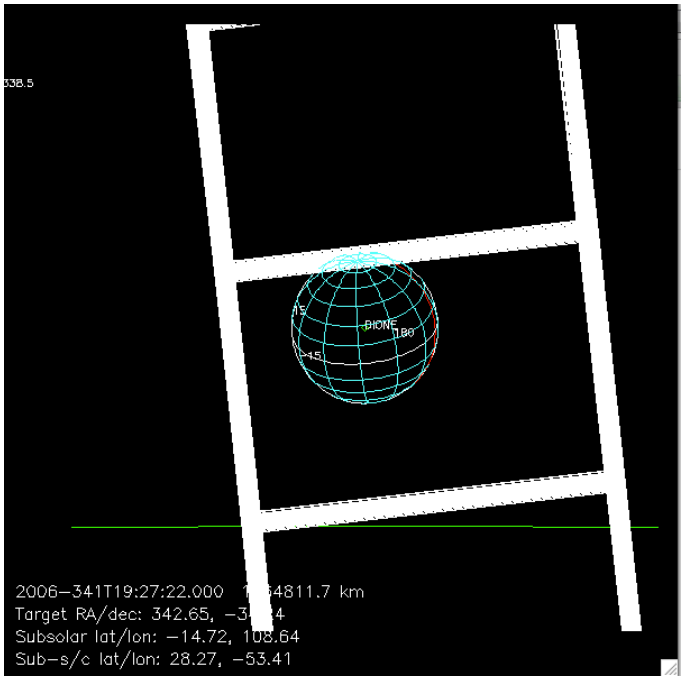
Part 1



Part 2

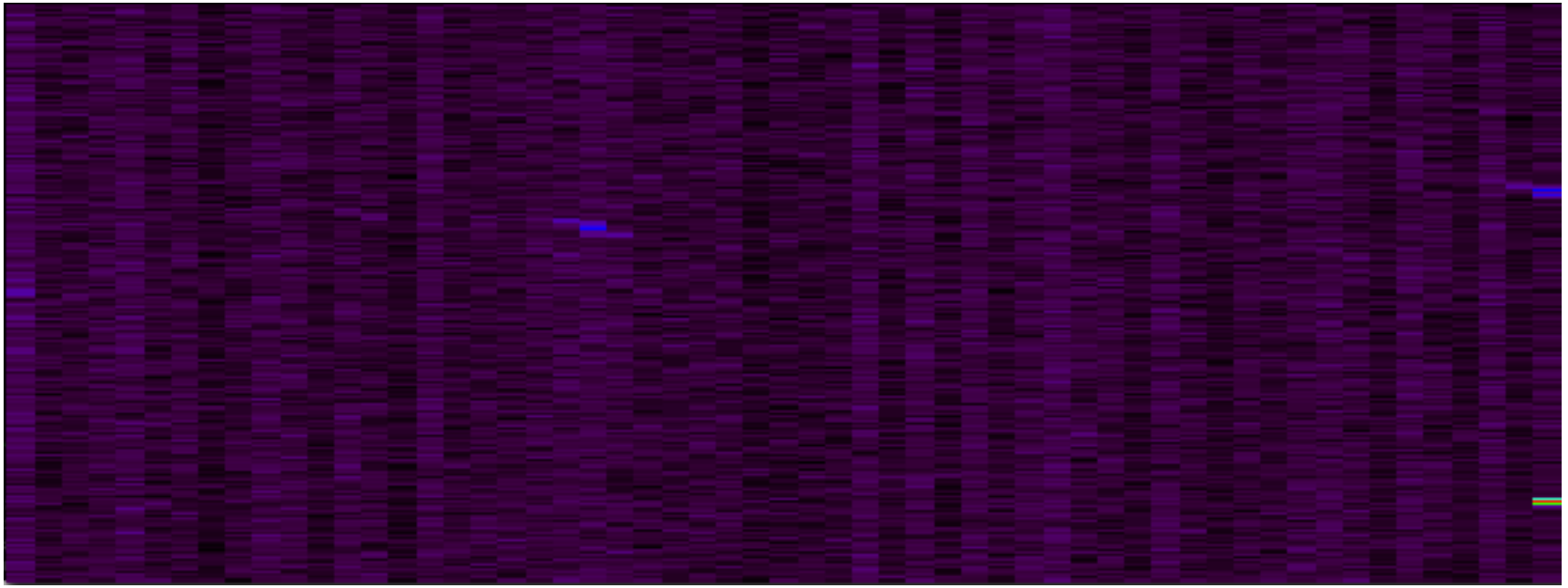






034DI_STARE004_PRIME
2006-341T17:32
Alt=1,768,112
Longitude=72°W
Latitude=29.3°N
Phase=156°

Low SNR



VIMS_035DI_DIONE002_PRIME

035DI_ICYLON001_VIMS

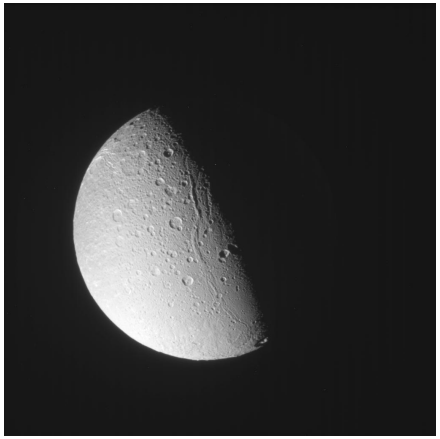
2006-349T15:25

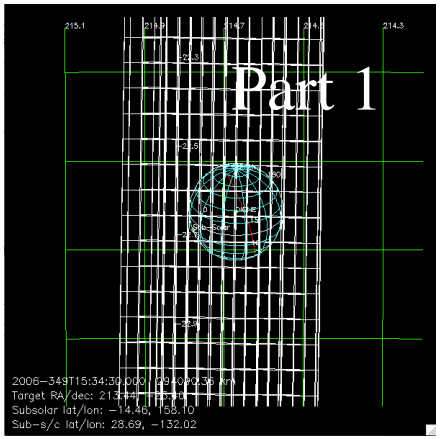
Alt= 294,987 km

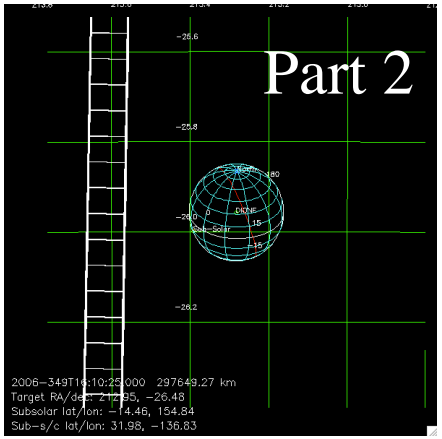
Longitude= 134°W

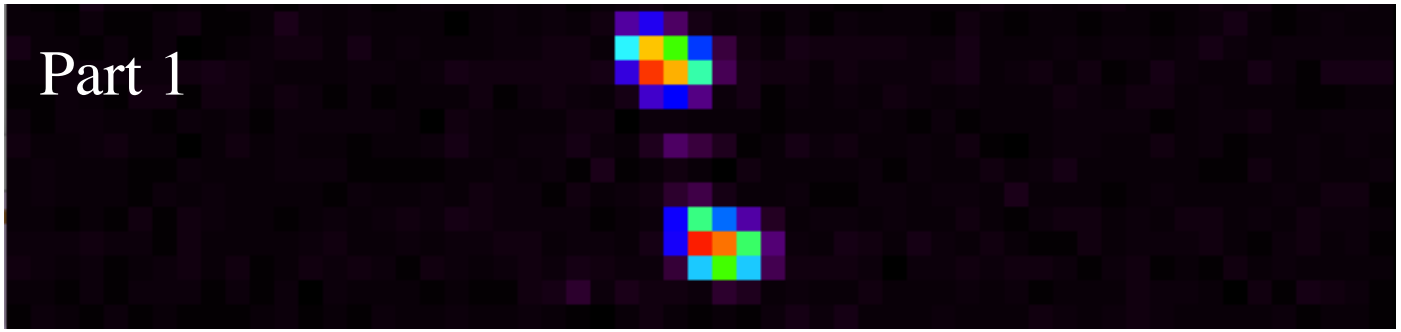
Latitude=30°N

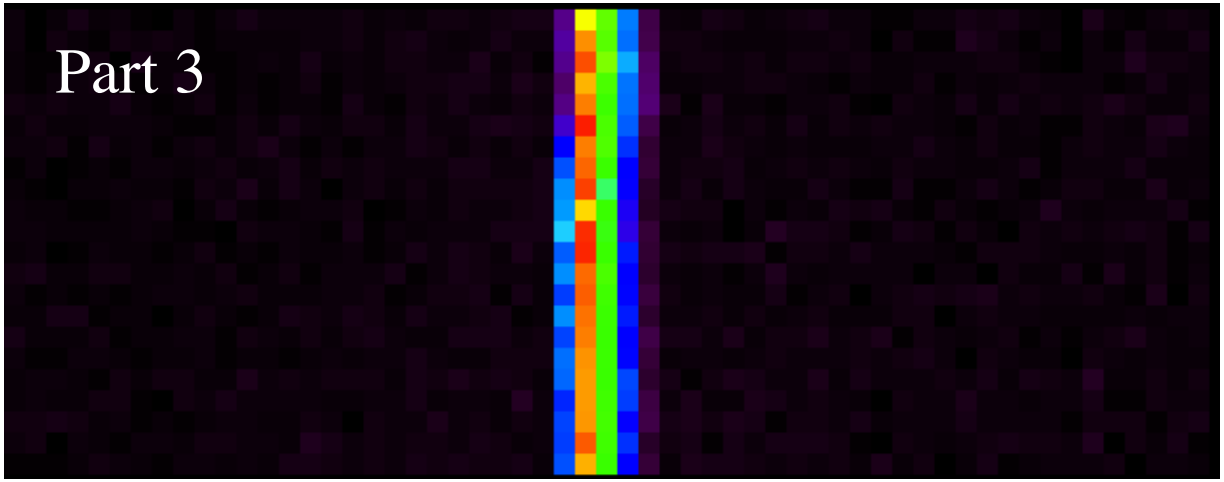
Phase= 80.7°



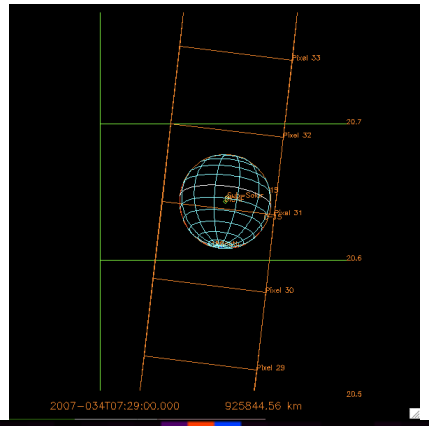


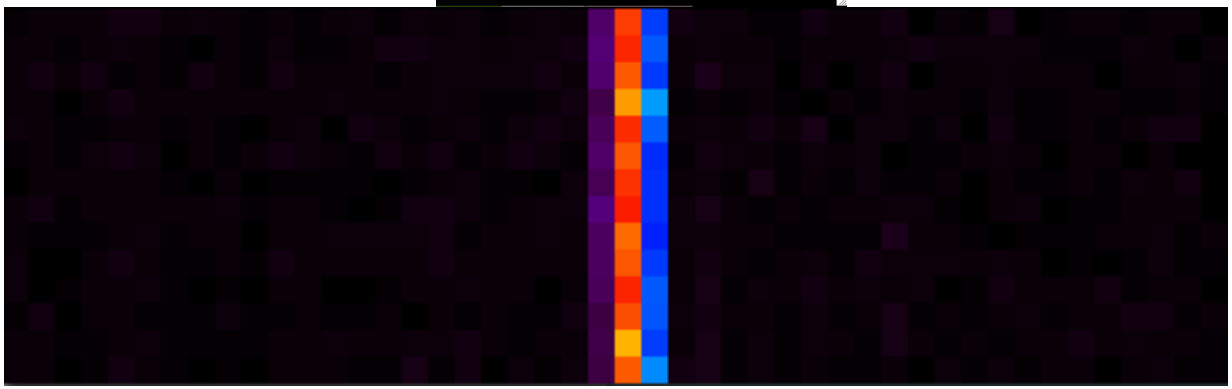






ISS_038DI_LOWPHASEA001





038DI_ICYLON001_ISS

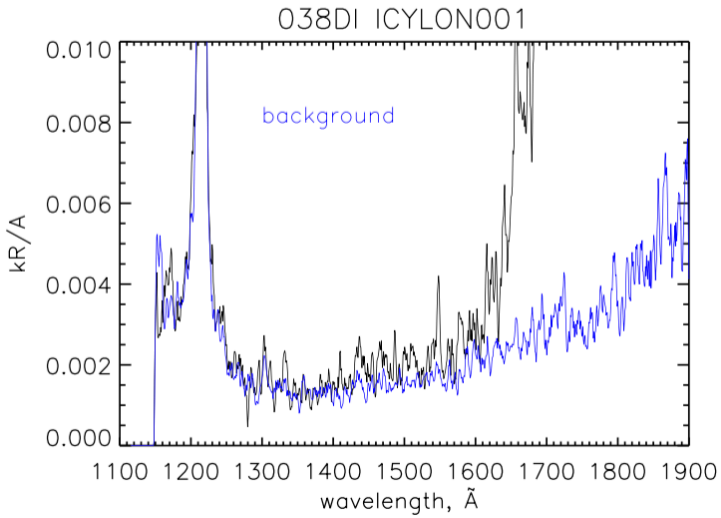
2007-034T07:30

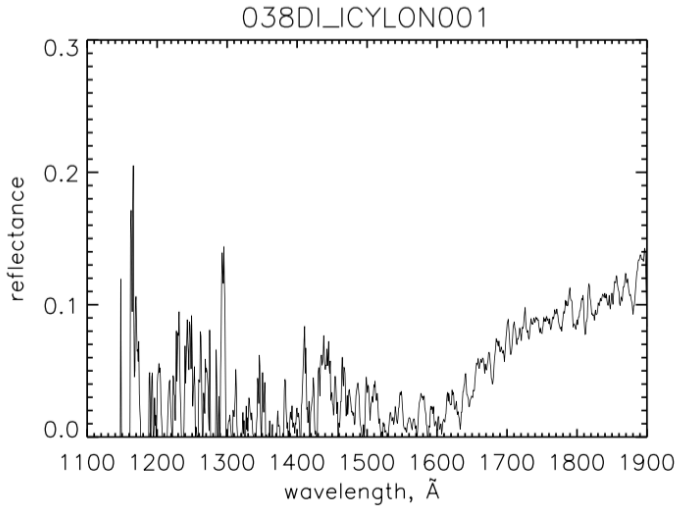
Alt= 932,381 km

Longitude= 256°W

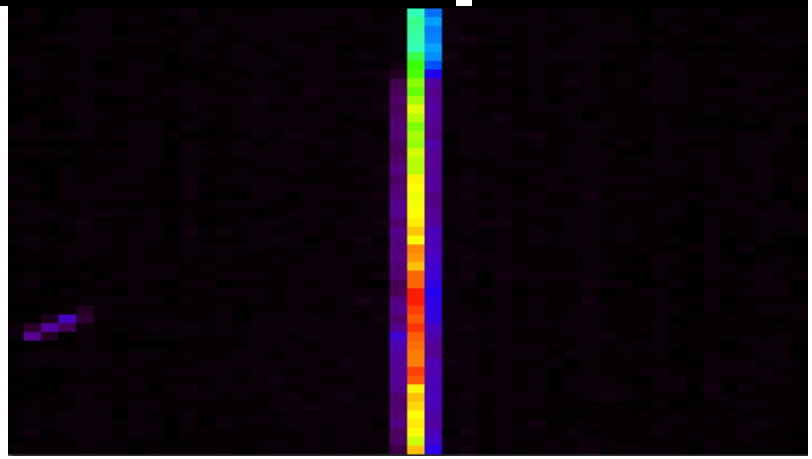
Latitude=19°S

Phase= 5.45°





ISS_038DI_ZEROPHASE001



038DI_ICYLON002_ISS

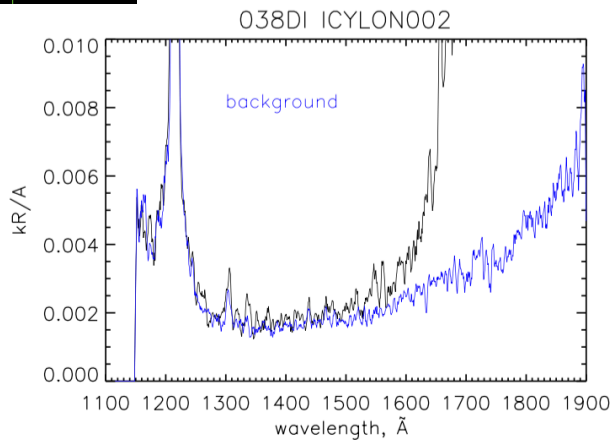
2007-034T10:20

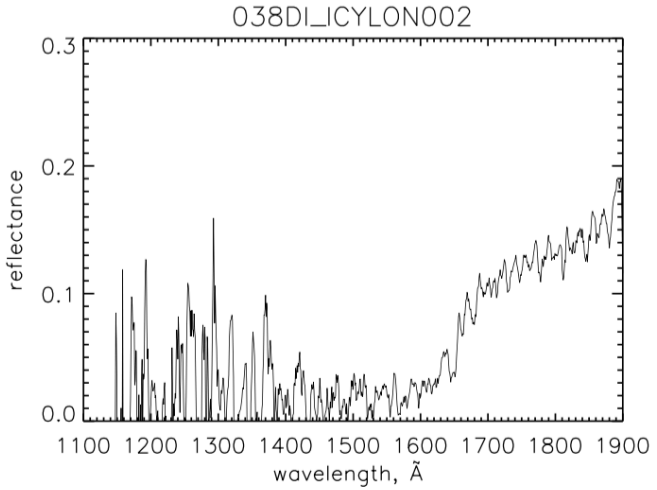
Alt= 1,051,682 km

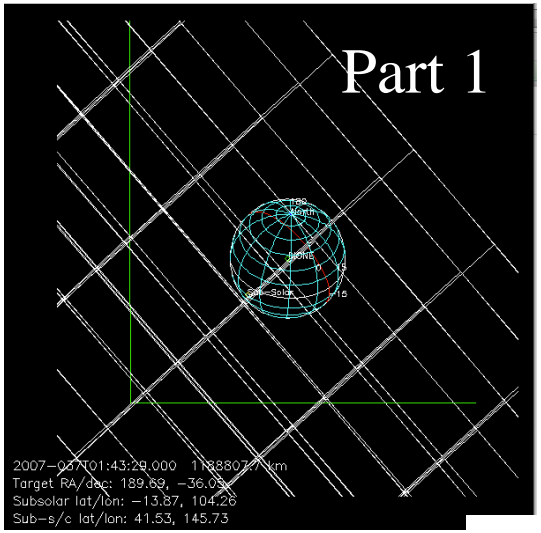
Longitude= 273°W

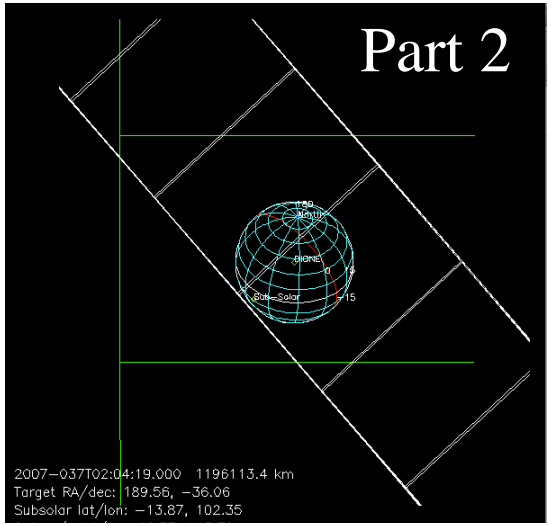
Latitude=13.5°S

Phase= 0.803°

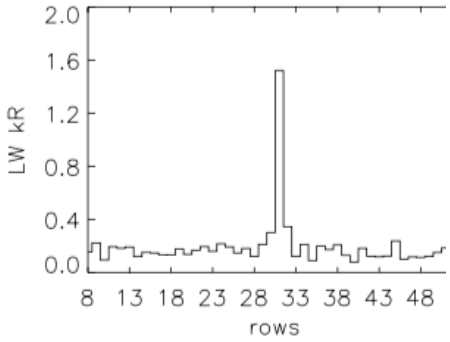


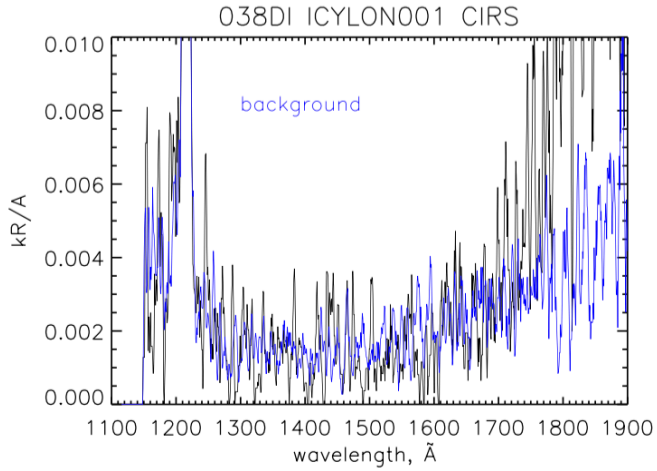


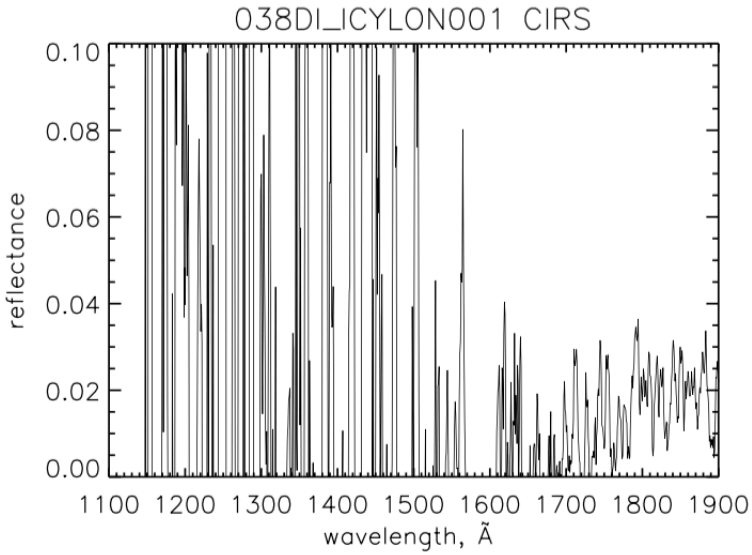




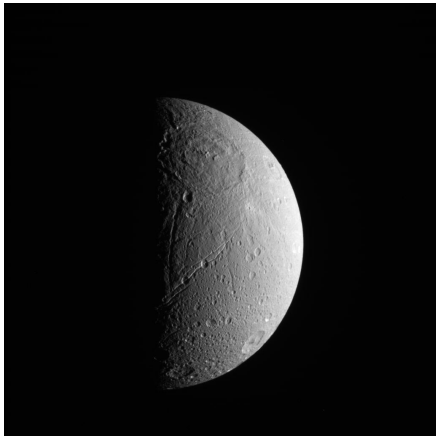
038DI_ICYLON001_CIRS
2007-037T01:44
Alt= 1,195,911 km
Longitude= 217°W
Latitude=41.5°N
Phase= 67.1°

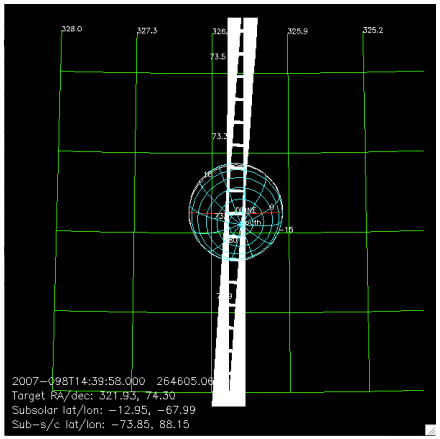


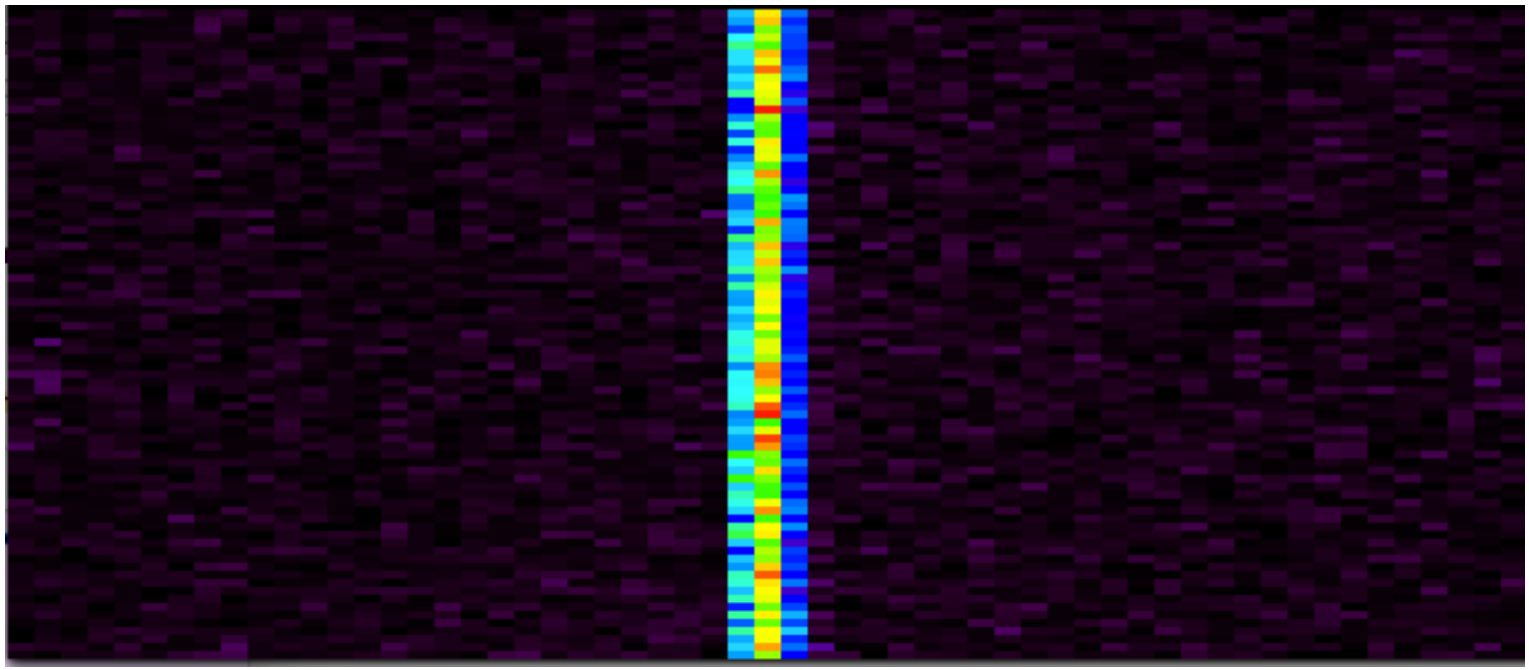




042DI_ICYMAP001_VIMS
2007-098T14:40
Alt= 271,354 km
Longitude= 277°W
Latitude=74°S
Phase= 91.3°







4-panel mosaic

043DI_ICYLON001_ISS

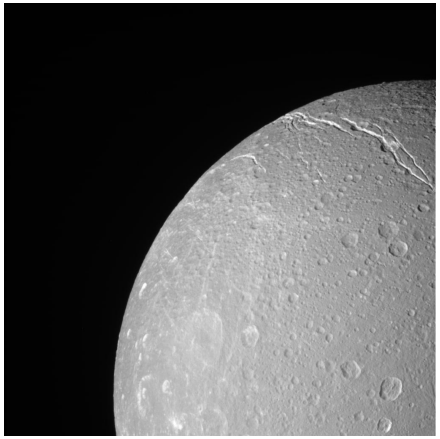
2007-114T15:53

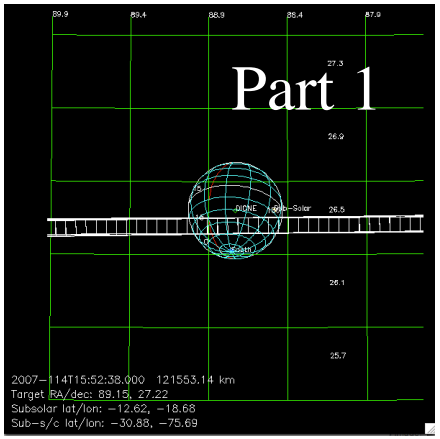
Alt= 121,210 km

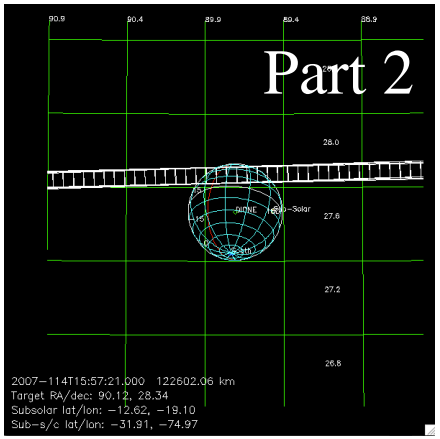
Longitude= 75°W

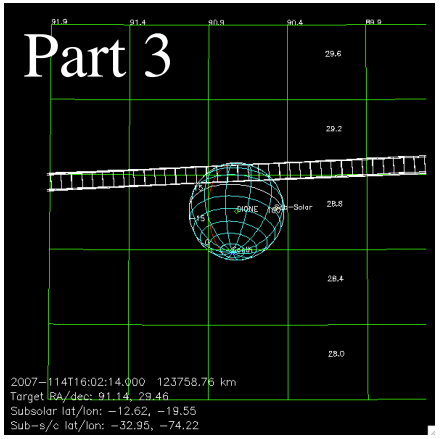
Latitude=31°S

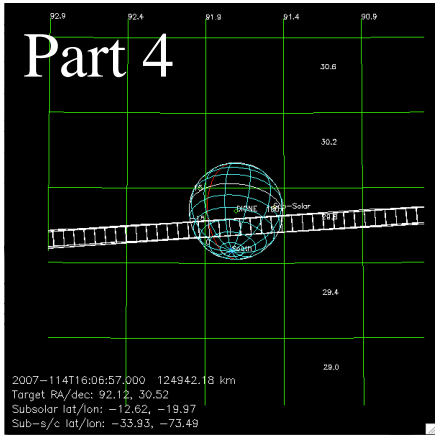
Phase= 55.1°

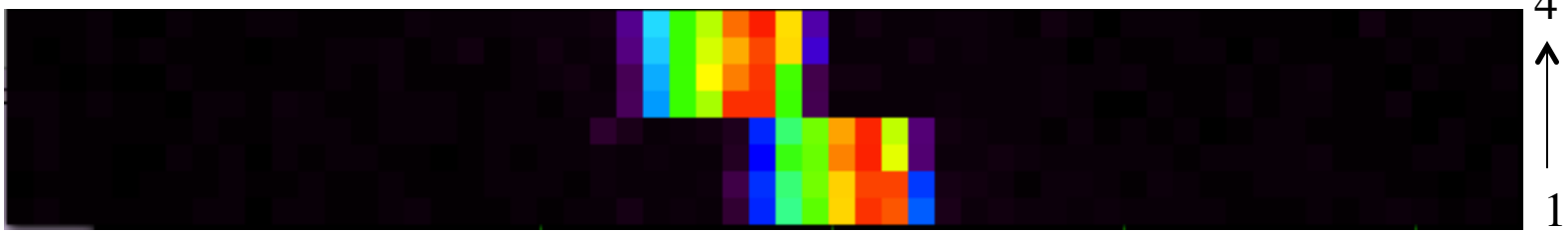




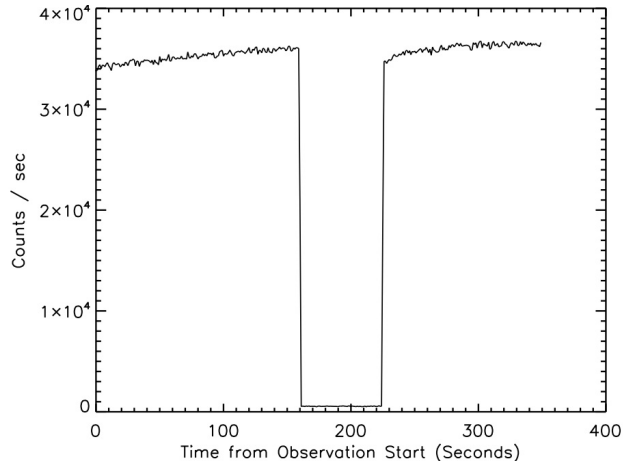




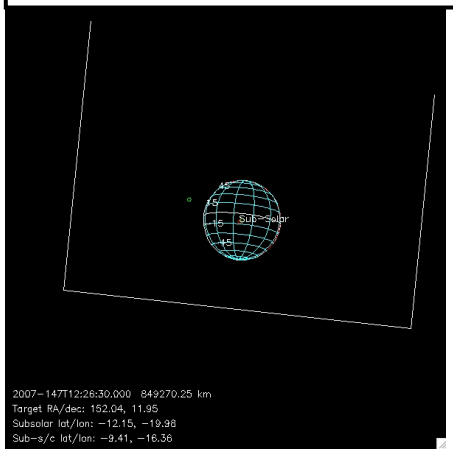




HSP profil

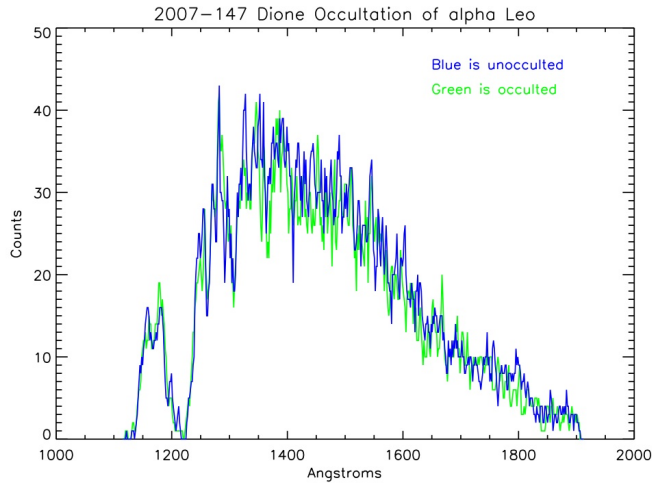


UVIS_045DI_ICYOCC096_PRIME
2007-147T12:24
Ingress lat/lon: 24.8 / 102.1
Egress lat/lon: 61.9 / 294.5
Star: Alpha Leo

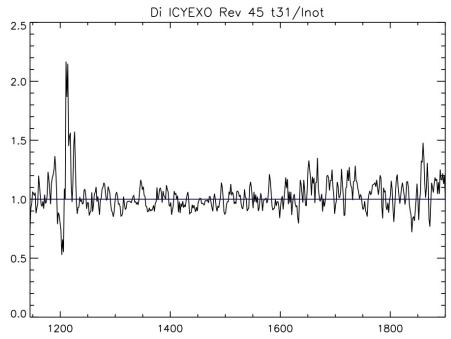


Ingress

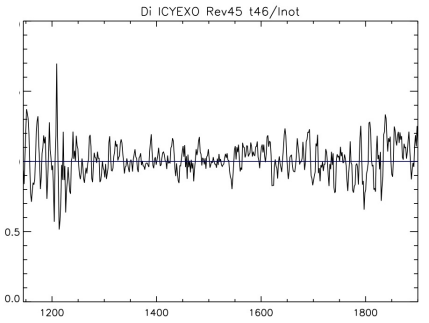
Spectra of I, I_0 (counts per integration period vs wavelength)



Spectrum of I/I_0

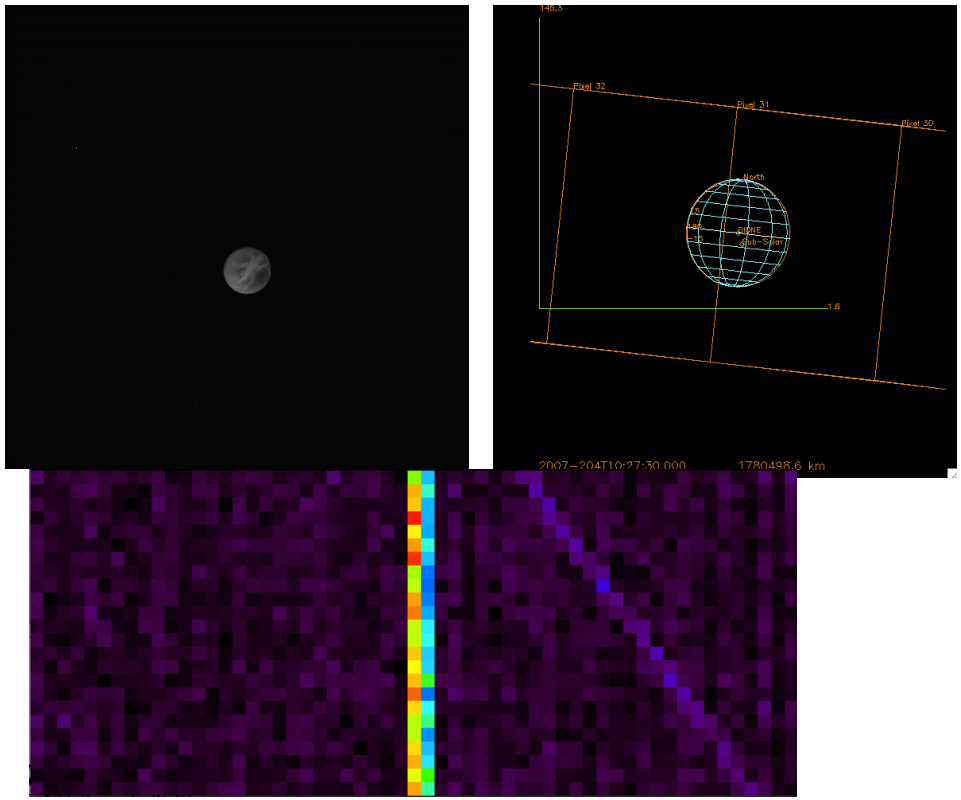


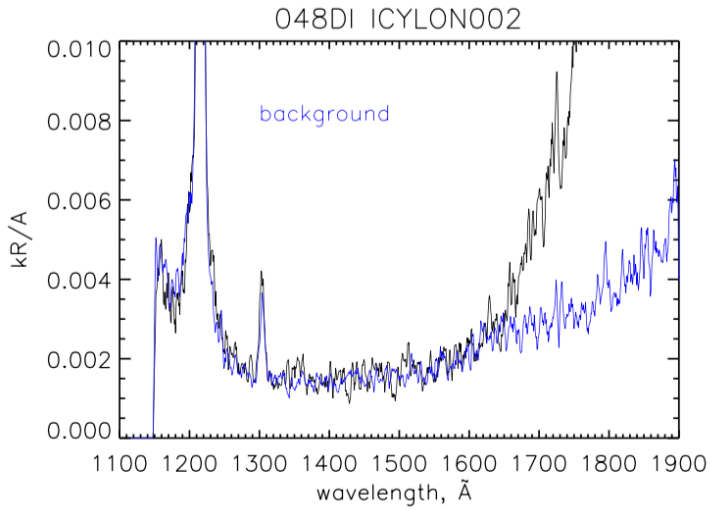
Ingress



Egress

ISS_048DI_310W013PH001_PRIME





048DI_ICYLON002_ISS

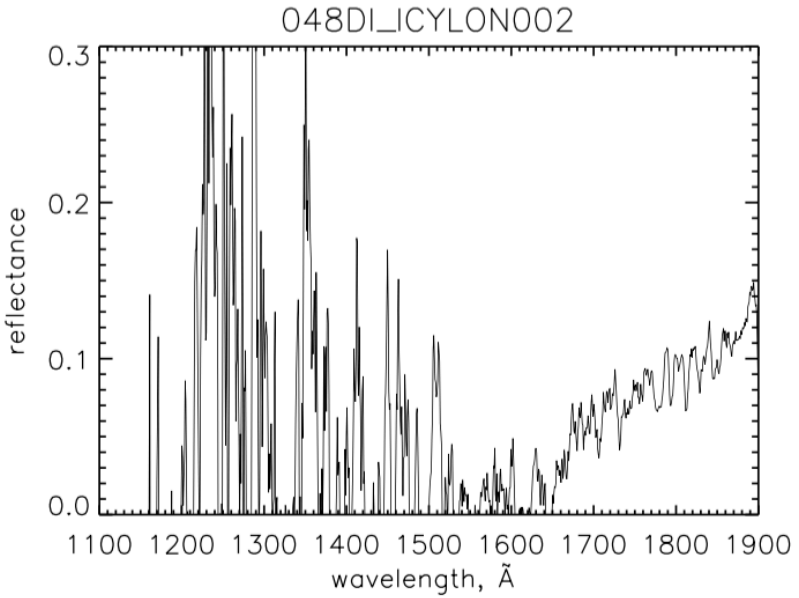
2007-204T10:28

Alt= 1,795,959 km

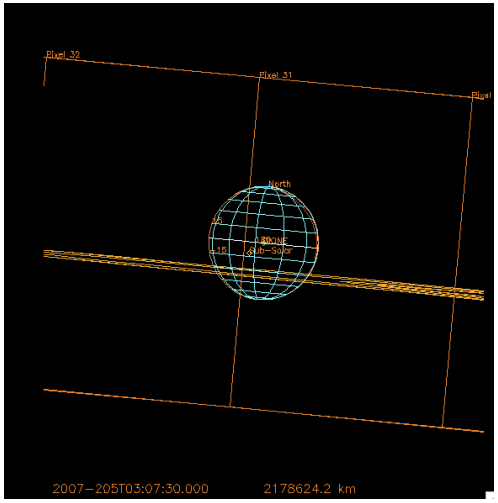
Longitude= 312°W

Latitude=0°N

Phase= 12.74°



ISS_048DI_022W019PH101_PRIME



048DI_ICYLON003_ISS

2007-205T03:07

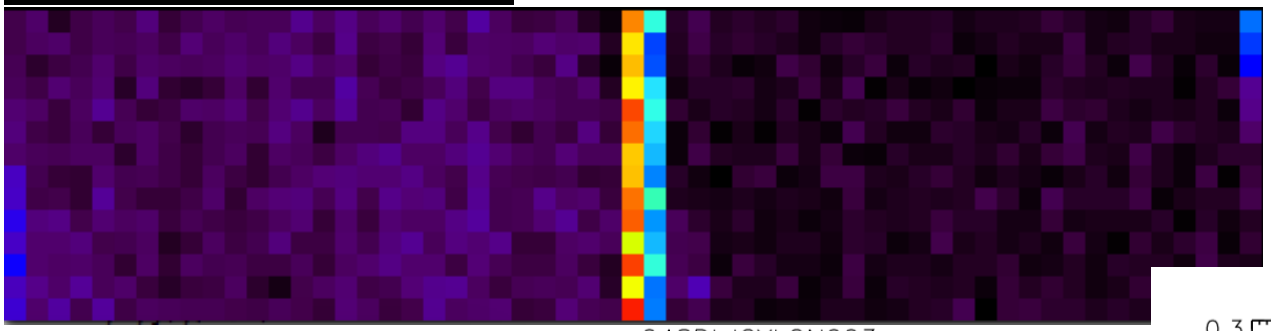
Alt= 2,178,562 km

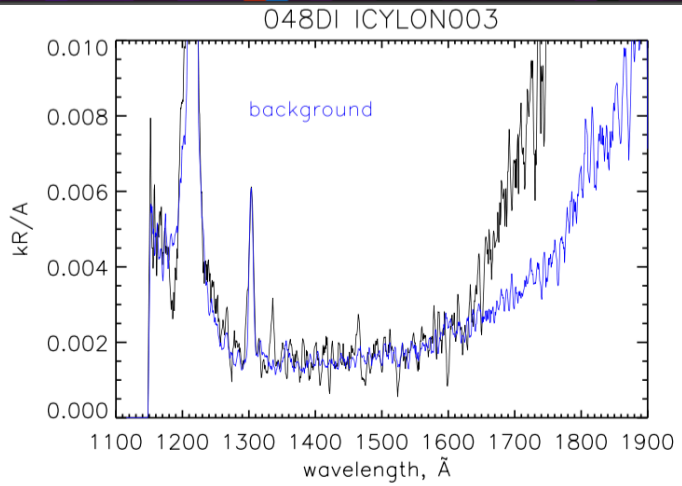
Longitude= 22°W

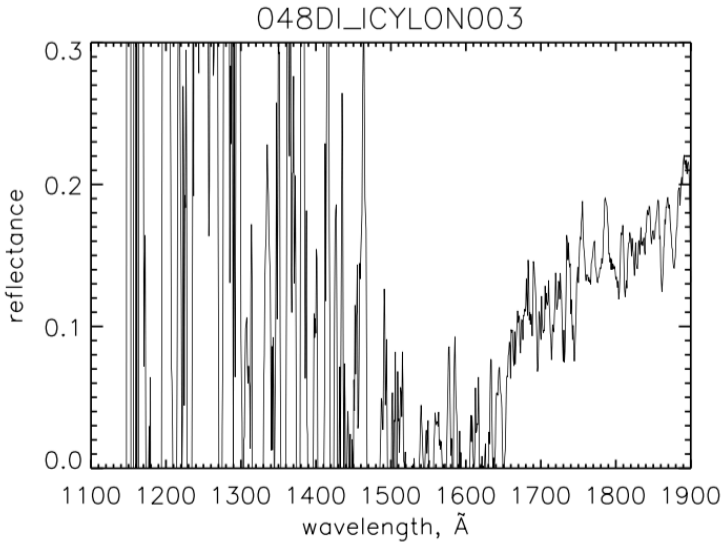
Latitude=0.04°N

Phase= 18.5°

Rings are in slit but unlit…







ISS_050DI_REGMAPD001_PRIME

050DI_ICYLON001_ISS

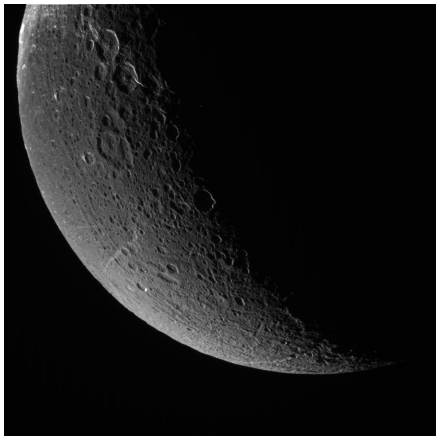
2007-272T23:32

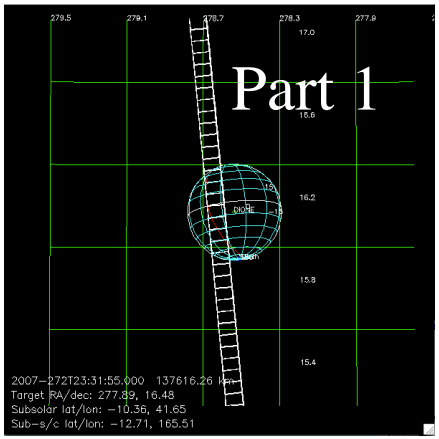
Alt= 135,176 km

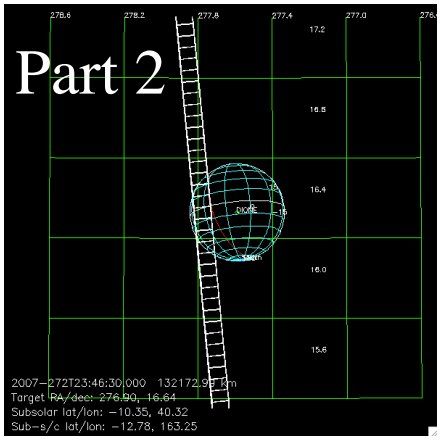
Longitude= 195°W

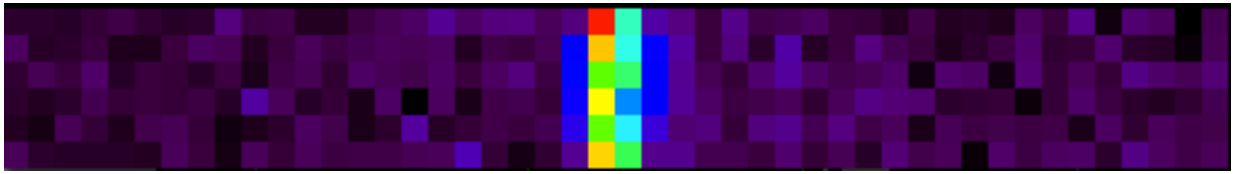
Latitude=12.7°S

Phase= 118.9°

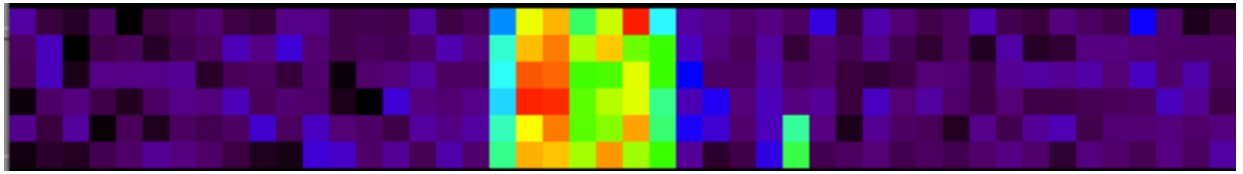








Part 1



Part 2

ISS_050DI_REGMAPE001_PRIME 7-panel mosaic 050DI_ICYLON002_ISS

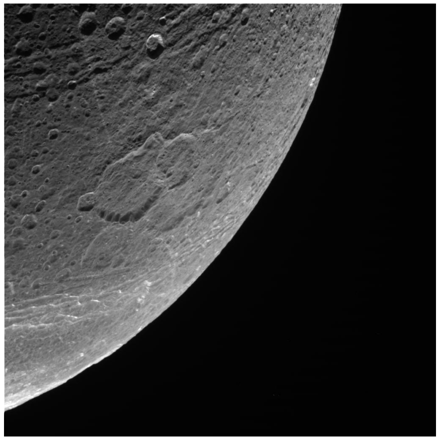
2007-273T03:03

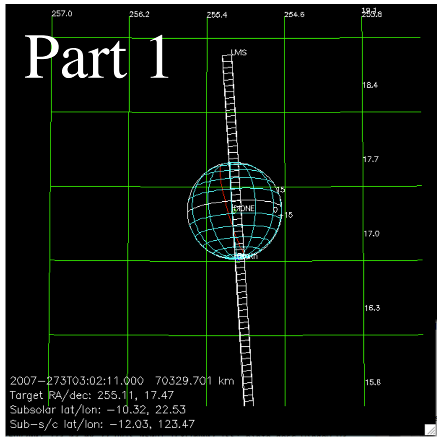
Alt= 69,367 km

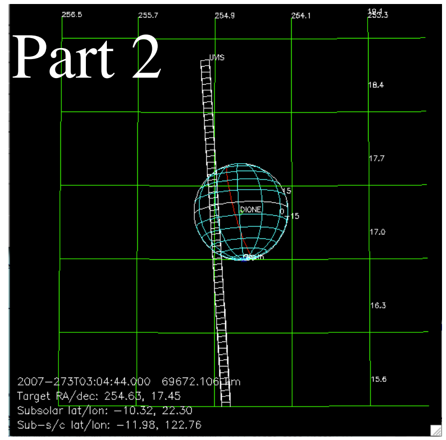
Longitude= 237°W

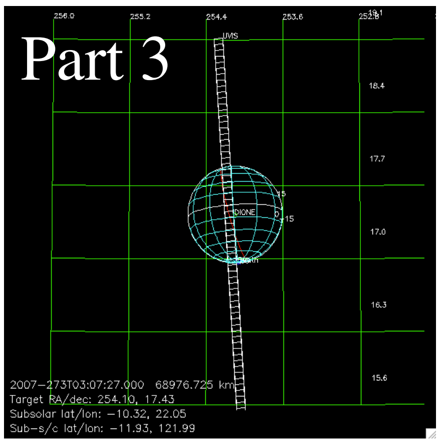
Latitude

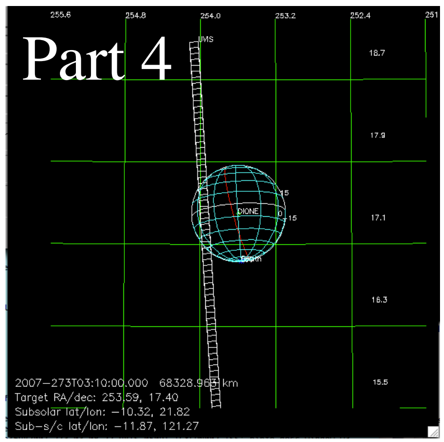
Phase= 97.6°

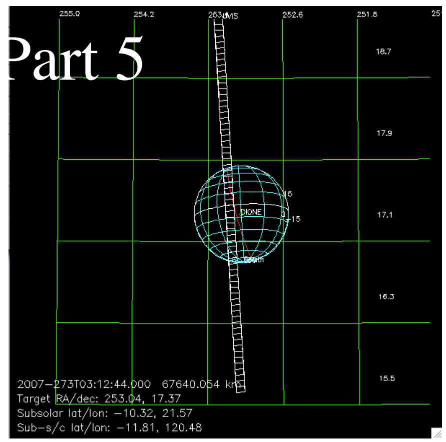




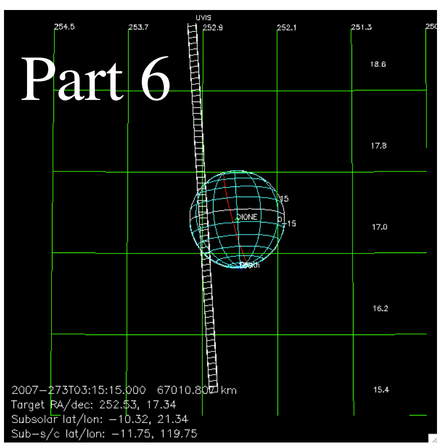


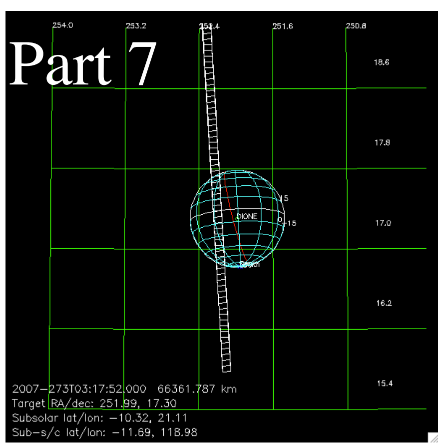


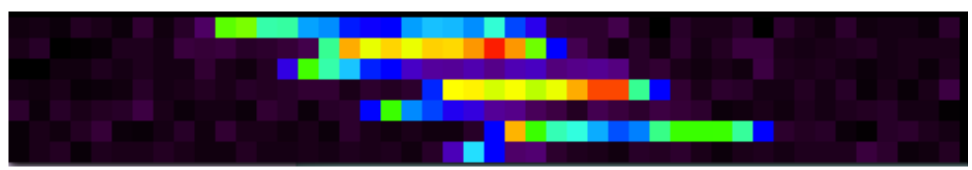




110-sec integ per



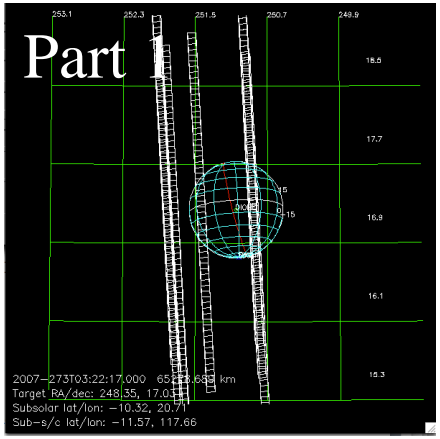


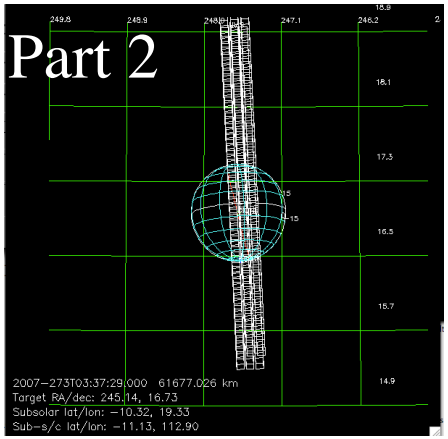


7

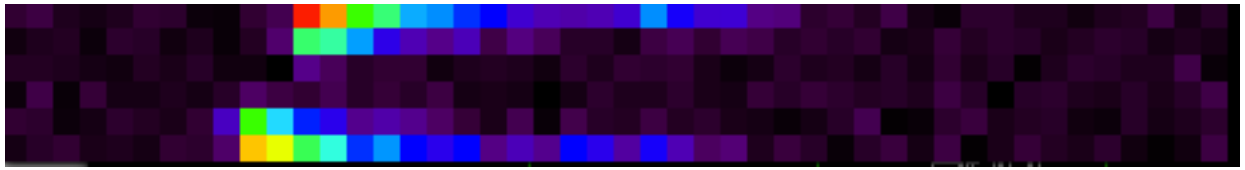
1

CIRS_050DI_FP1AMATA001_PRIME

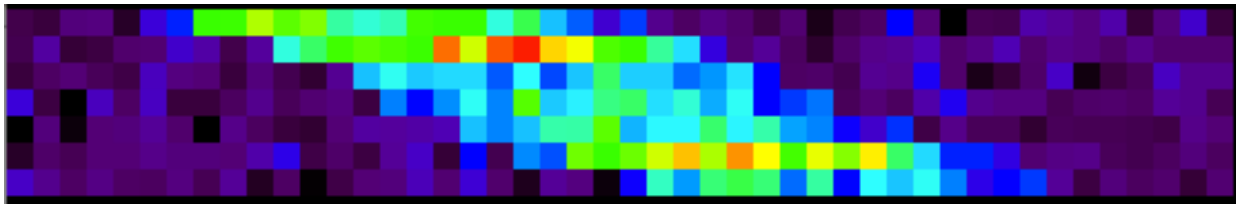




050DI_ICYLON003_CIRS
2007-273T03:23
Alt= 64,364 km
Longitude= 243°W
Phase= 93.9°

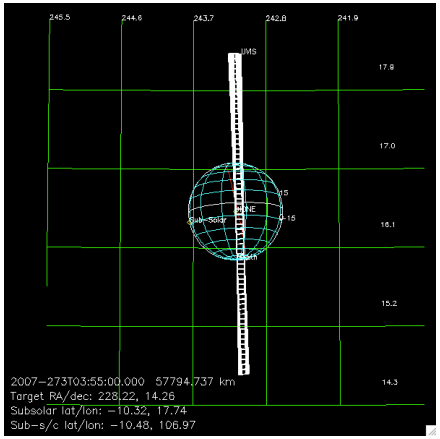


Part 2



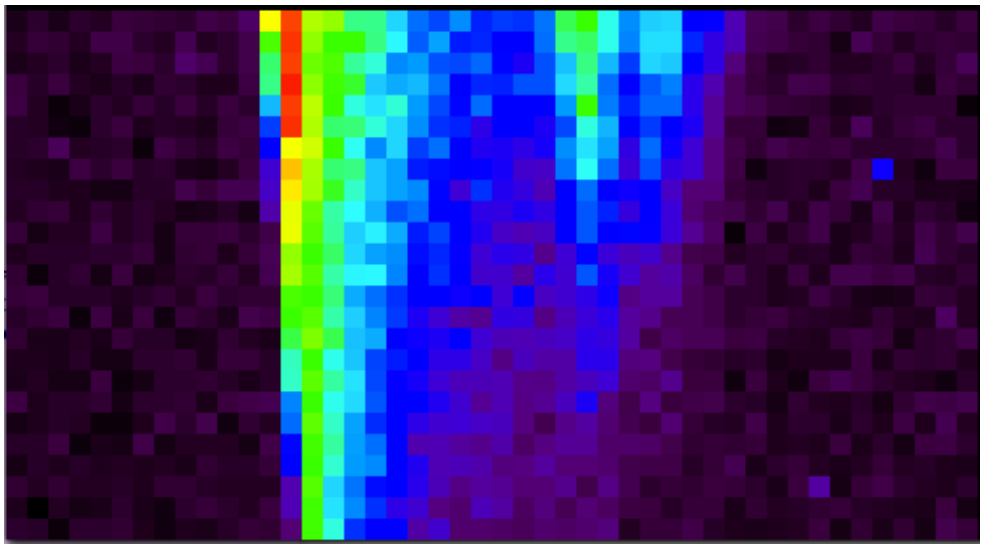
Part 1

VIMS_050DI_DIONE001_PRIME

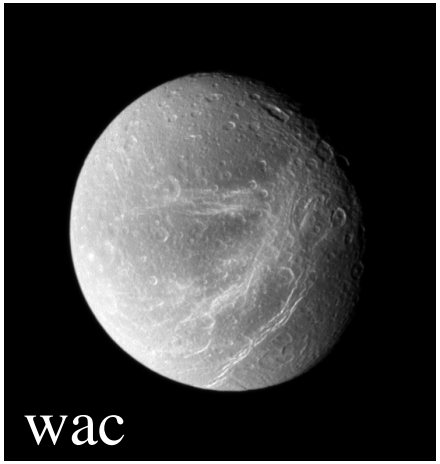


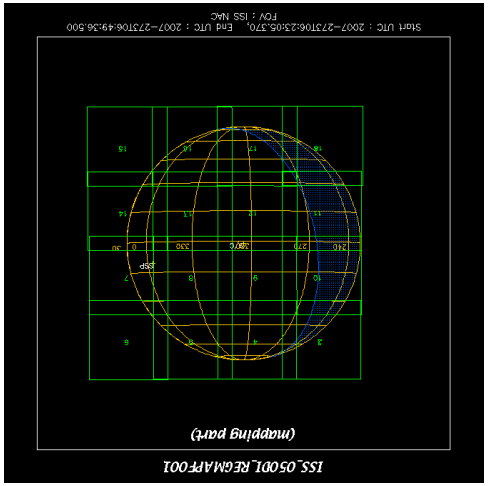
050DI_ICYLON004_VIMS
2007-273T03:56
Alt= 52,613 km
Longitude= 262°W
Latitude=9°S
Phase= 80.5°

Stare as Dione rotates beneath slit and phase angle decreases



ISS_050DI_REGMAPF001_PRIME





17-panel mosaic

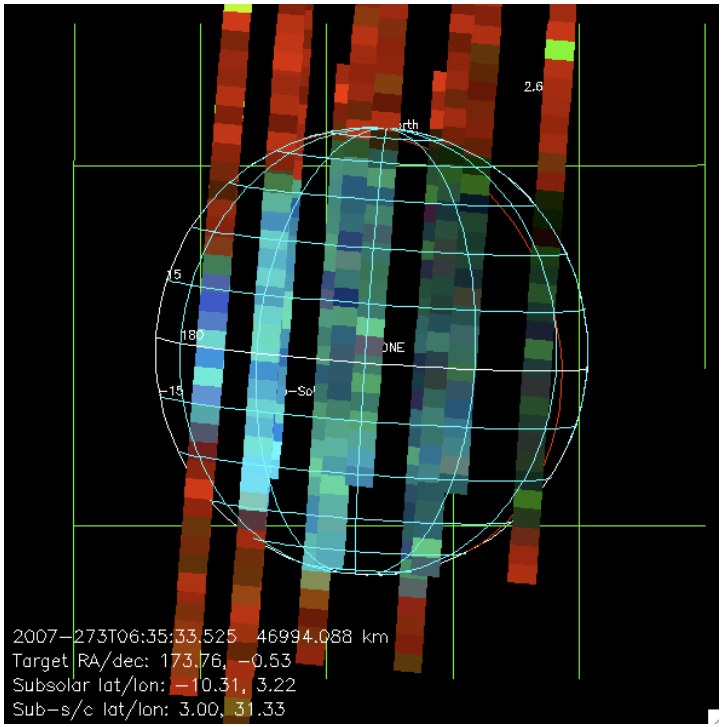
050DI_ICYLON005_ISS

2007-273T06:23

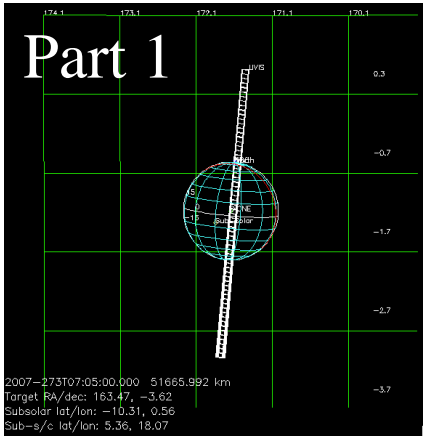
Alt= 45,143 km

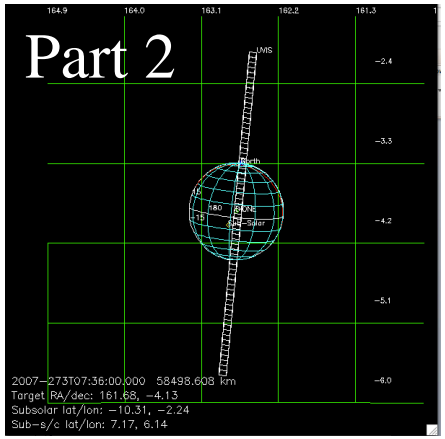
Longitude= 323°W

Phase= 35.1°



VIMS_050DI_DIONE002_PRIME





050DI_ICYLON006_VIMS

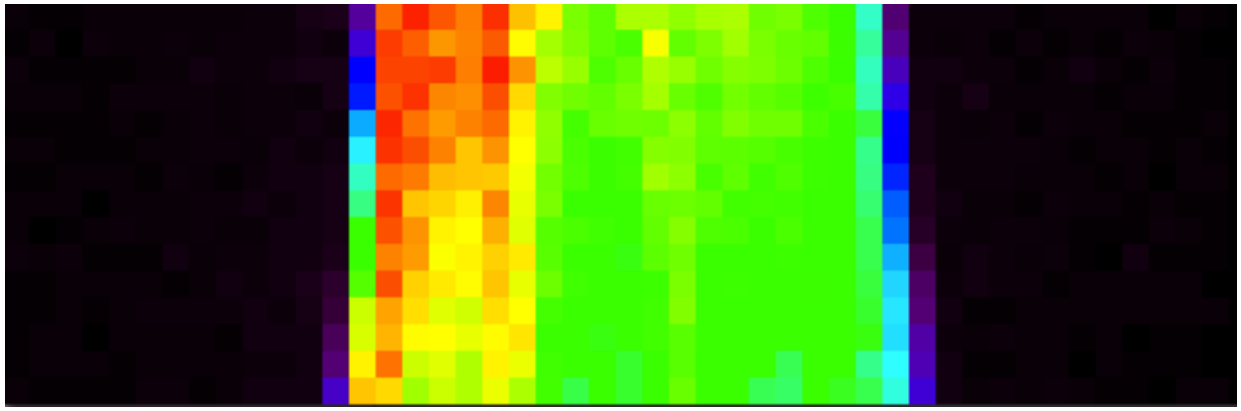
2007-273T07:06

Alt= 54,039 km

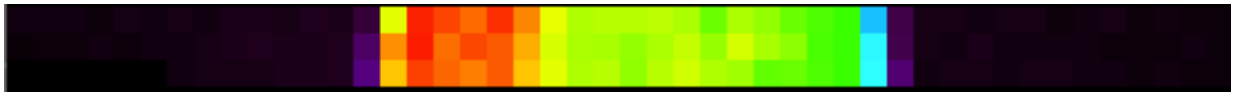
Longitude= 348°W

Latitude=6°N

Phase= 21.5°

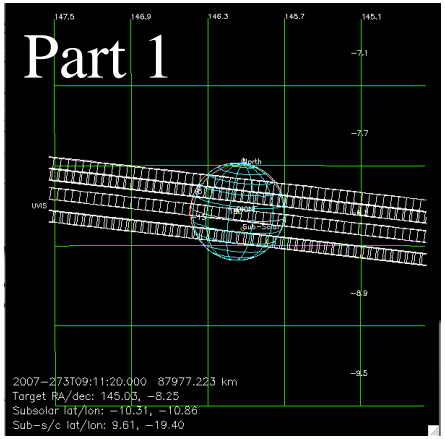


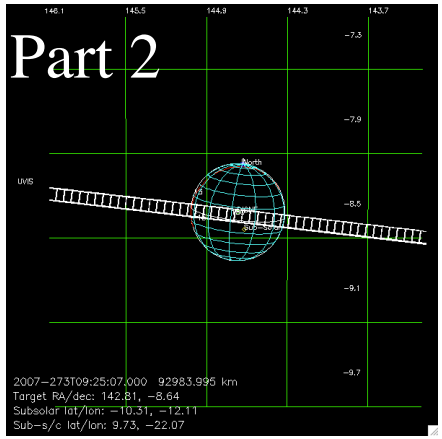
Part 1



Part 2

ISS_050DI_REGMAPG001_PRIME





050DI_ICYLON007_ISS

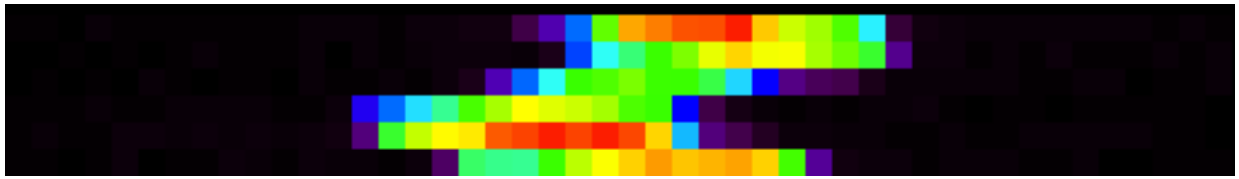
2007-273T09:12

Alt= 89,218 km

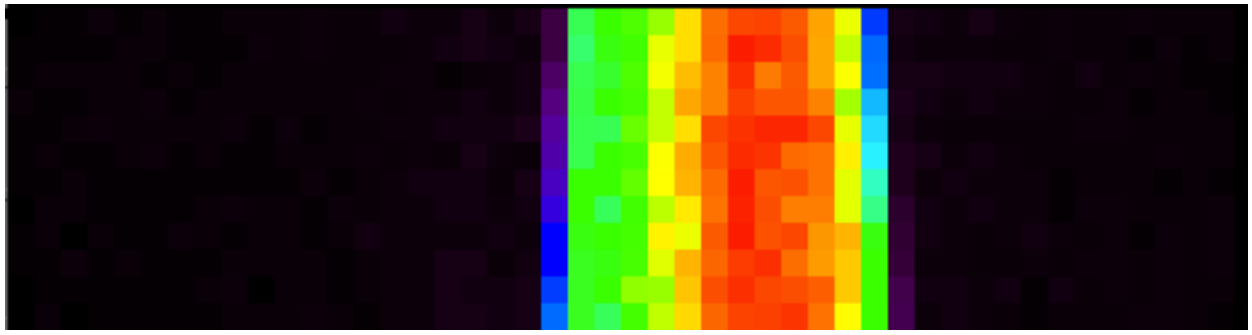
Longitude= 20°W

Latitude=10°N

Phase= 22°

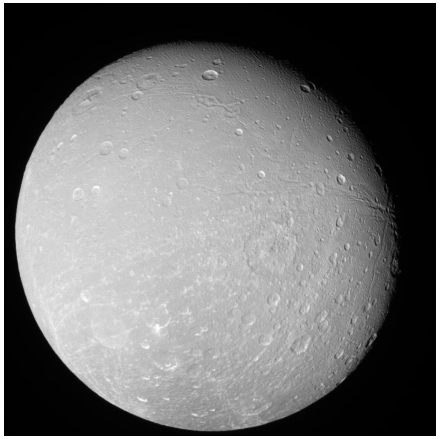


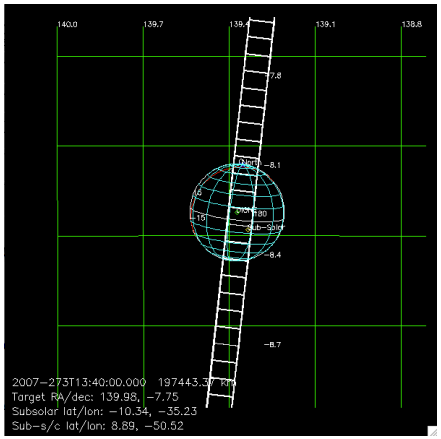
Part 1



Part 2

ISS_050DI_GLOCOL001_PRIME





050DI_ICYLON008_ISS

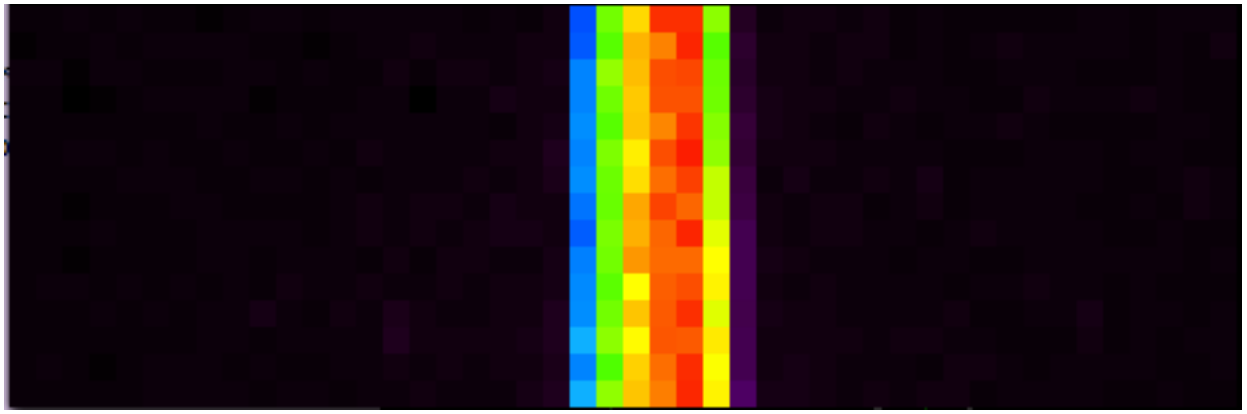
2007-273T13:41

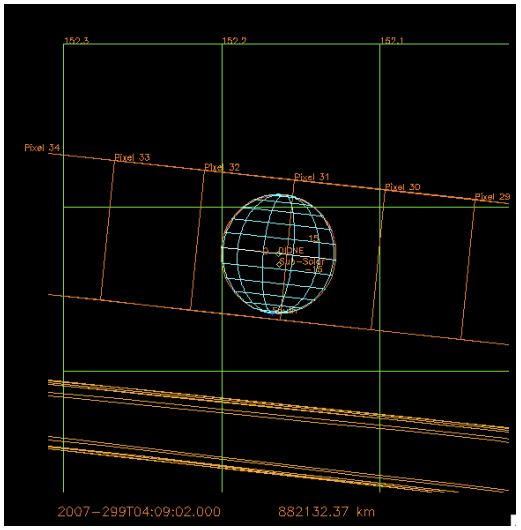
Alt= 202,489 km

Longitude= 51°W

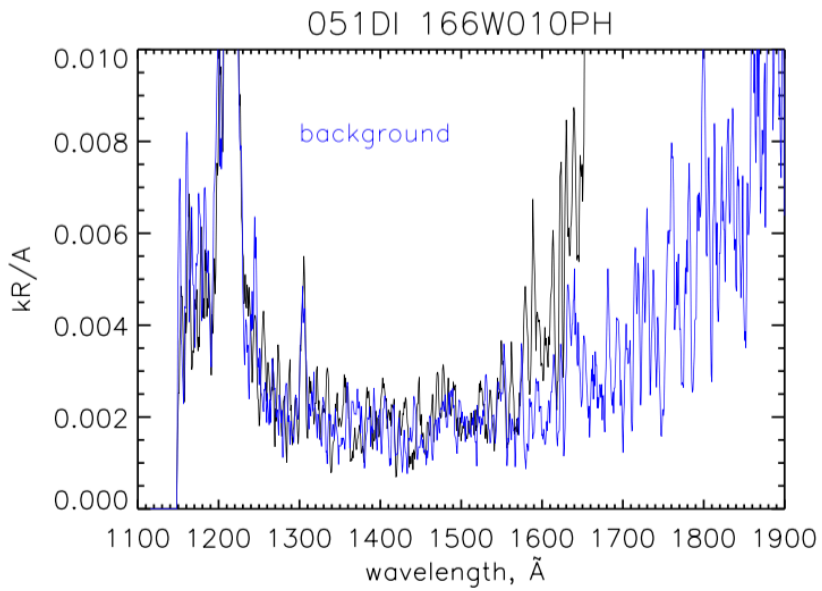
Latitude=9°N

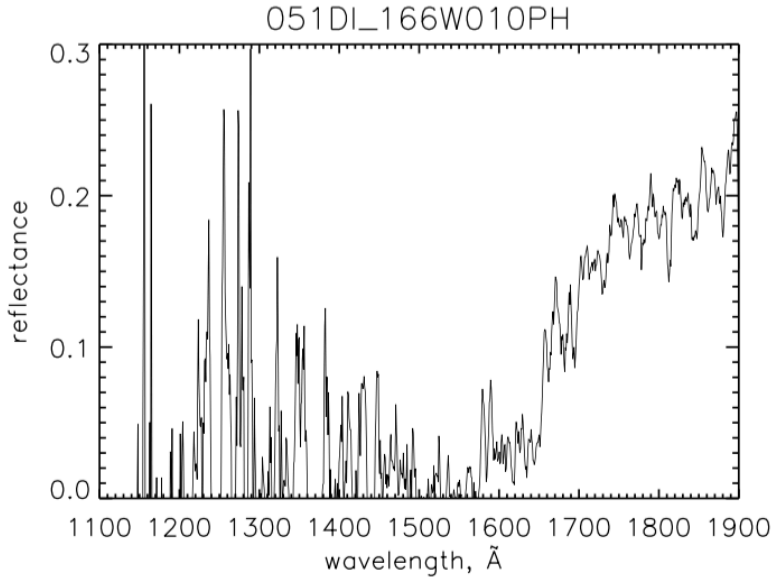
Phase= 24.4°

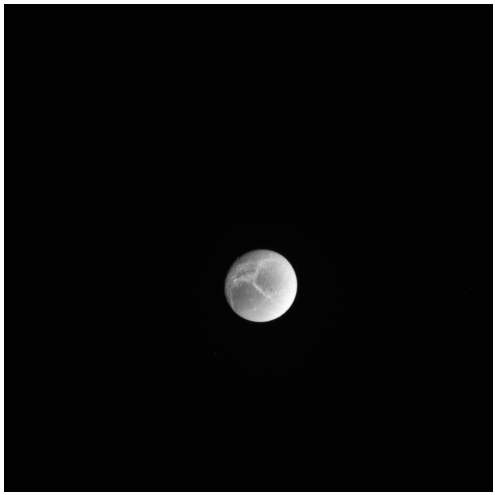


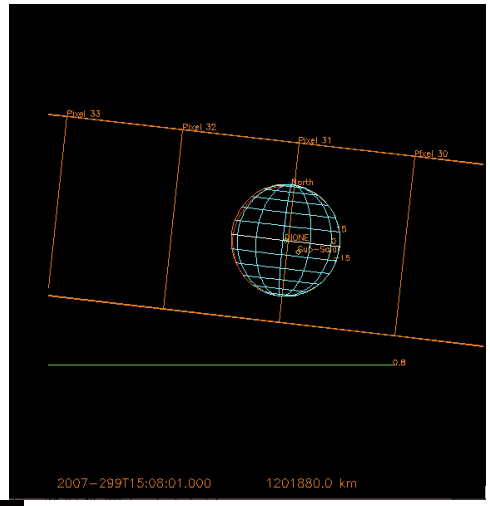


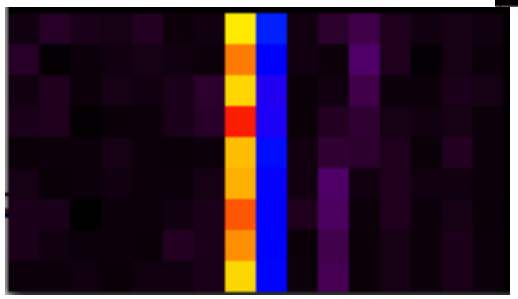
051DI_166W010PH001_ISS
2007-299T04:10
Alt= 882,415 km
Longitude= 165°W
Latitude=0.38°S
Phase= 9.95°



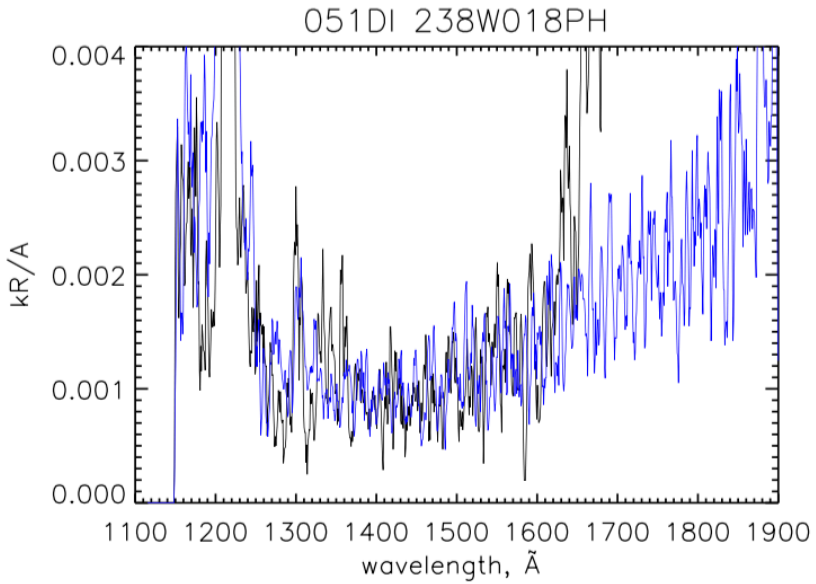


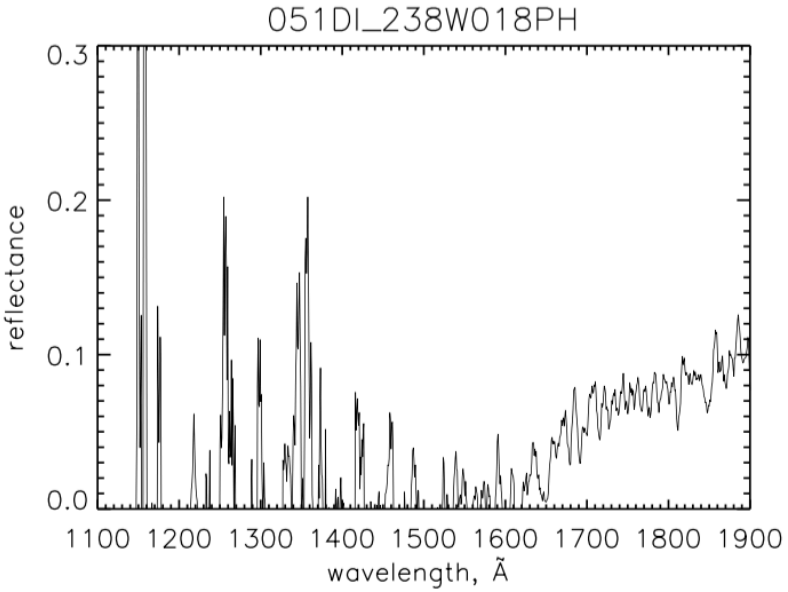


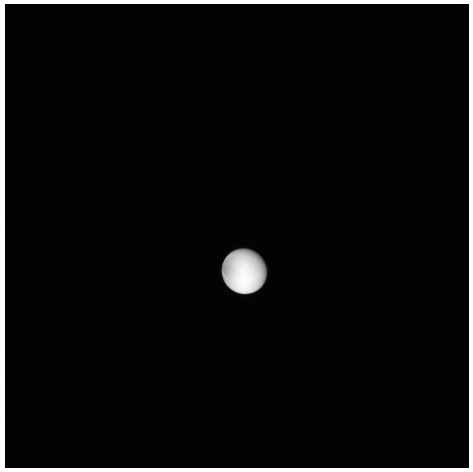


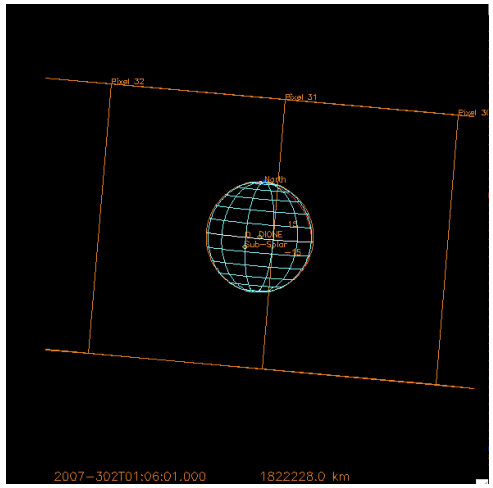


051DI_238W018PH001_ISS
2007-299T15:07
R= 1,205,752 km
Longitude= 237°W
Latitude=0.2°N
Phase= 17.7°

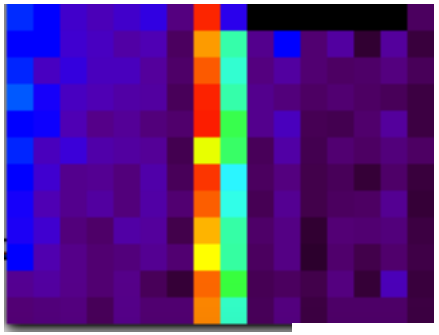


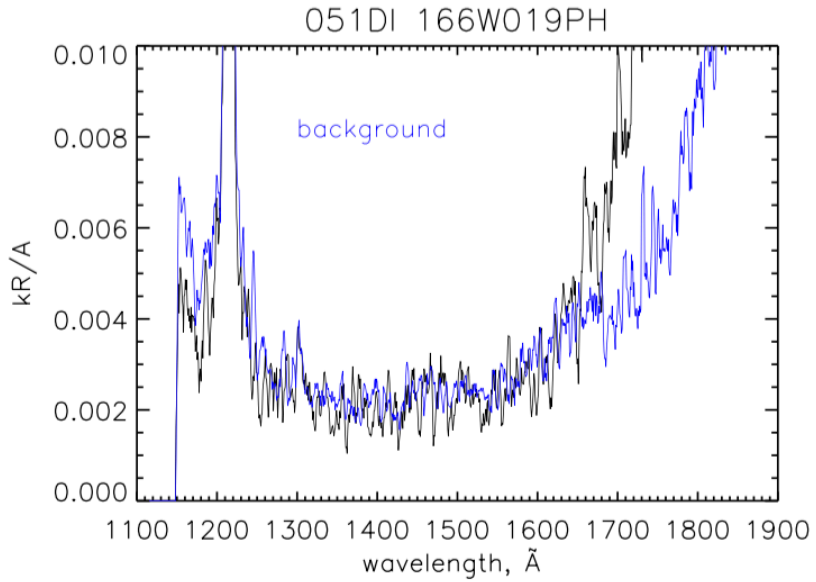


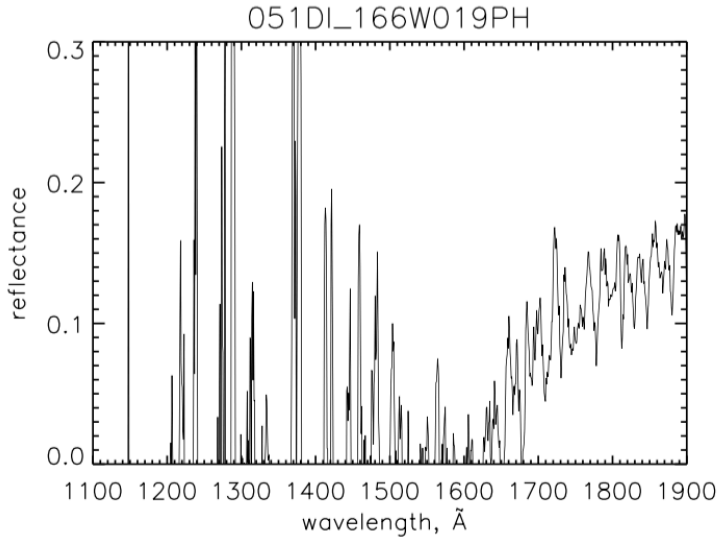


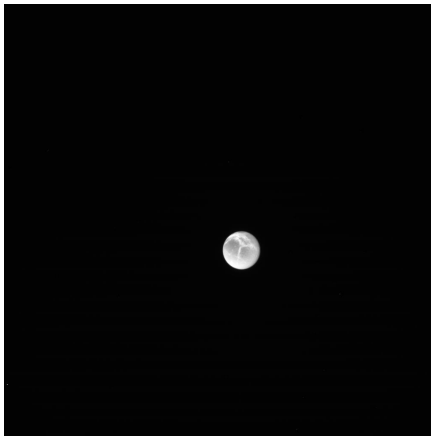


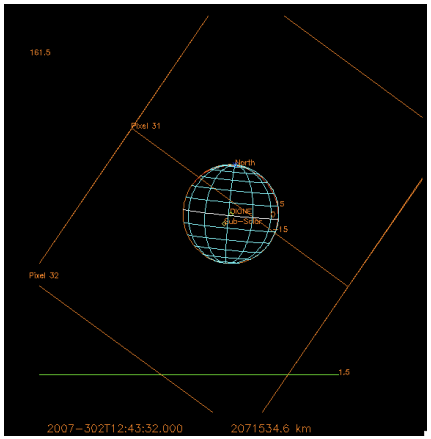
051DI_166W019PH001_ISS
2007-302T01:07
R= 1,821,899 km
Longitude= 166°W
Latitude=1.7°N
Phase= 19.17°

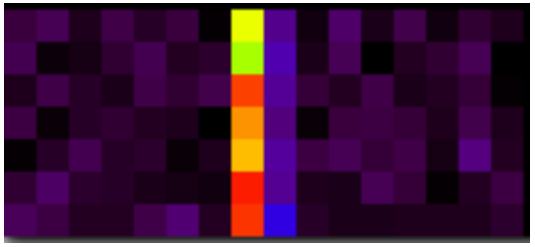




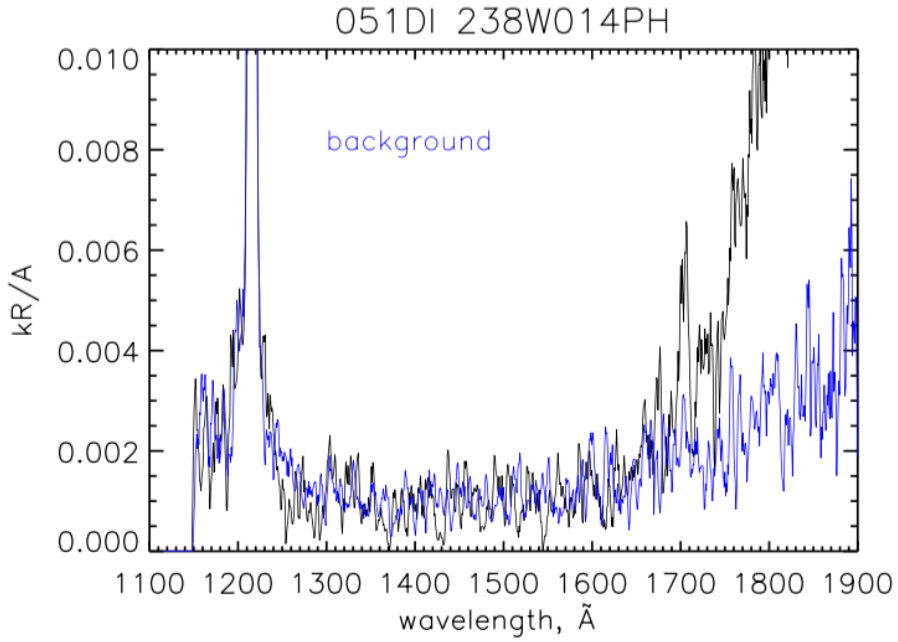


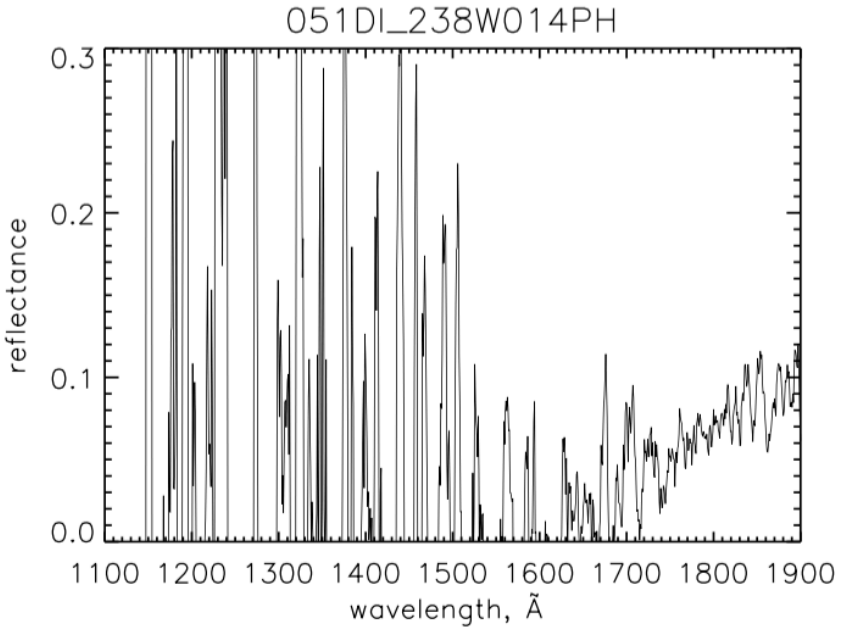


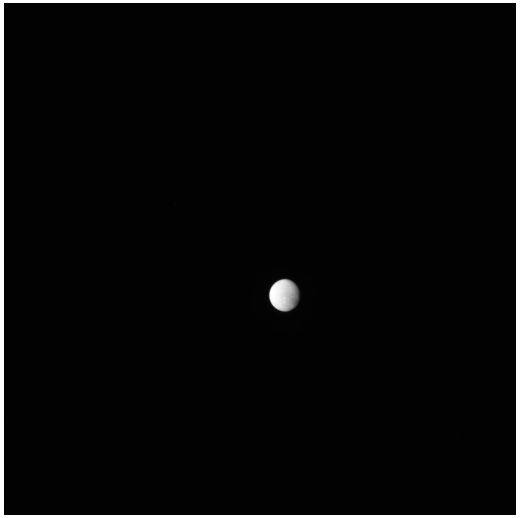


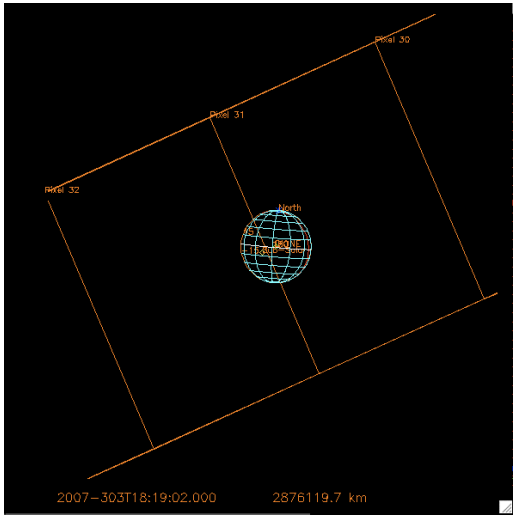


051DI_238W014PH001_ISS
2007-302T12:44
Alt= 2,074,816 km
Longitude= 237°W
Latitude=1.8°N
Phase= 13.55°

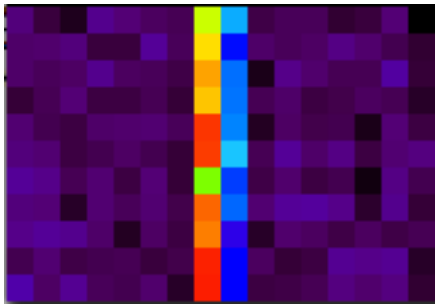


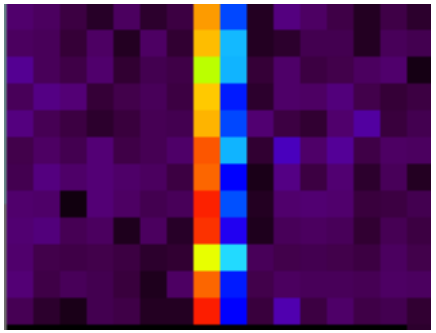


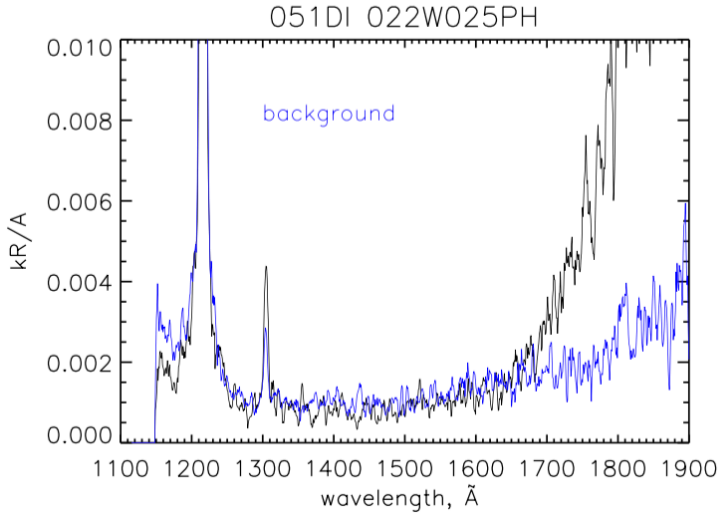


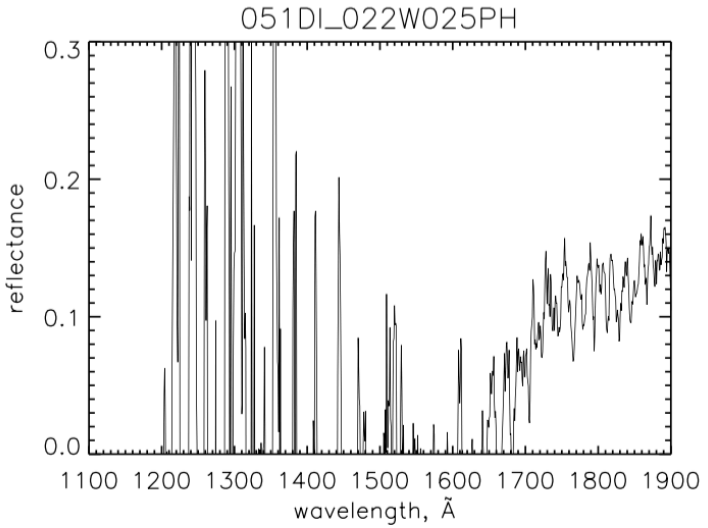


051DI_022W025PH001_ISS
2007-303T18:18
Alt= 2,874,566 km
Longitude= 24°W
Latitude=1.7°N
Phase= 25.1°

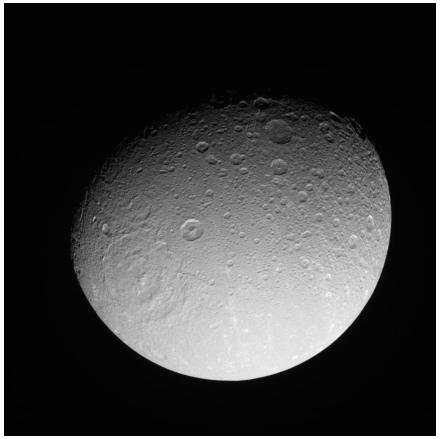


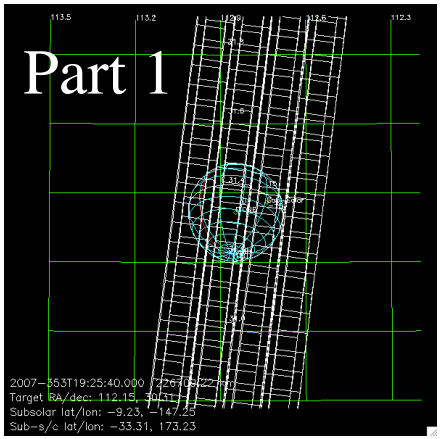


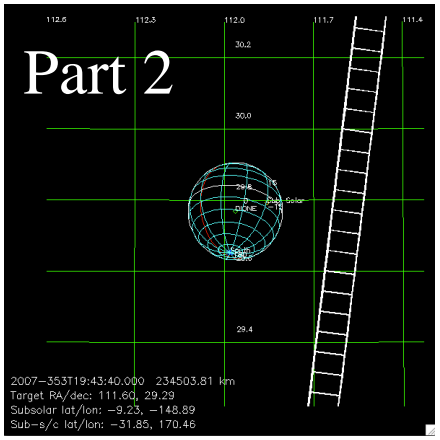


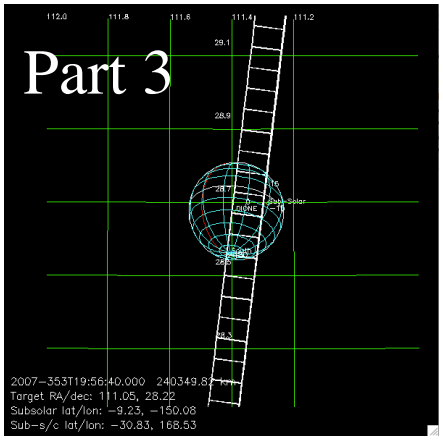


CIRS_054DI_ORSDIONE001_PRIME









054DI_ICYLON001_CIRS

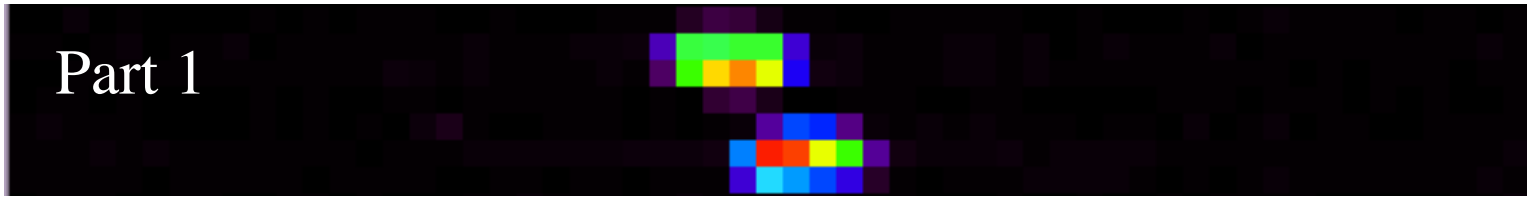
2007-353T19:26

Alt= 229,150 km

Longitude= 188°W

Latitude=33°S

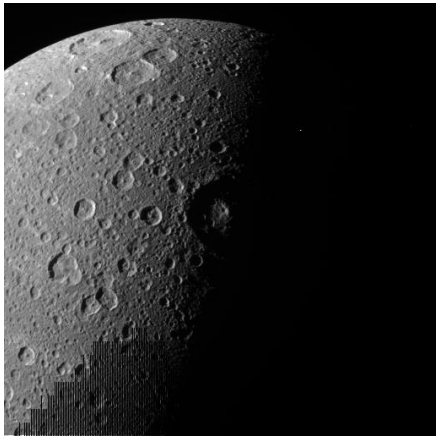
Phase= 43.7°

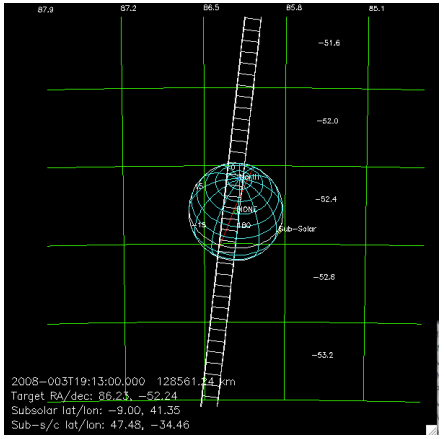


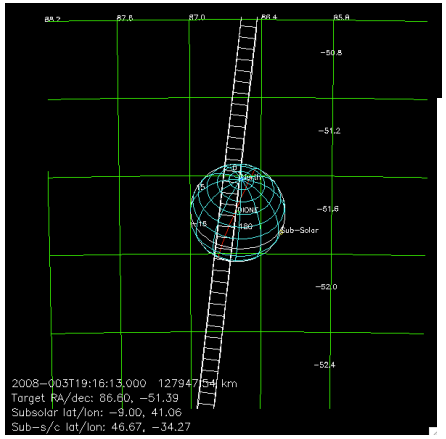
ISS_055DI_REGGEODA001_PRIME

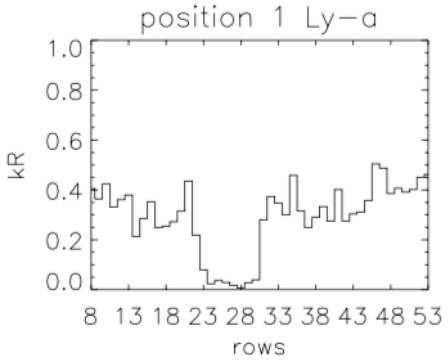
055DI_REGGEO001_ISS

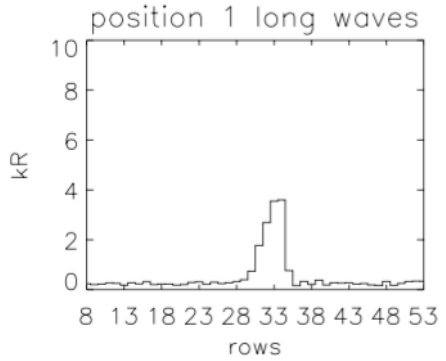
2008-003T19:14
Alt= 128,001 km
Longitude= 34°W
Latitude=47.5°N
Phase= 87.2°

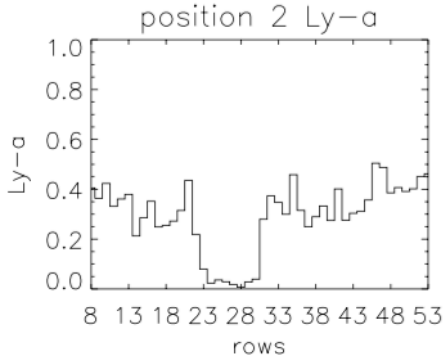


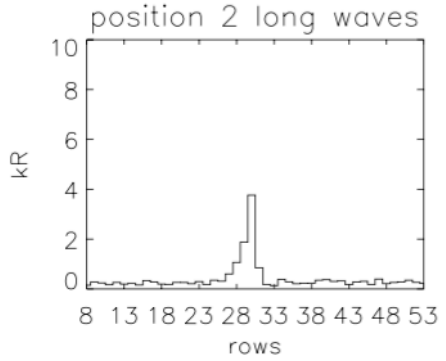




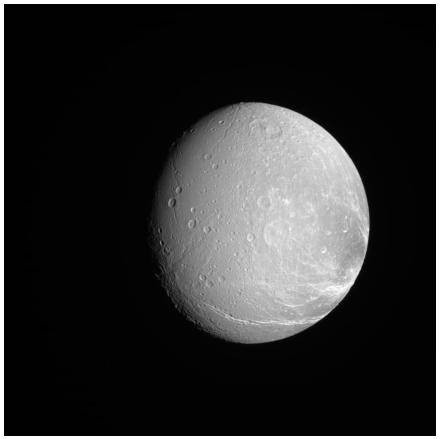


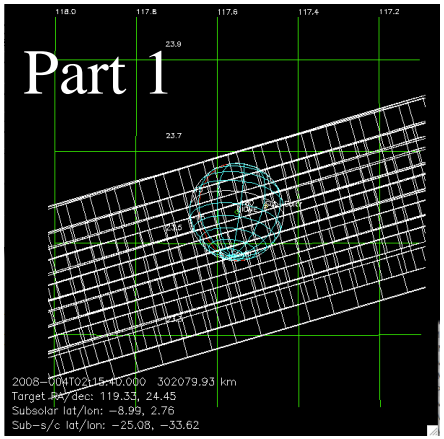


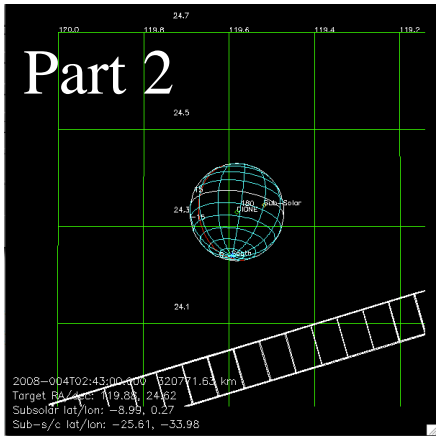


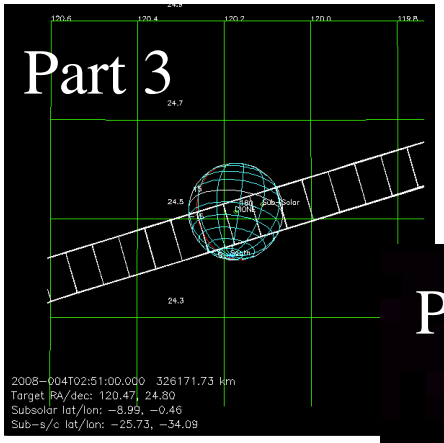


CIRS_055DI_ORSDIONE001_PRIME

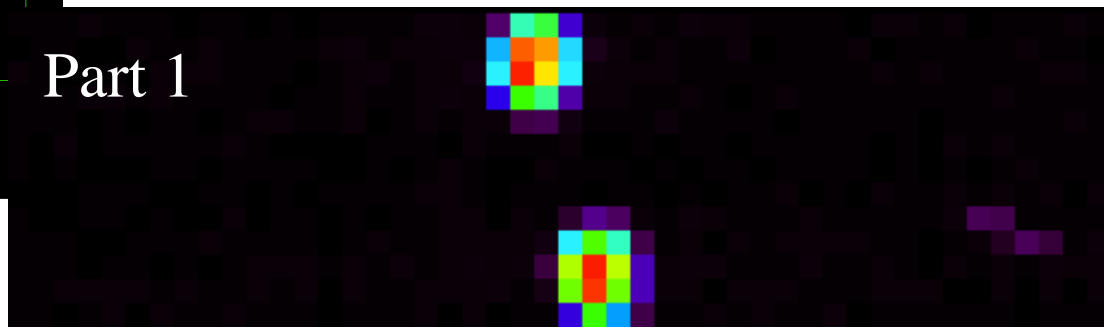




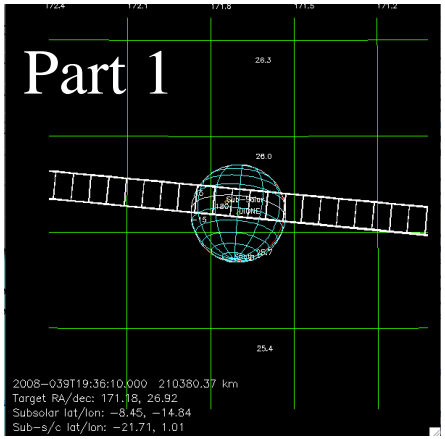


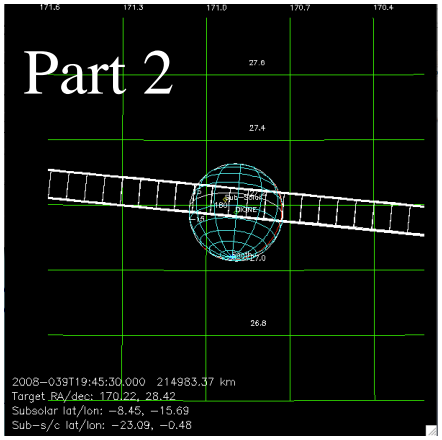


055DI_ICYLON001_CIRS
2008-004T02:16
Alt= 300,702 km
Longitude= 34°W
Latitude
Phase= 38.2°



VIMS_058DI_DIONE001_PRIME





058DI_ICYLON001_VIMS

2008-039T19:37

Alt= 211,278 km

Longitude= 360°W

Latitude=22°S

Phase= 20.4°

CIRS_058DI_ORS001_PRIME

058DI_ICYLON002_CIRS

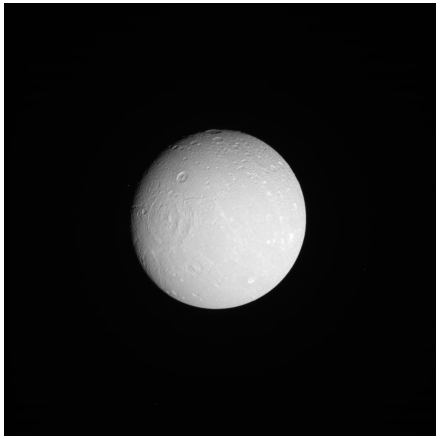
2008-040T18:09

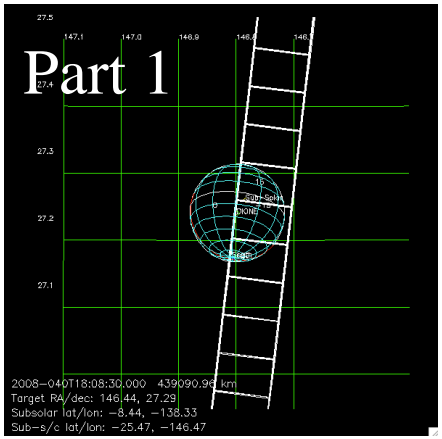
Alt= 438,723 km

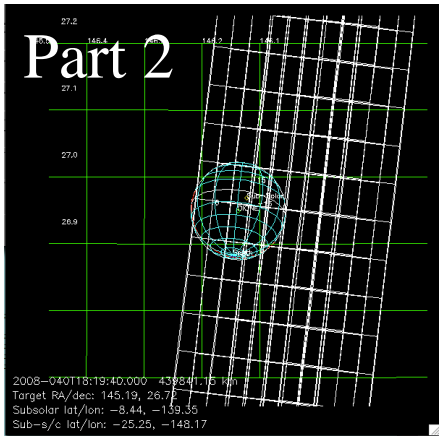
Longitude= 147°W

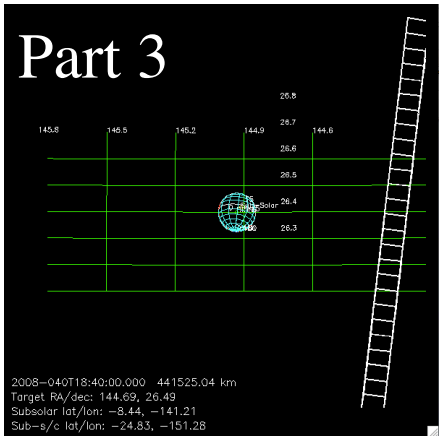
Latitude=25°S

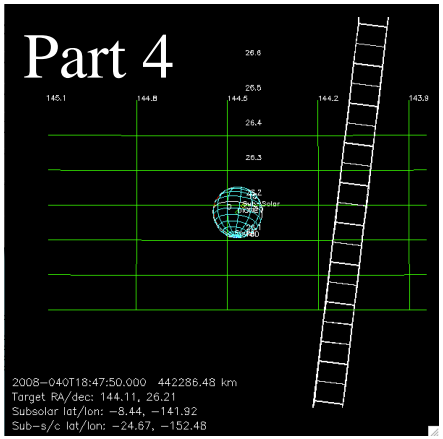
Phase= 18.7°

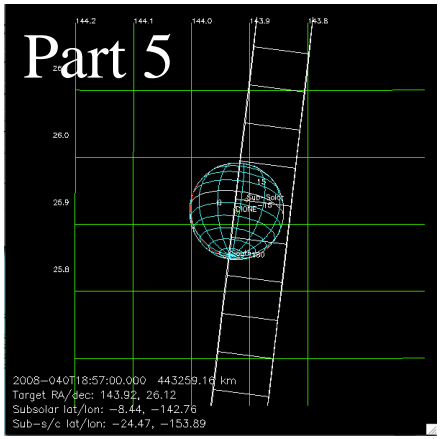


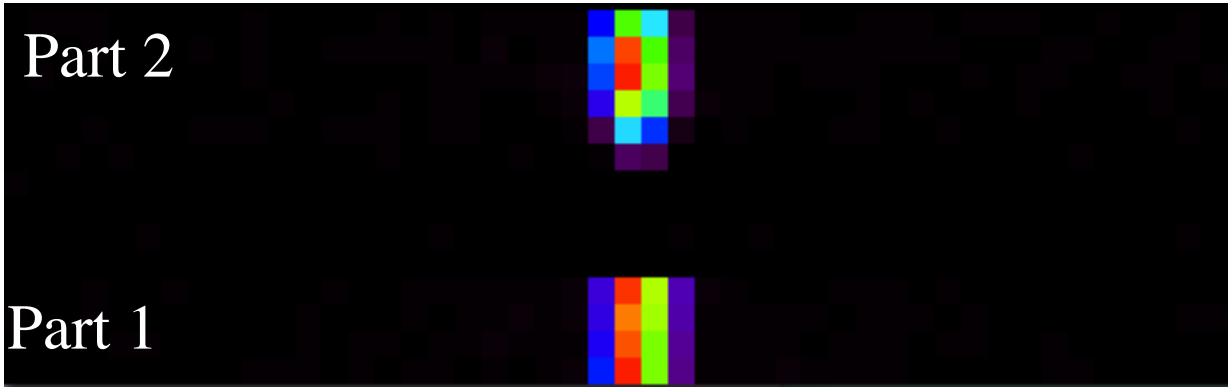












CIRS_060DI_FP1SECLNX001_PRIME

060DI_FP1SECLN001_CIRS

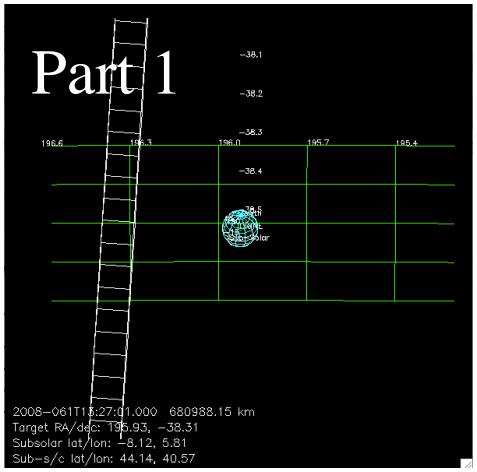
2008-061T13:28

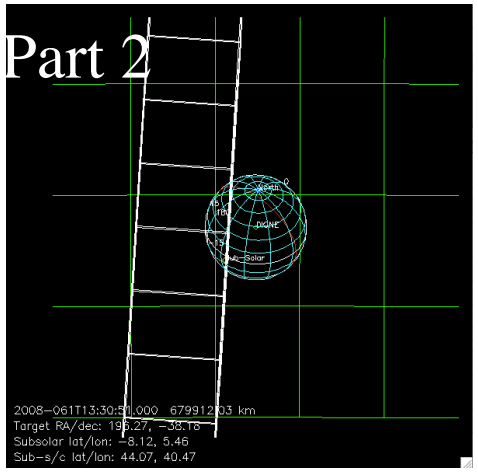
Alt= 677,850 km

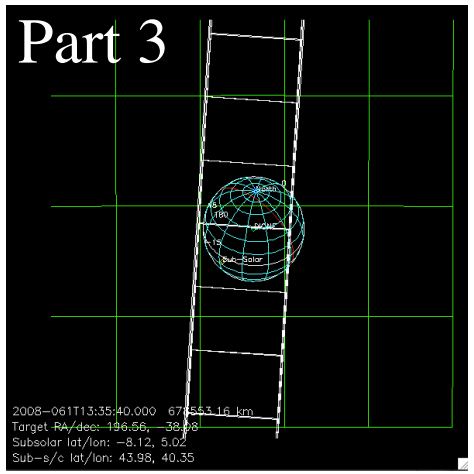
Longitude= 320°W

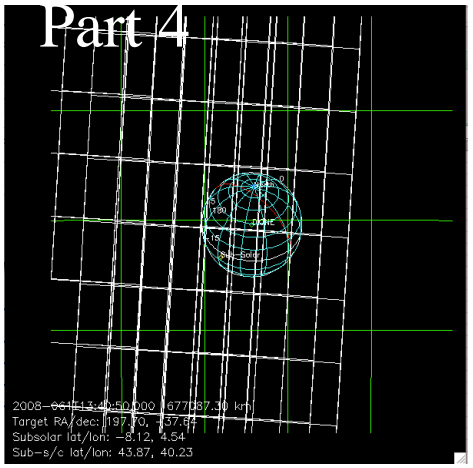
Latitude

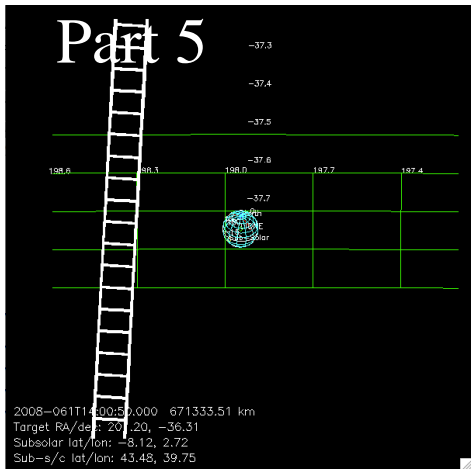
Phase= 61°











Dione in eclipse: 14:12:04-14:57:35

CIRS_060DI_FP1SECLNX001_PRIME

060DI_FP1SECLX001_CIRS

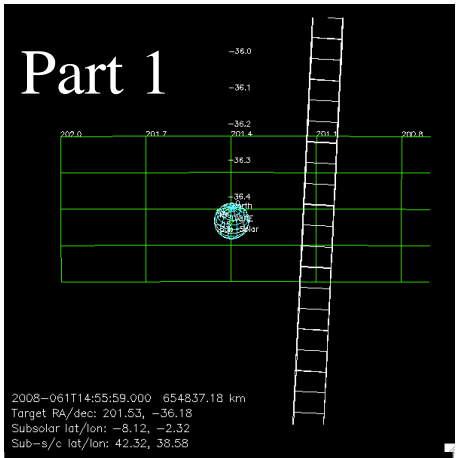
2008-061T14:56

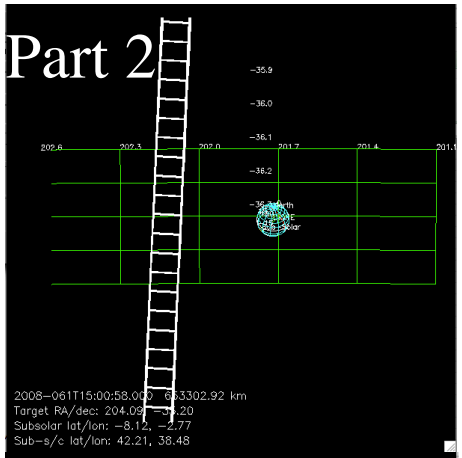
Alt= 653,601 km

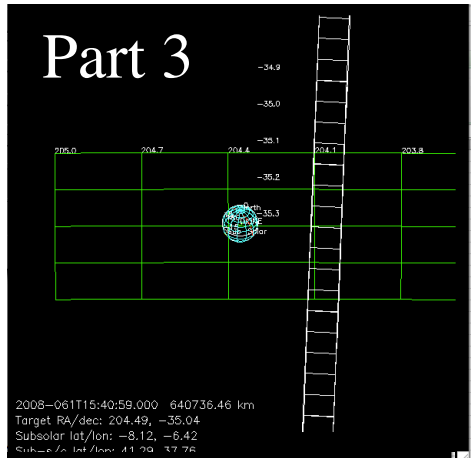
Longitude= 321°W

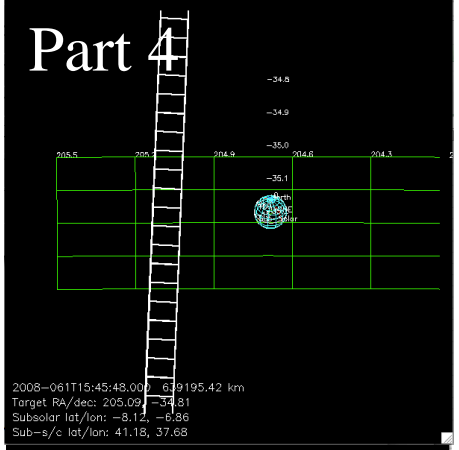
Latitude

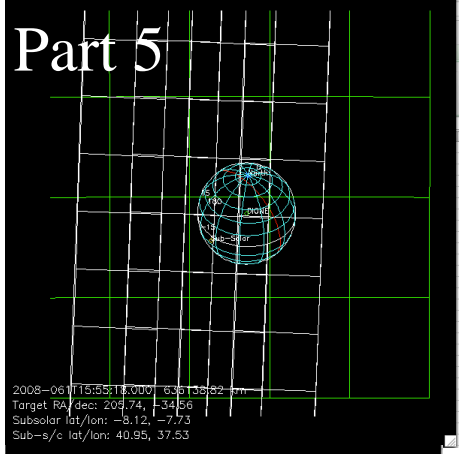
Phase= 63°

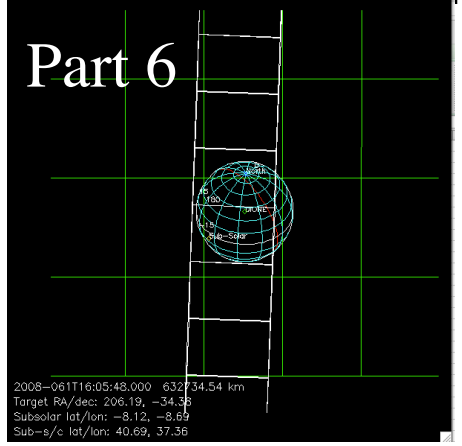


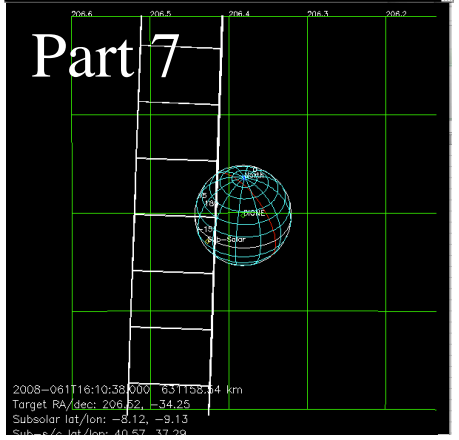


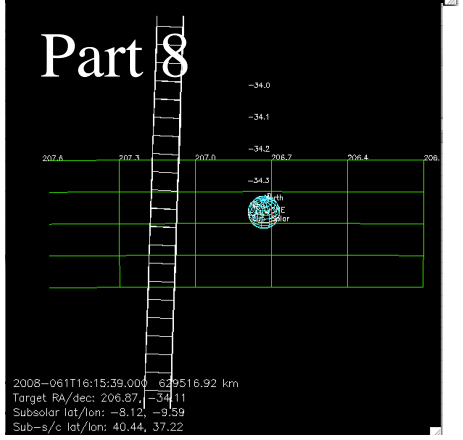












Dione in eclipse: 14:12:04-14:57:35

ISS_062DI_ISSSAT001_PRIME

062DI_ICYLON001_ISS

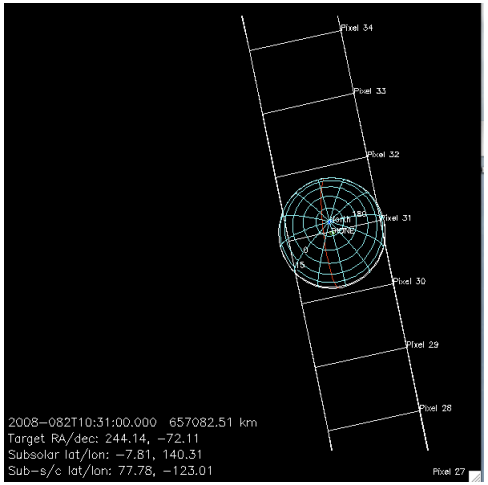
2008-082T10:04

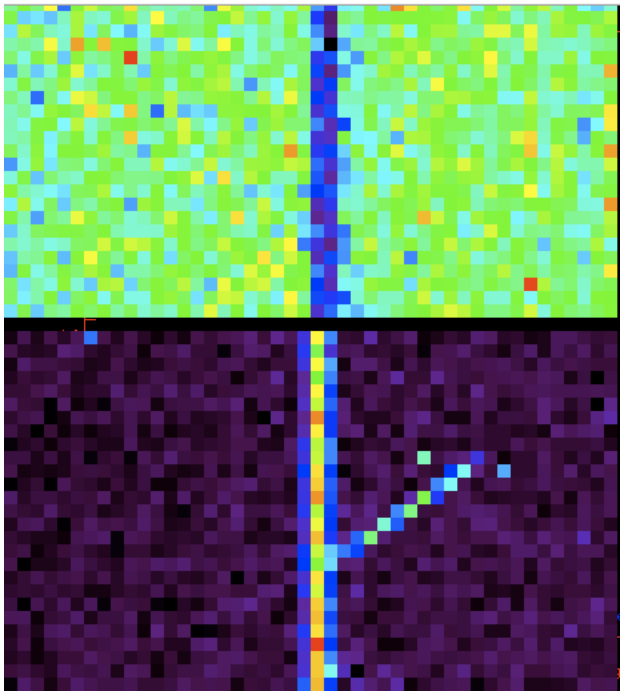
Alt= 657,189 km

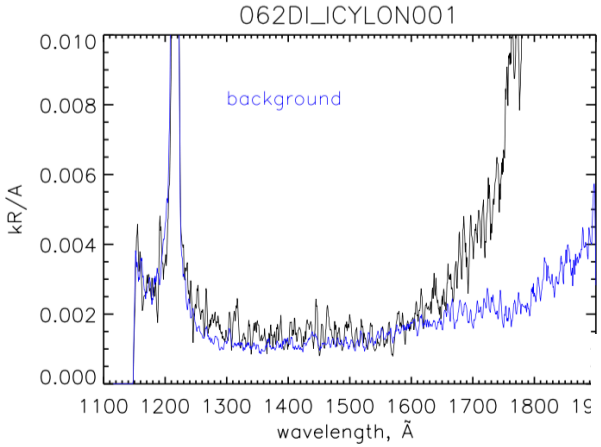
Longitude= 123°W

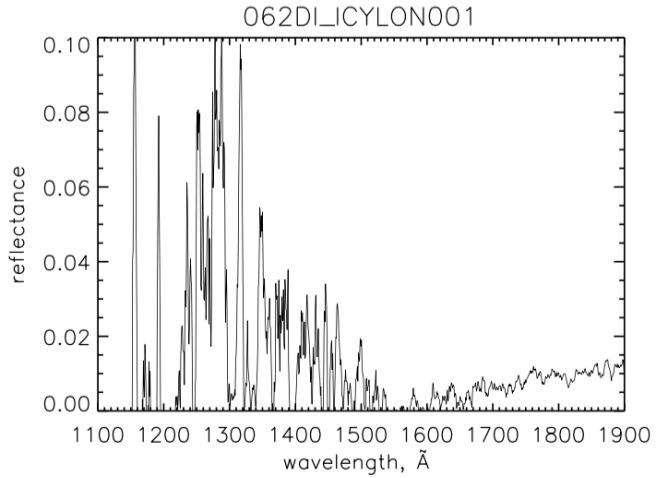
Latitude=77.7°N

Phase= 99°

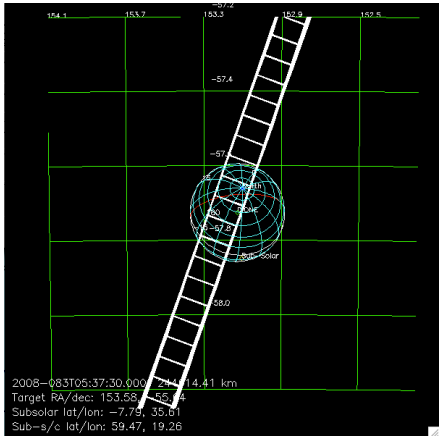








VIMS_062DI_DIONE002_PRIME



062DI_ICYLON002_VIMS

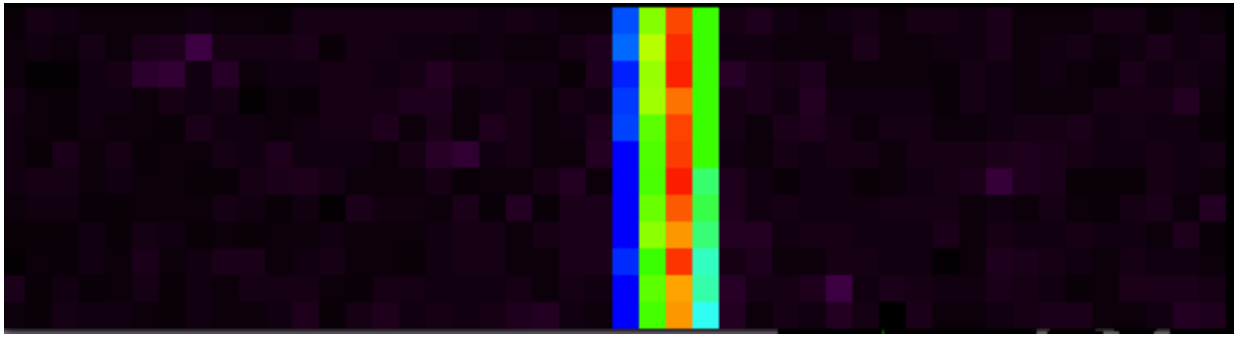
2008-083T05:38

Alt= 237,884 km

Longitude= 341°W

Latitude=58.6°N

Phase= 67.6°



CIRS_062DI_FP1SECLN001_PRIME

062DI_ICYLON003_CIRS

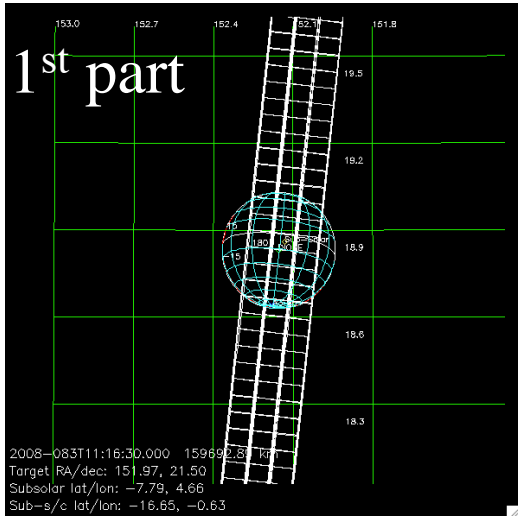
2008-083T11:33

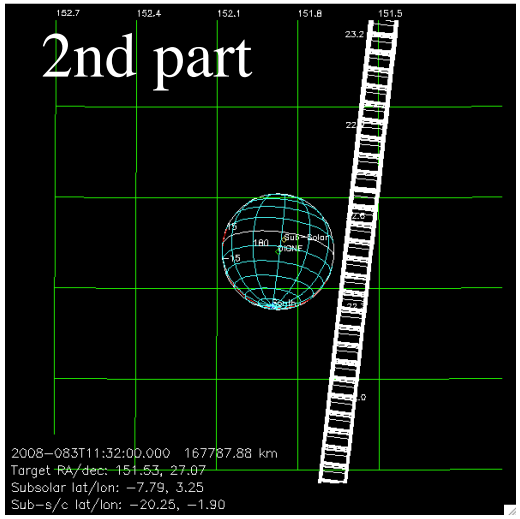
Alt= 161,662 km

Longitude= 1°W

Latitude=17.8°S

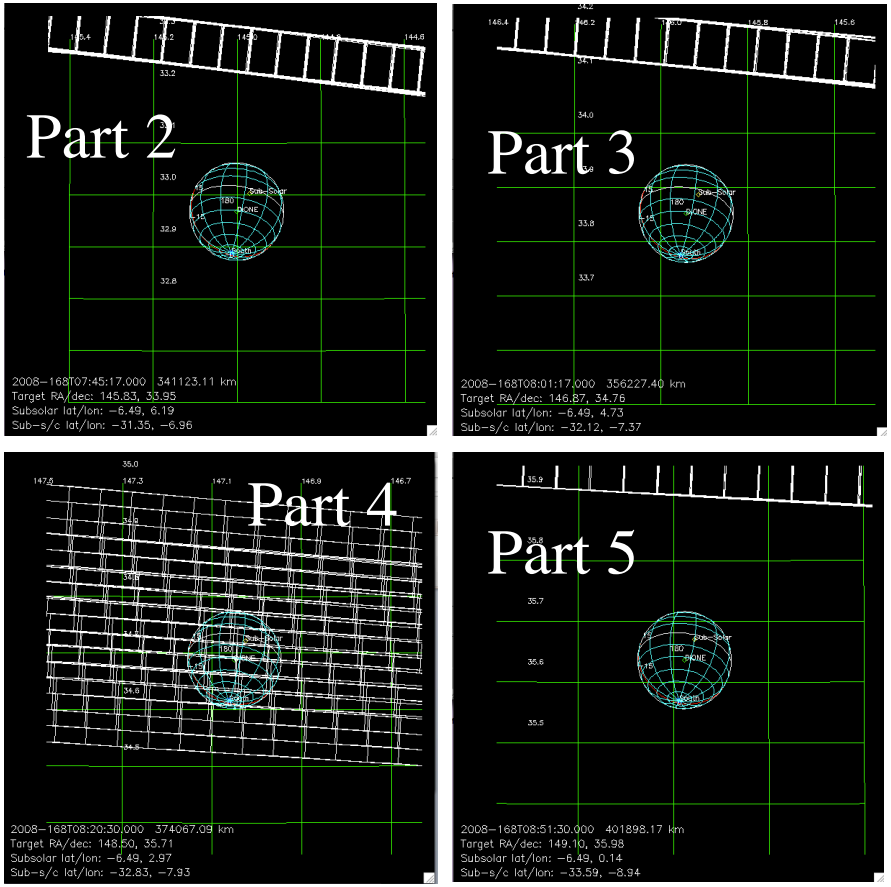
Phase= 11.3°





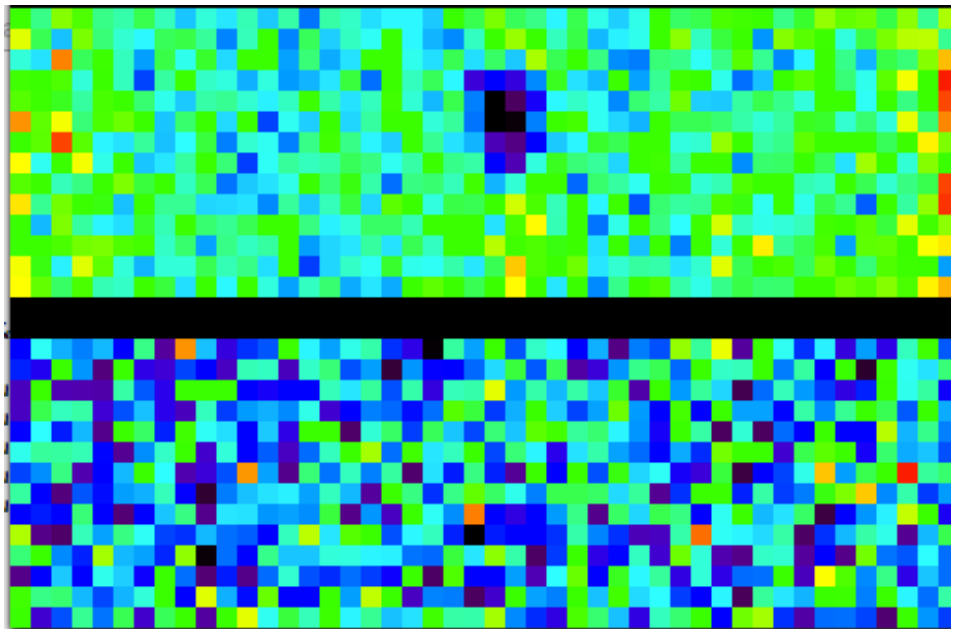
1st part

072MI_ICYLON001_ISS
2008-168T07:06
Alt= 385,292 km
Longitude=8°W
Latitude=33°S
Phase=28°



Parts 2-5 of this observation are Dione (not Mimas)

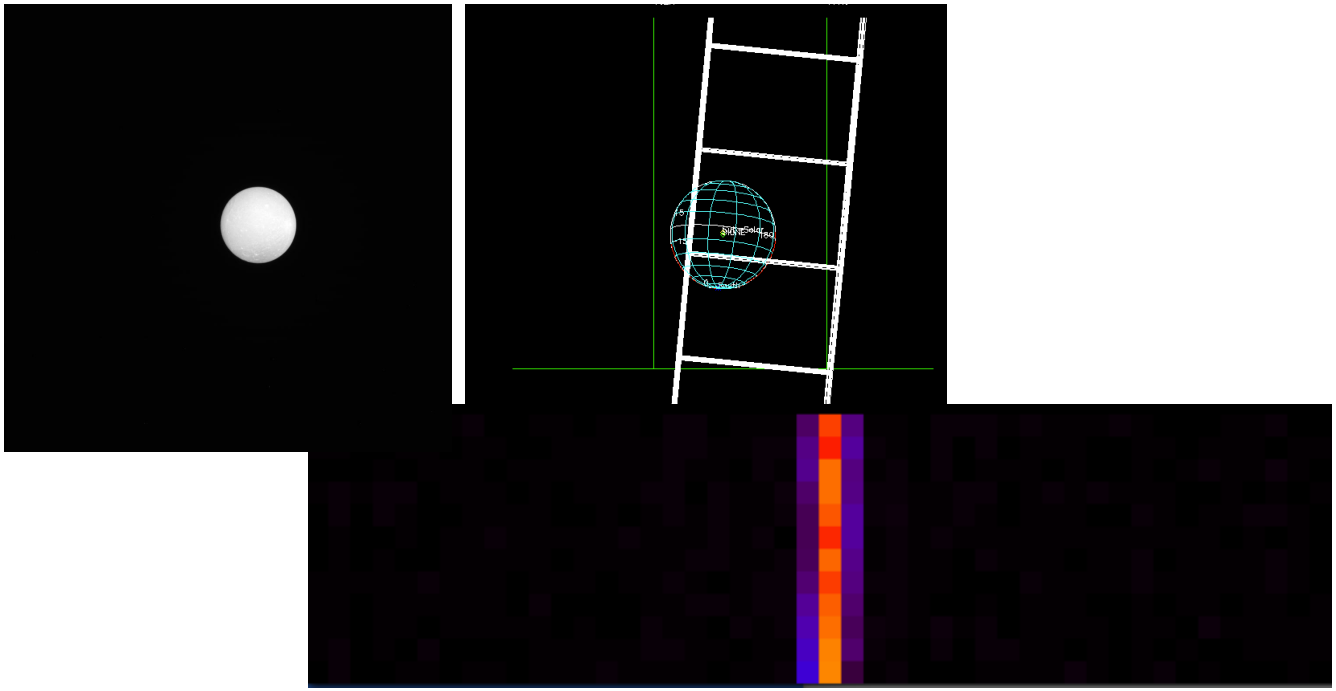
Part 4



Ly-a

Long waves (low SNR)

ISS_073DI_LOWPHASEJ001_PRIME



073DI_ICYLON001_ISS

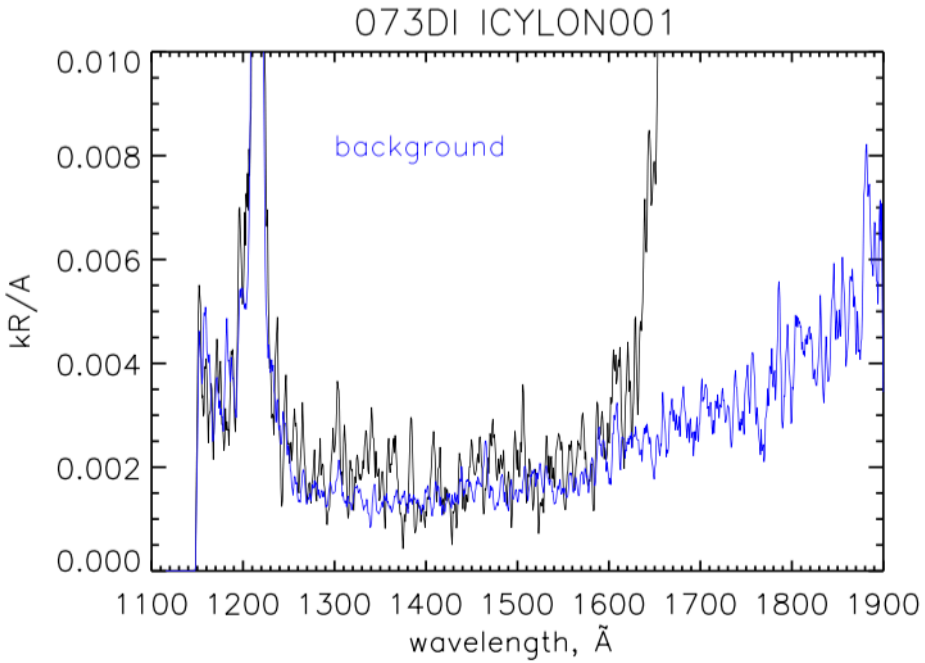
2008-177T03:31

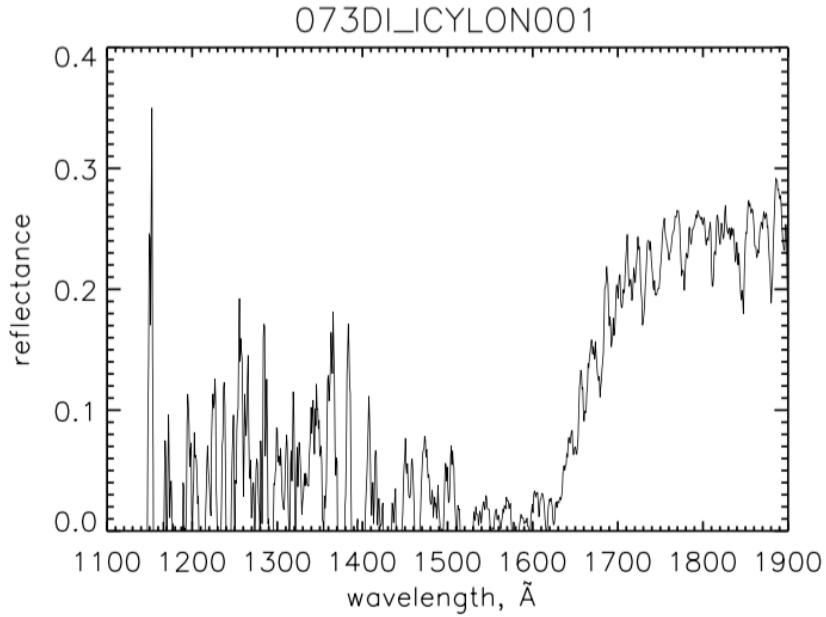
Alt= 1,076,273 km

Longitude= 74°W

Latitude=9.1°S

Phase= 2.8°





ISS_073DI_ZEROPHASE001_PRIME

073DI_ICYLON002_ISS

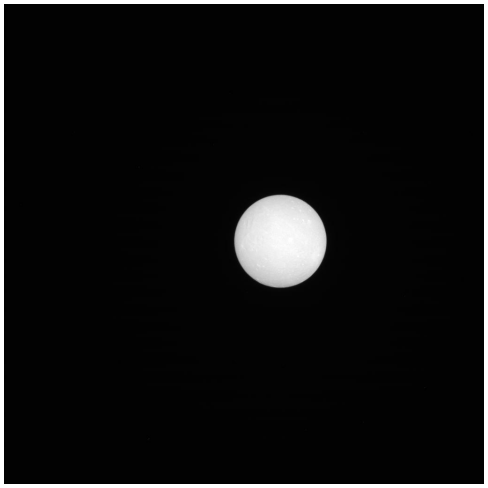
2008-177T07:59

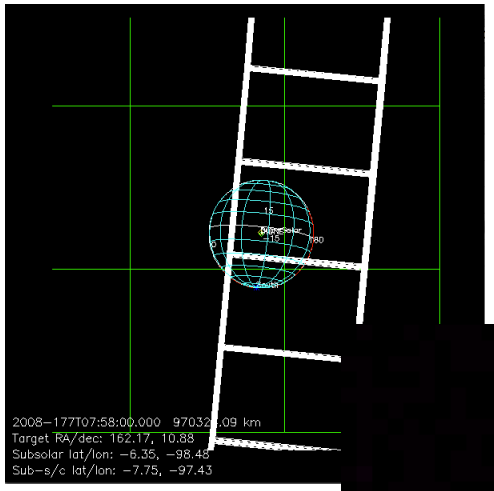
Alt= 958,624 km

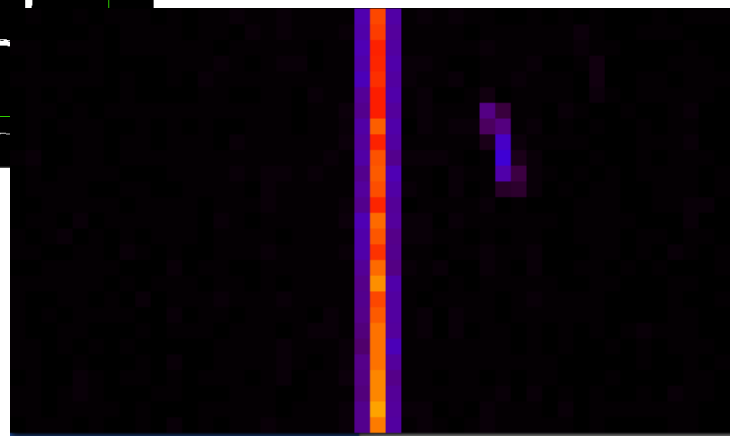
Longitude= 100°W

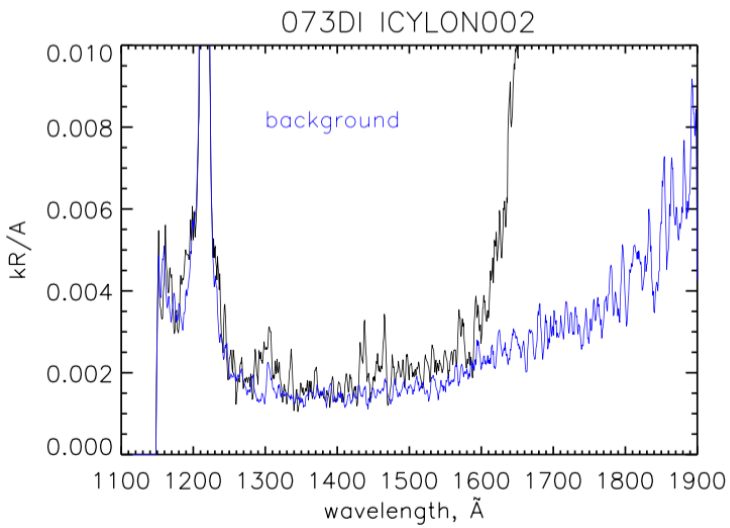
Latitude=7.6°S

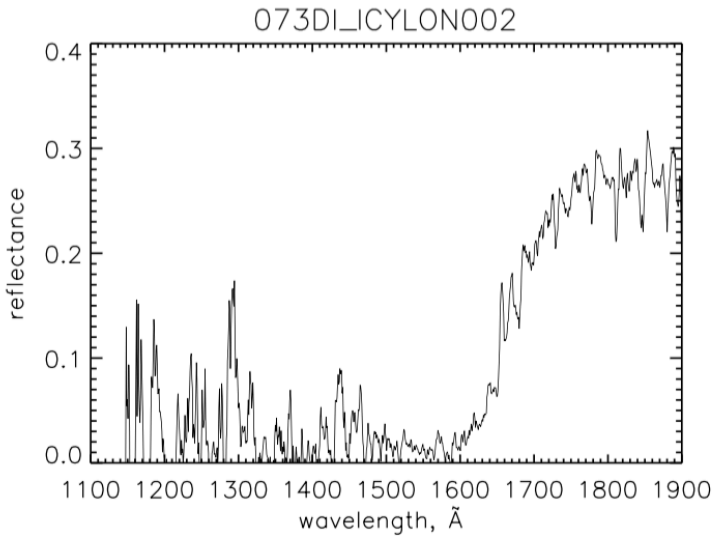
Phase= 1.5°





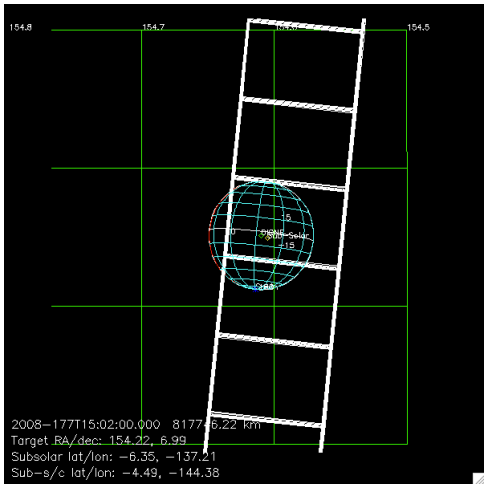


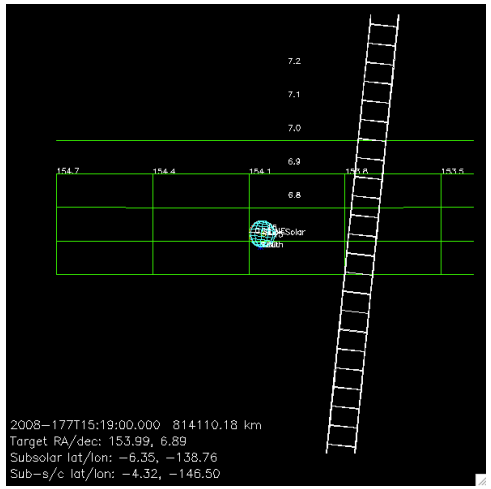


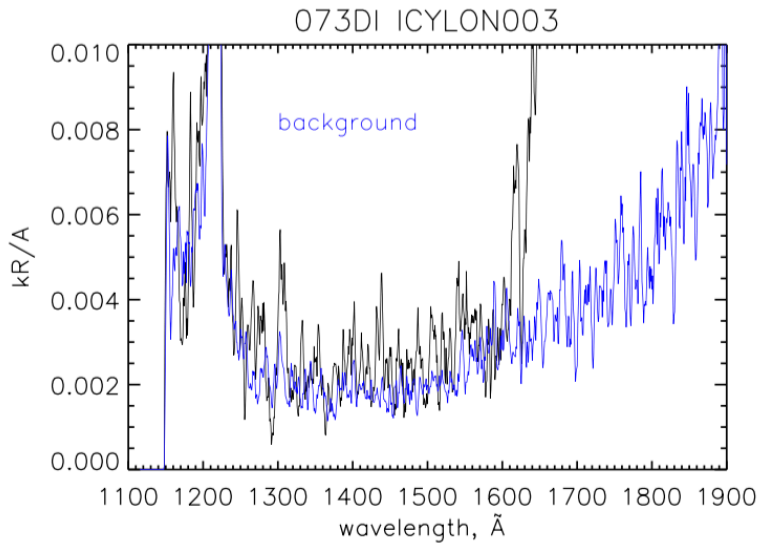


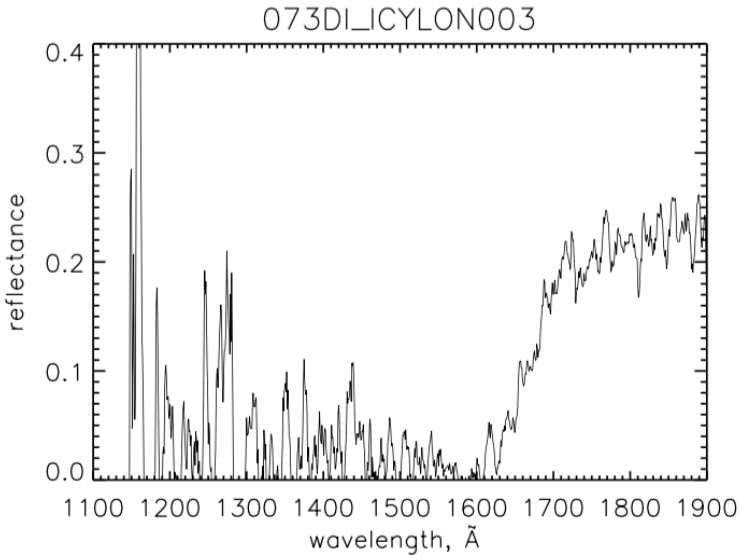
ISS_073DI_LOWPHASEX001_PRIME

073DI_ICYLON003_ISS
2008-177T15:03
Alt= 815,878 km
Longitude= 145°W
Latitude=4.4°S
Phase= 7.6°



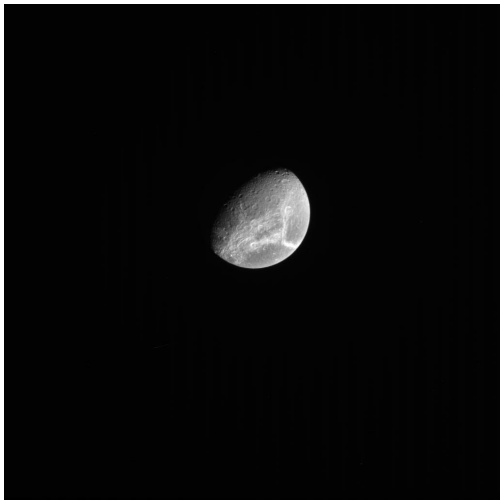


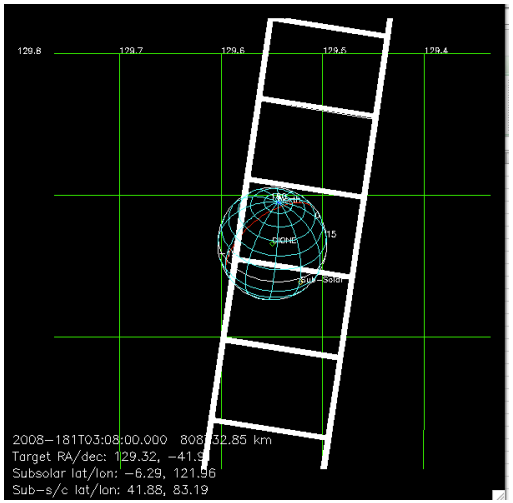


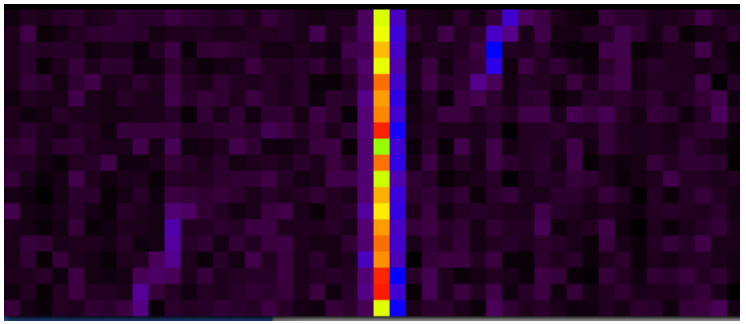


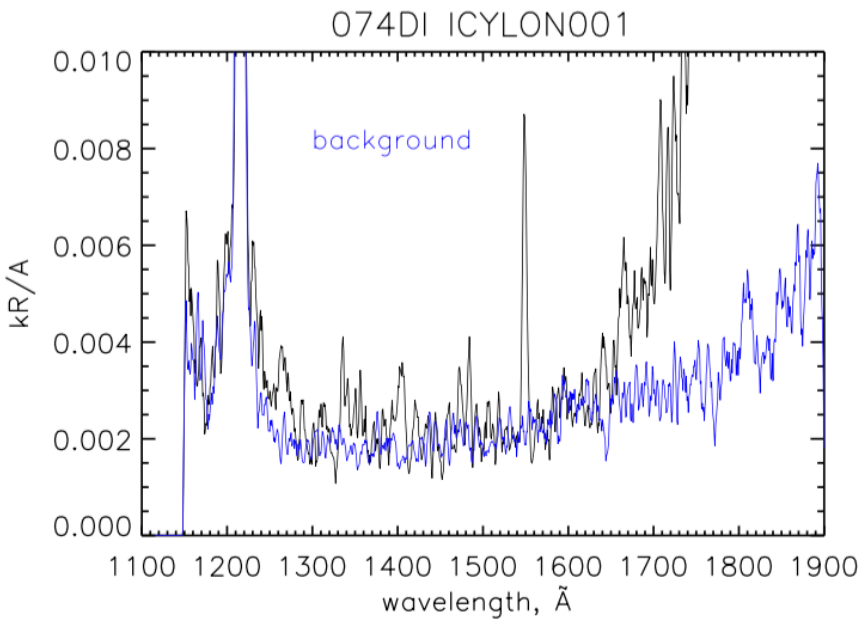
ISS_074DI_RHTEHILAT001_PRIME

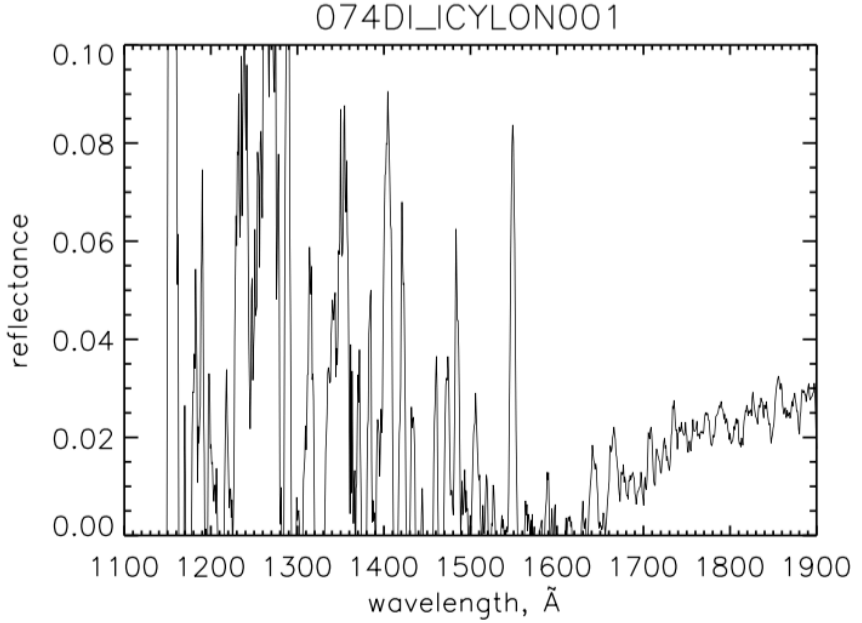
074DI_ICYLON001_ISS
2008-181T03:09
Alt= 811,738 km
Longitude= 278°W
Latitude=41.7°N
Phase= 59.6°



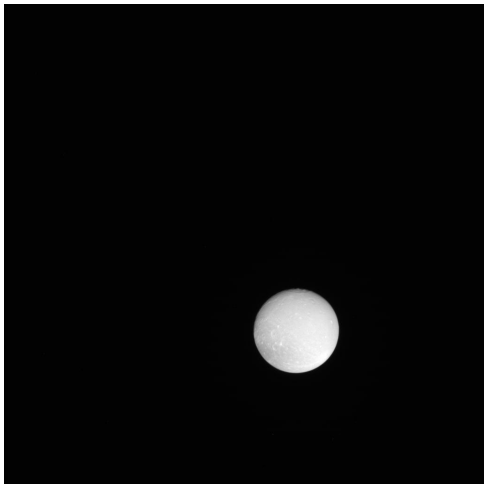


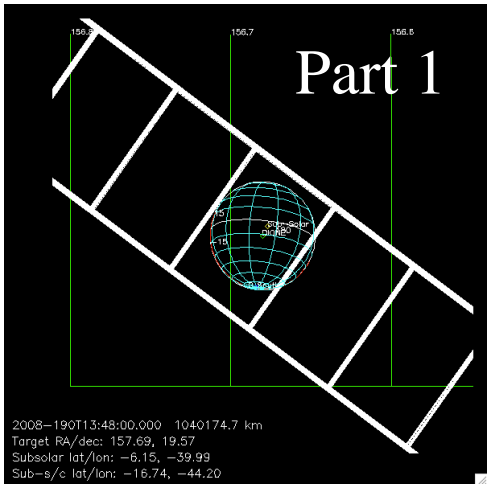


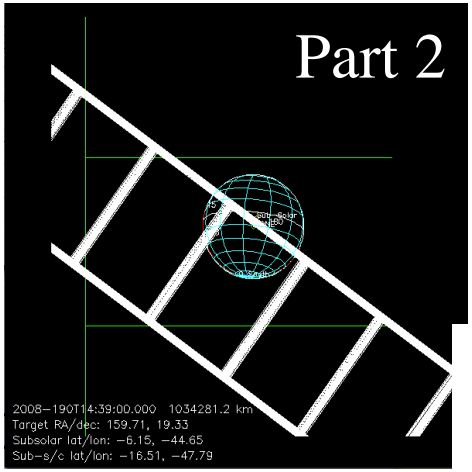


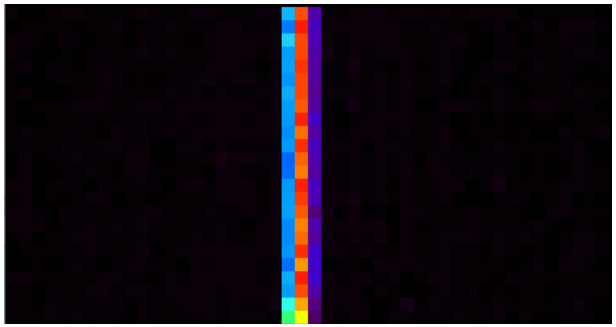


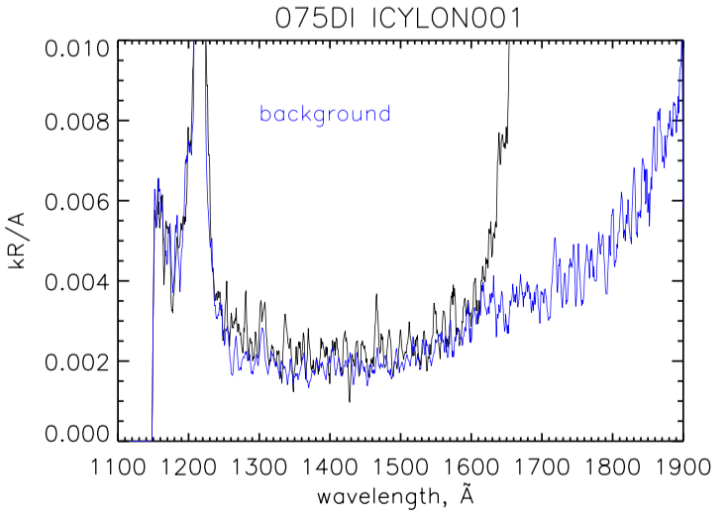
075DI_ICYLON001_PRIME
2008-190T13:49
Alt= 1,037,114 km
Longitude= 46°W
Latitude=16.6°S
Phase= 11.1°

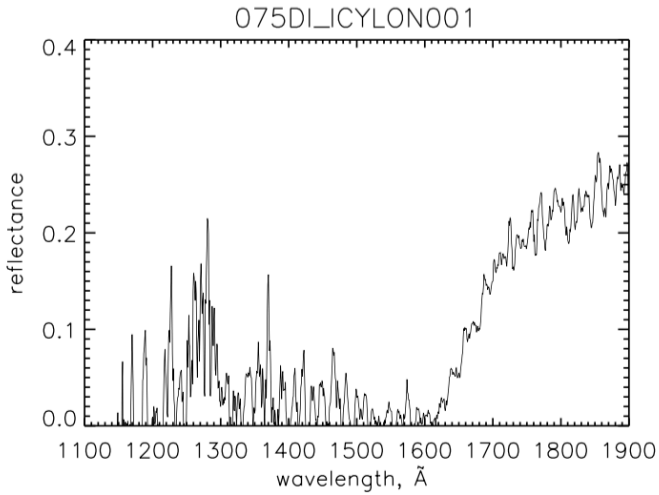




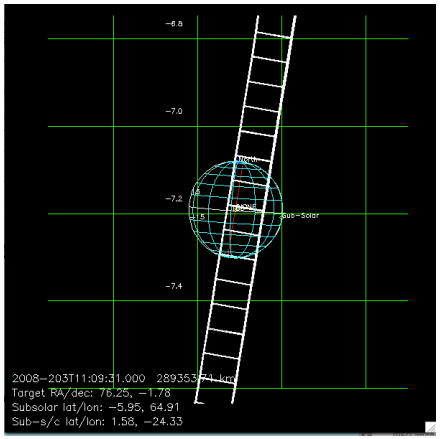






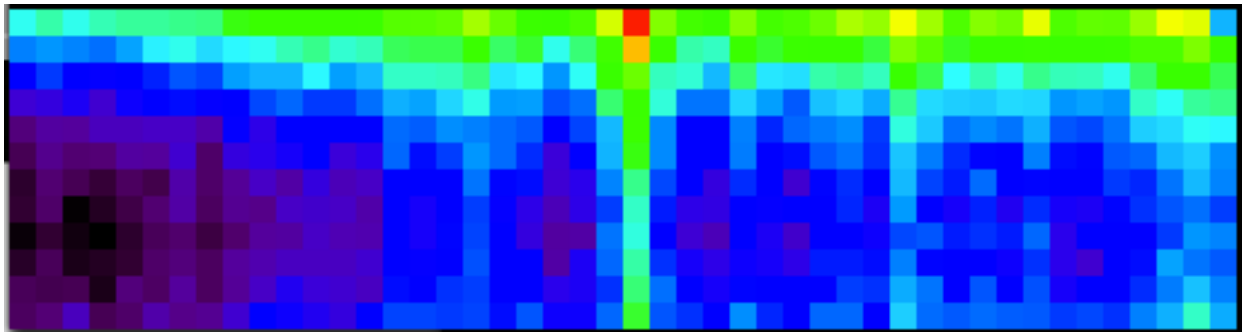


VIMS_077DI_ORSDIONE001_PRIME



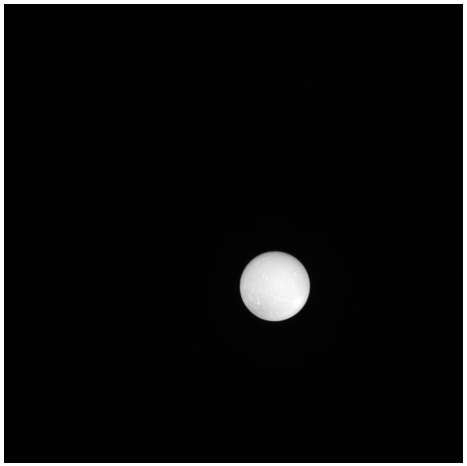
077DI_ICYLON001_VIMS
2008-203T11:10
Alt= 289,807 km
Longitude= 24°W
Latitude=1°S
Phase= 88°

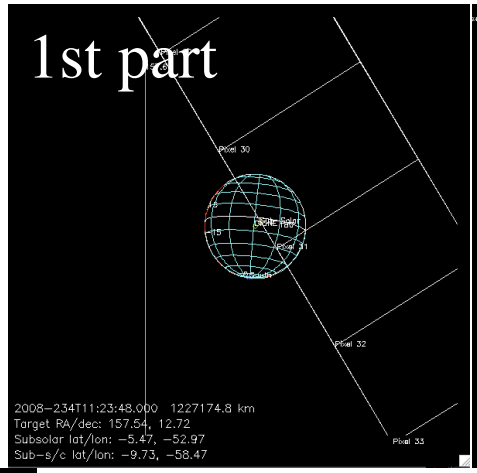
Weird geometry … Dione passes behind rings

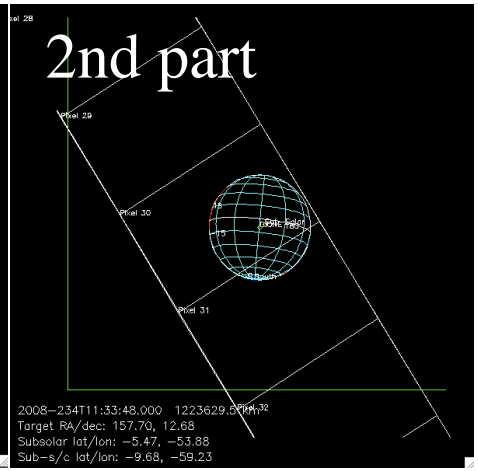


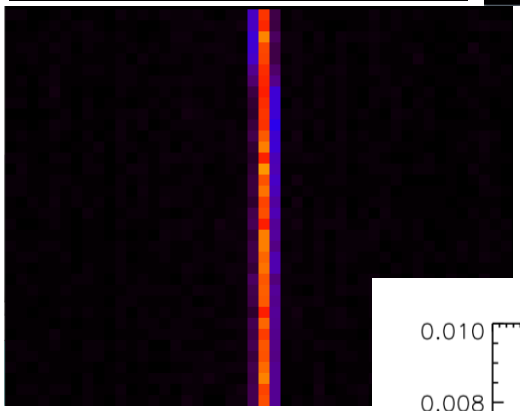
ISS_081DI_098W003PH001

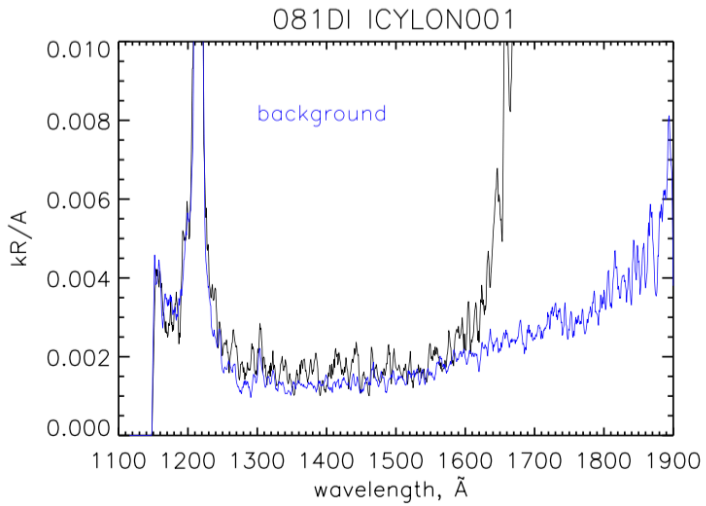
081DI_ICYLON001_ISS
2008-234T11:24
Alt= 1,210,161 km
Longitude= 62°W
Latitude=9.5°S
Phase= 6.27°

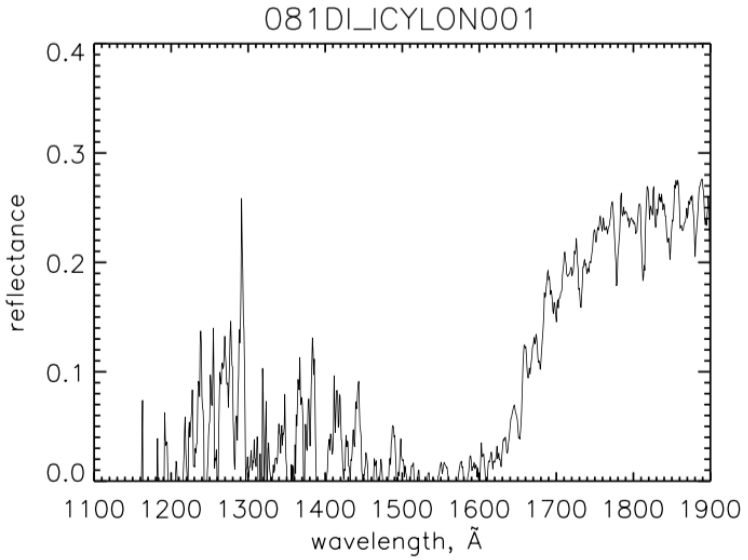




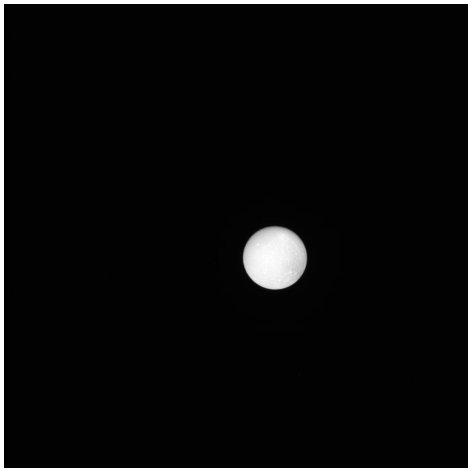


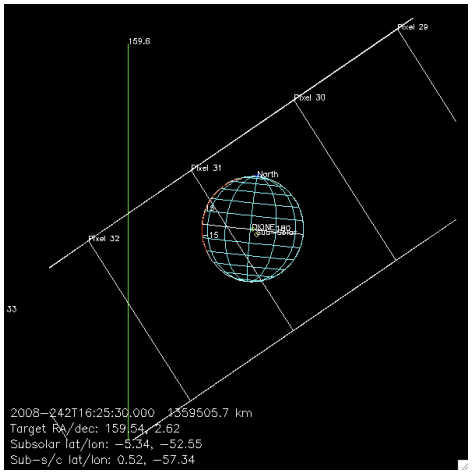


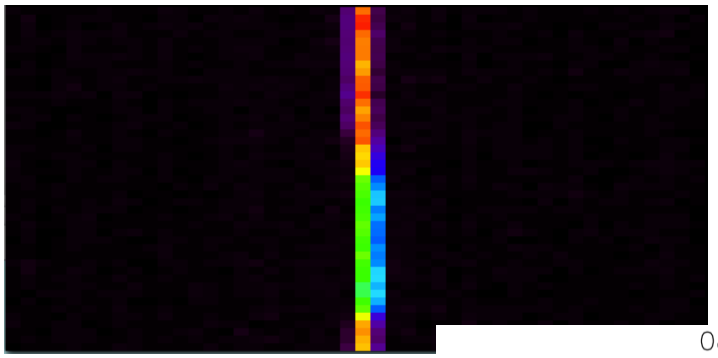




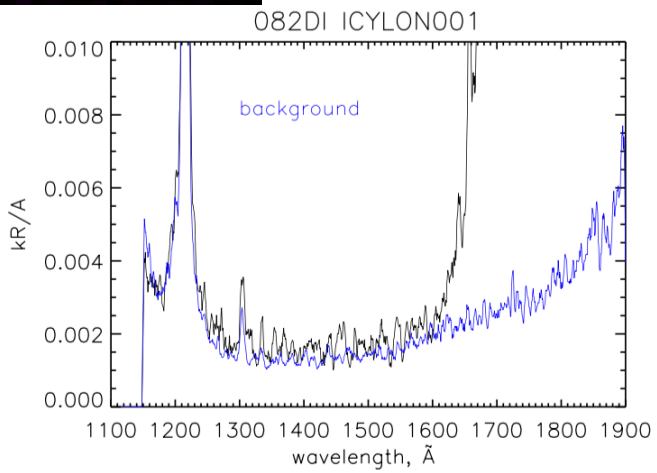
ISS_082DI_GLOMAP001

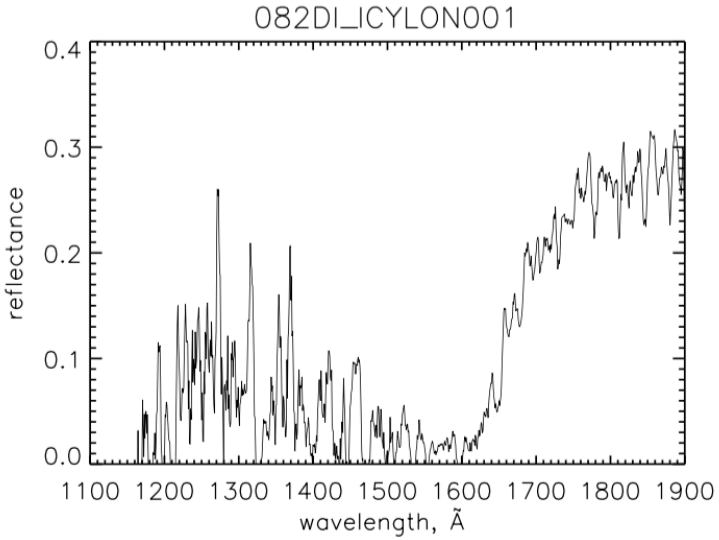




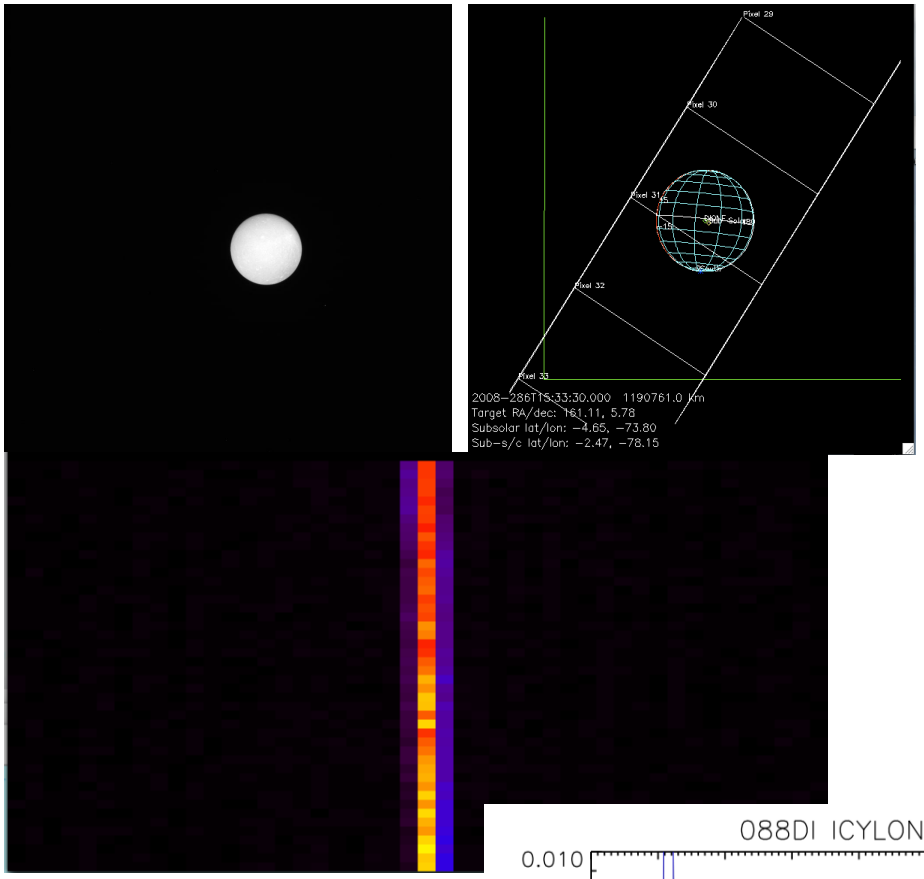


082DI_ICYLON001_ISS
2008-242T16:26
Alt= 1,339,074 km
Longitude= 61°W
Latitude=0.89°N
Phase= 7.5°

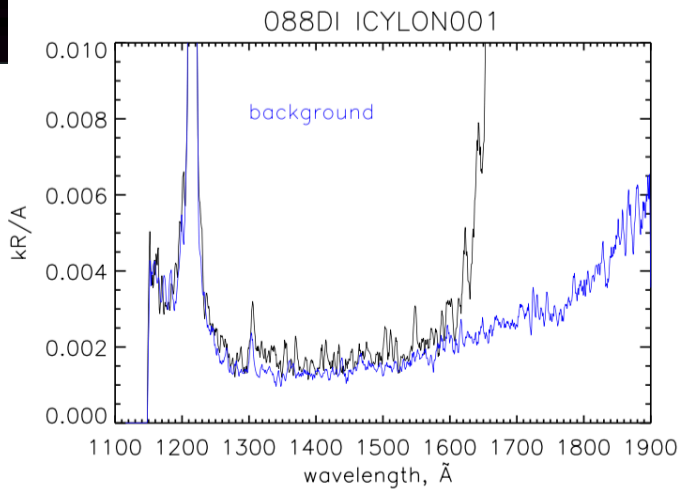


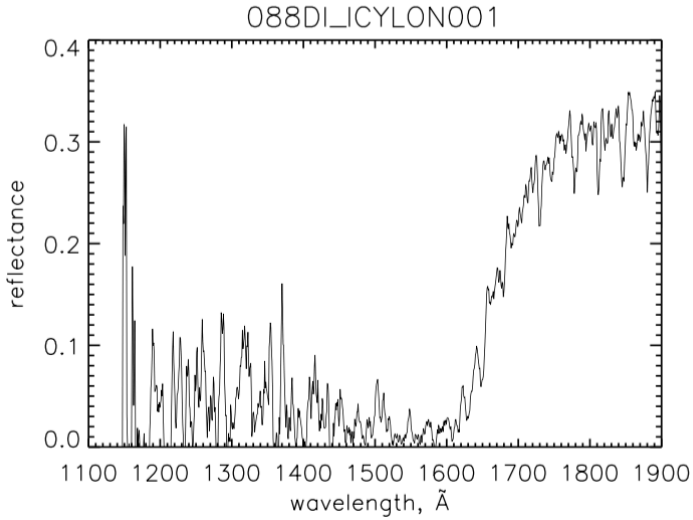


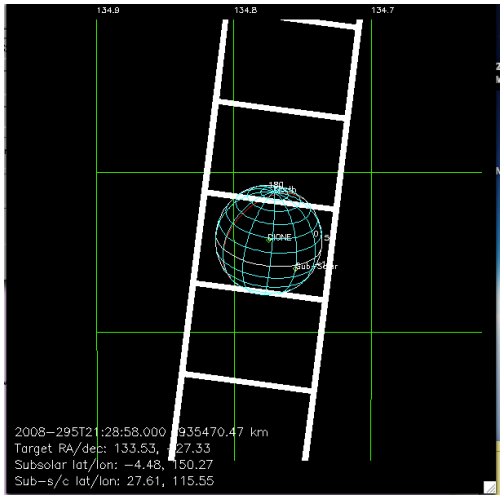
ISS_088DI_081W005PH001

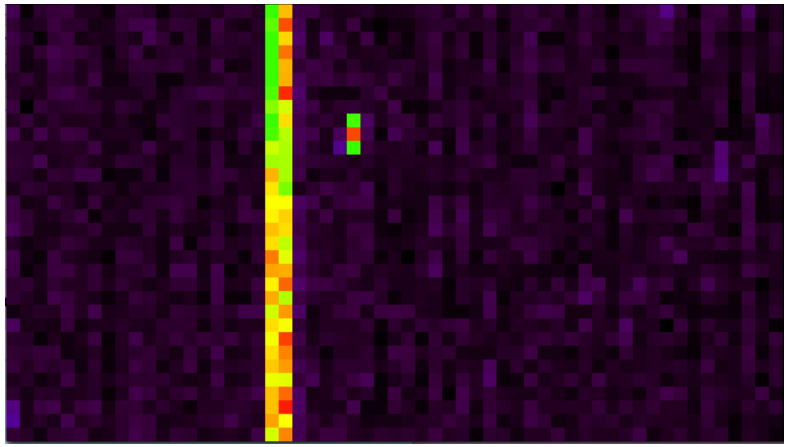


088DI_ICYLON001_ISS
2008-286T15:34
Alt= 1,167,372 km
Longitude= 82°W
Latitude=2.1°S
Phase= 4.8°









090DI_ICYSTARE001_PRIME

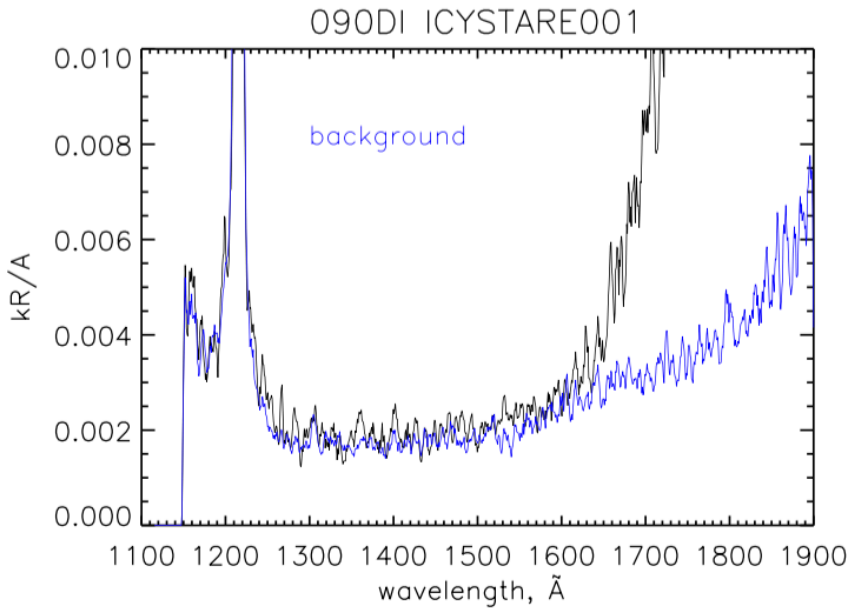
2008-295T21:30

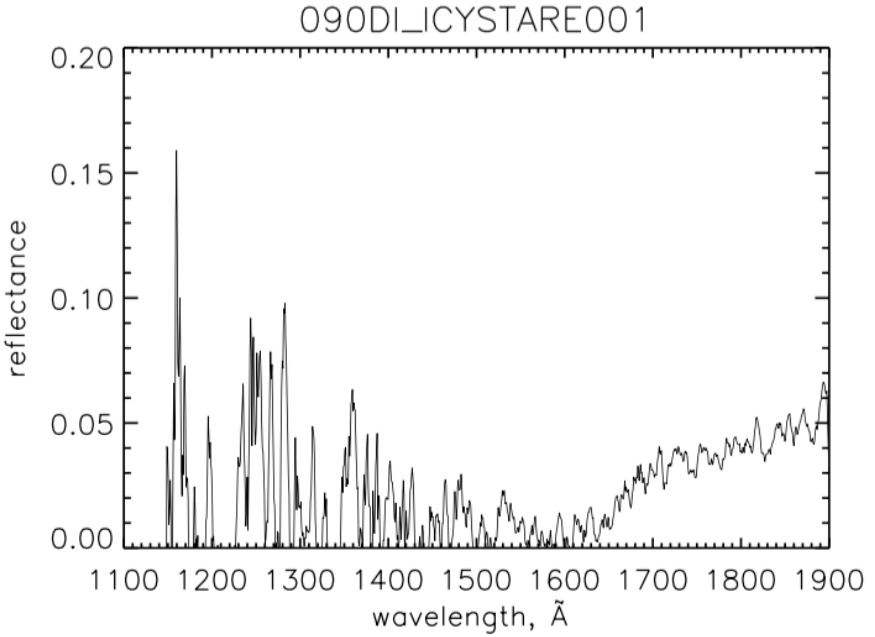
Alt=951,276 km

Longitude=249°W

Latitude=27.5°N

Phase=46.8°

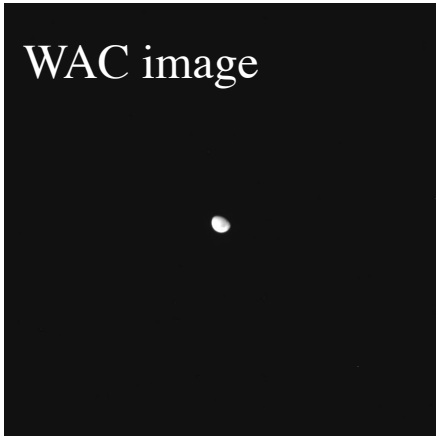


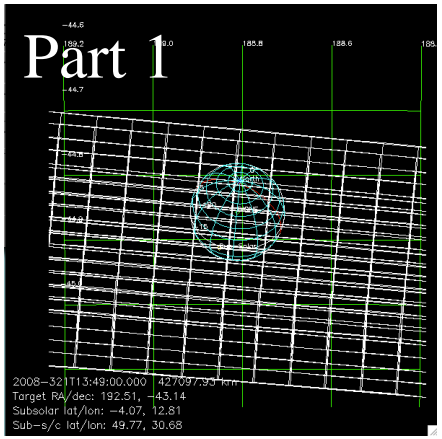


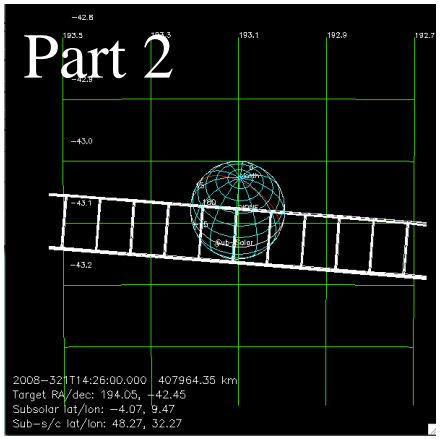
093DI_ICYECL001_CIRS

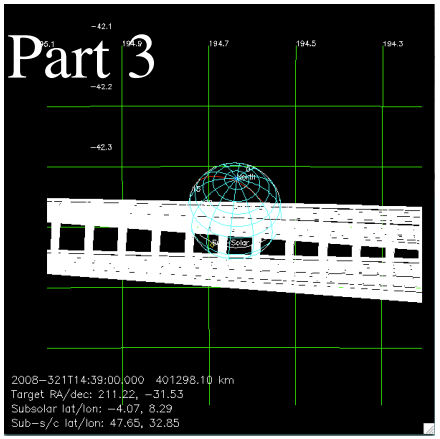
2008-321T13:50
Alt=418,247 km
Longitude=329°W
Latitude=49°N
Phase=56°

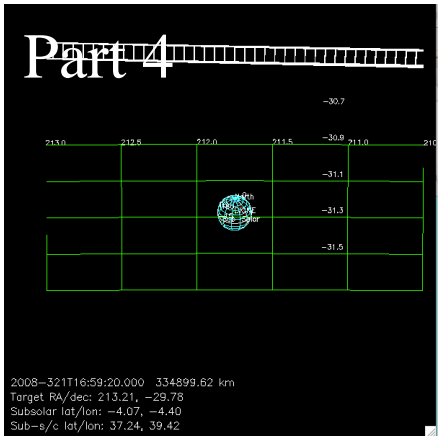
Dione in eclipse:
14:47:32-17:43:15
(during parts 3-5)

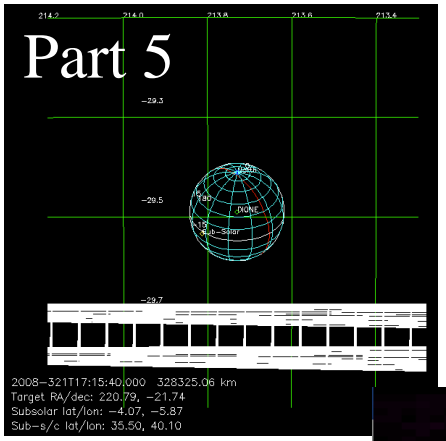




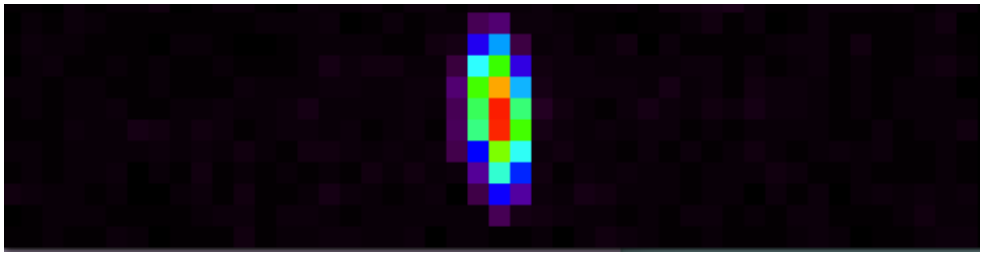




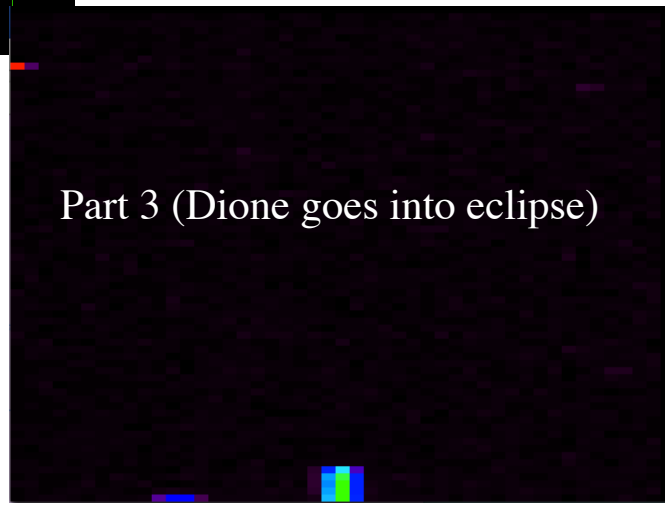




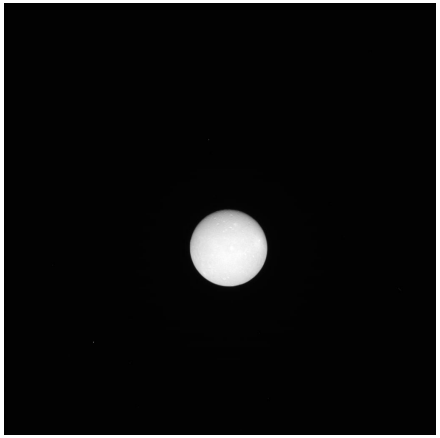
Part 1

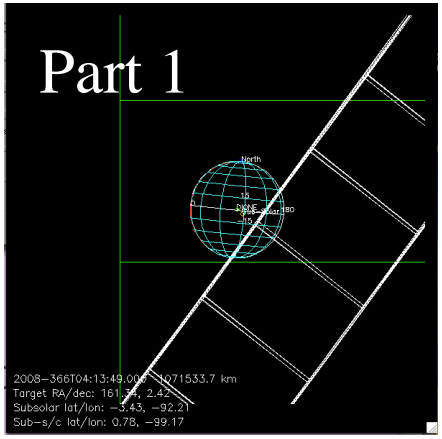


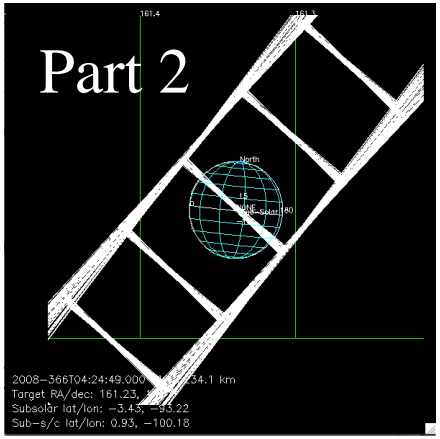
Part 3



ISS_099DI_088W008PH001







099DI_ICYLON001_ISS

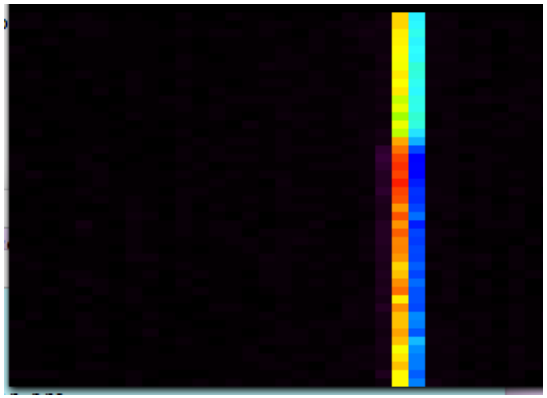
2008-366T04:14

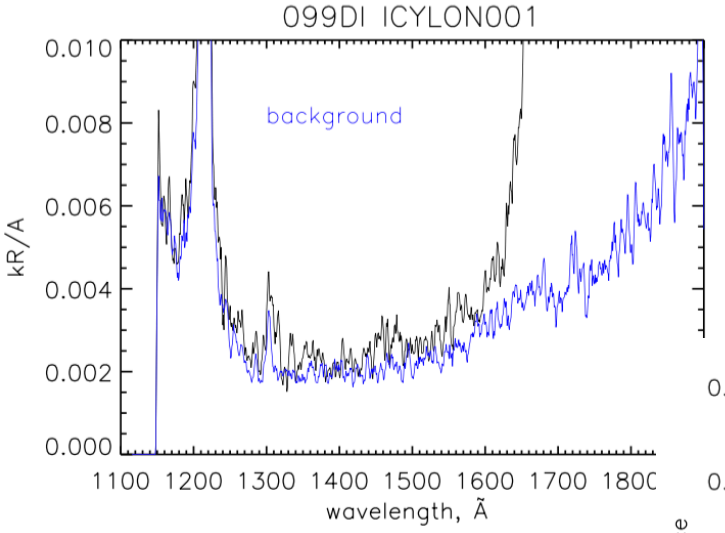
Alt= 1,039,735 km

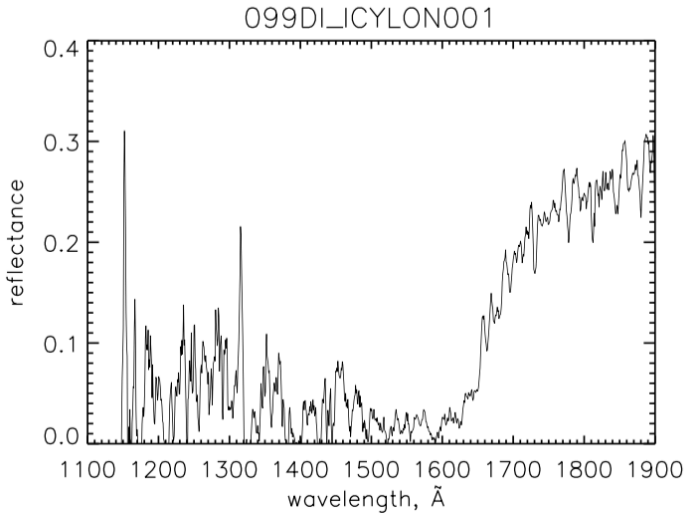
Longitude=104°W

Latitude=1.5°N

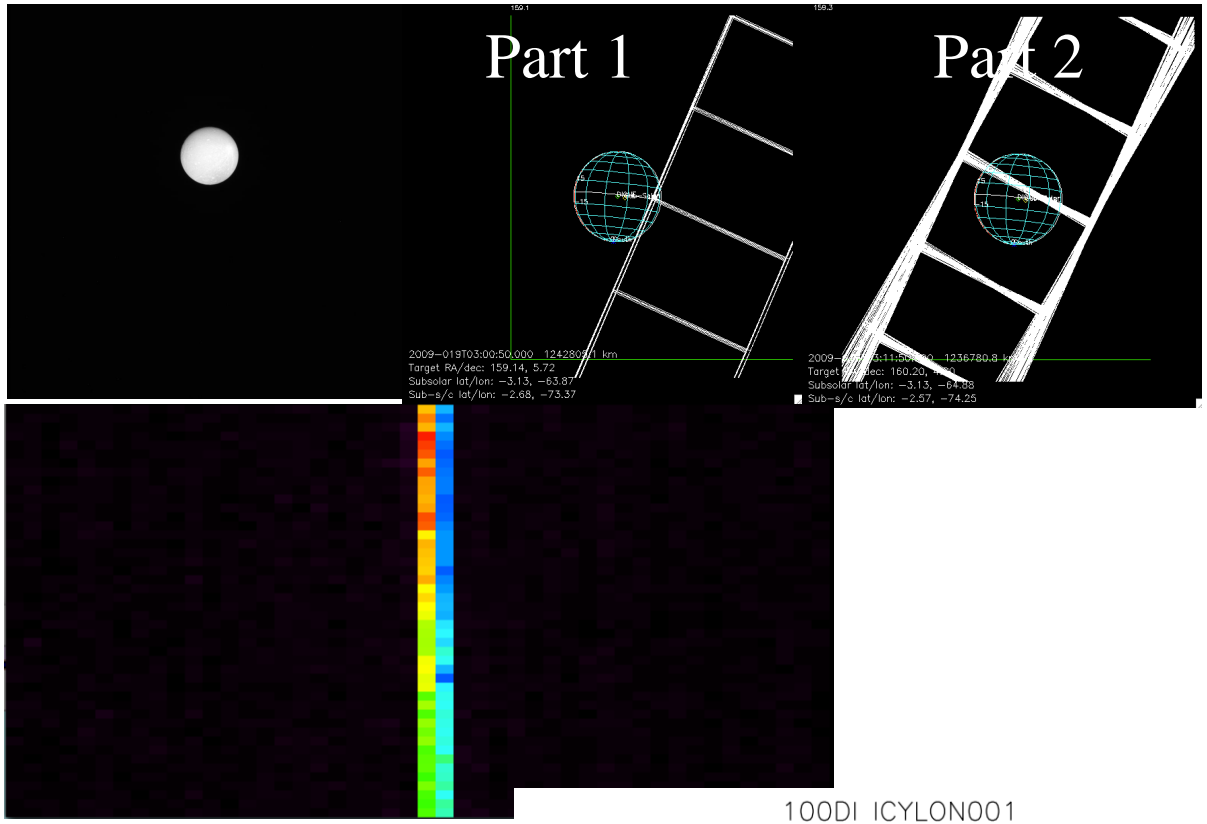
Phase= 8.6°







ISS_100DI_080W009PH001



100DI_ICYLON001_ISS

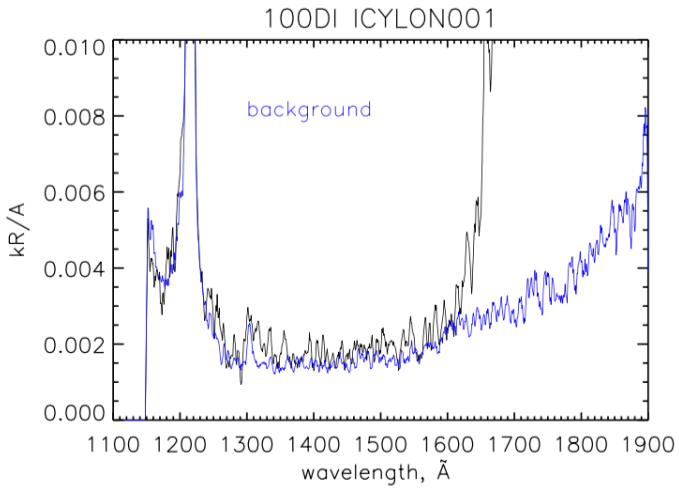
2009-019T03:01

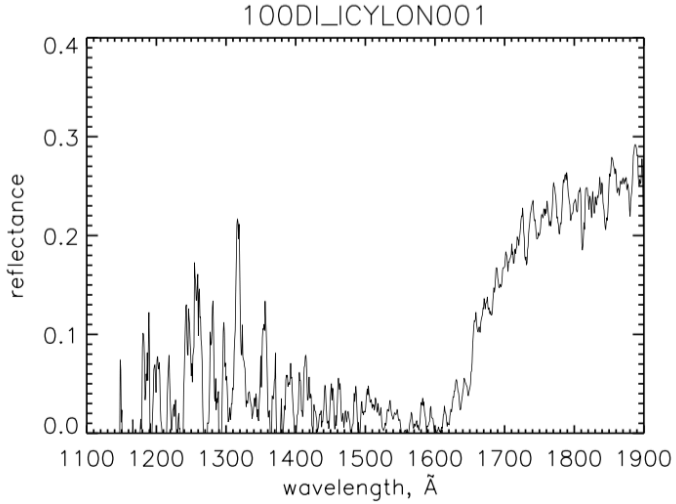
Alt= 1,211,184 km

Longitude= 78°W

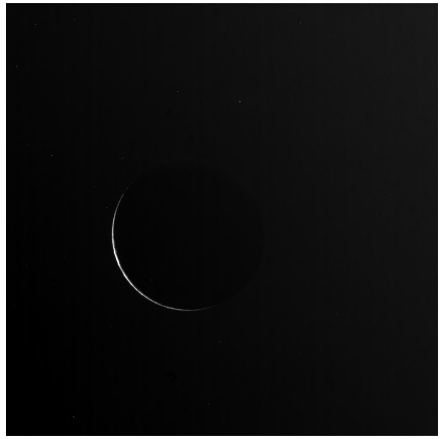
Latitude=2.1°S

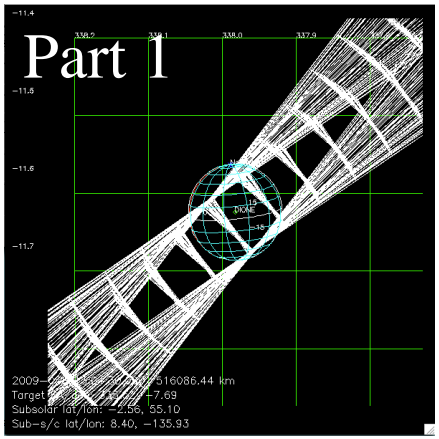
Phase= 8.9°

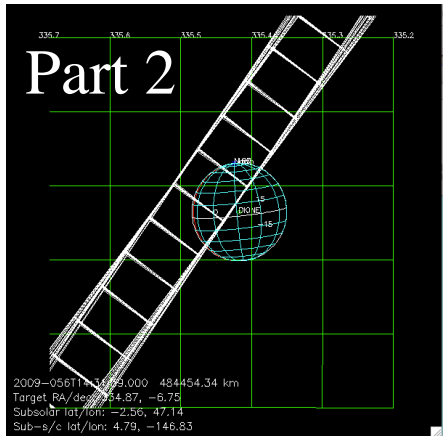




ISS_104DI_160W160PH001



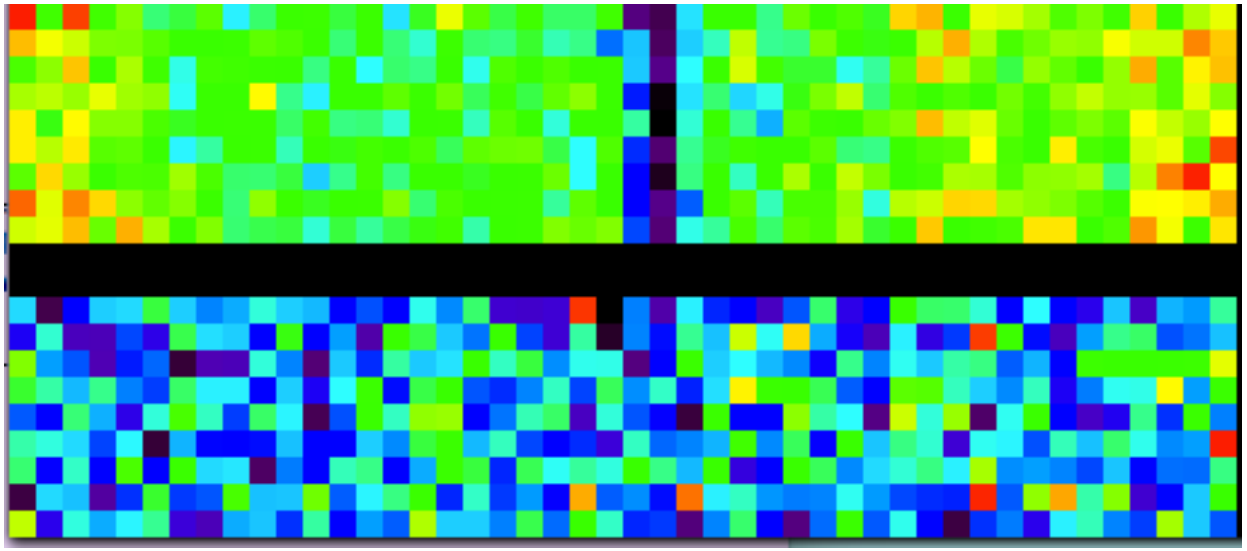




104DI_ICYLON001_ISS
2009-056T13:05
Alt= 499,656 km
Longitude= 141°W
Latitude=6.7°N
Phase= 167°

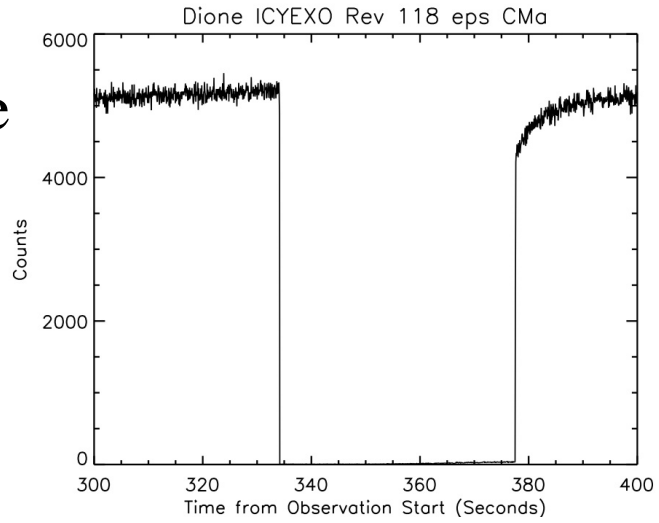
Part 2

Ly-a

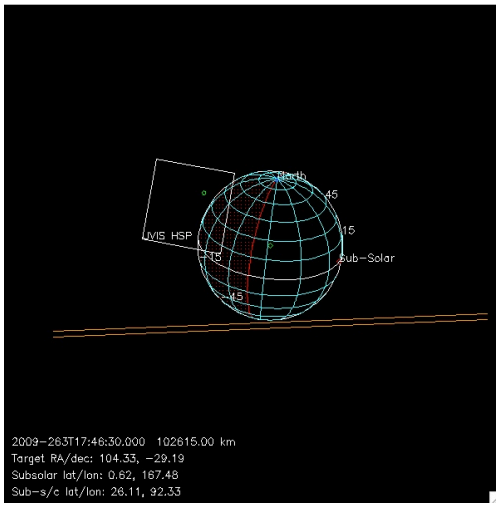


Long waves (low SNR)

HSP profile

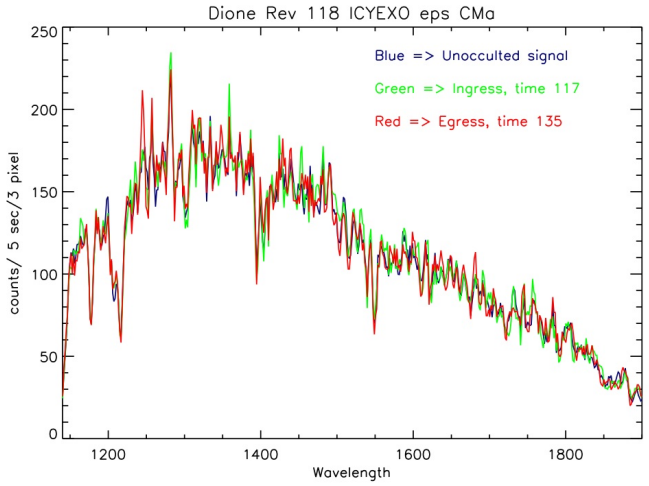


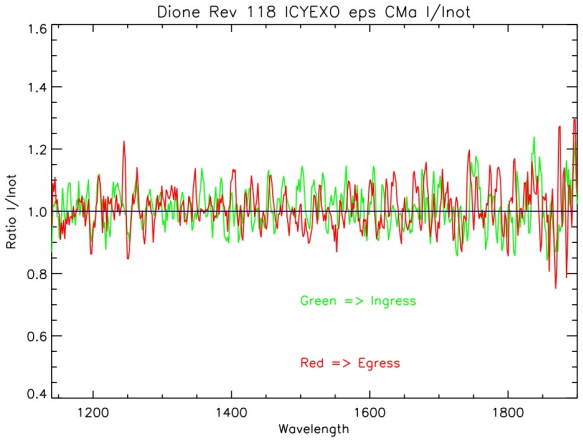
UVIS_0118DI_ICYEXO001_PRIME
2009-263T17:36
Ingress lat/lon: 34.7 / 17.2
Egress lat/lon: 51.0 / 140.5
Star: Epsilon Canis Majoris



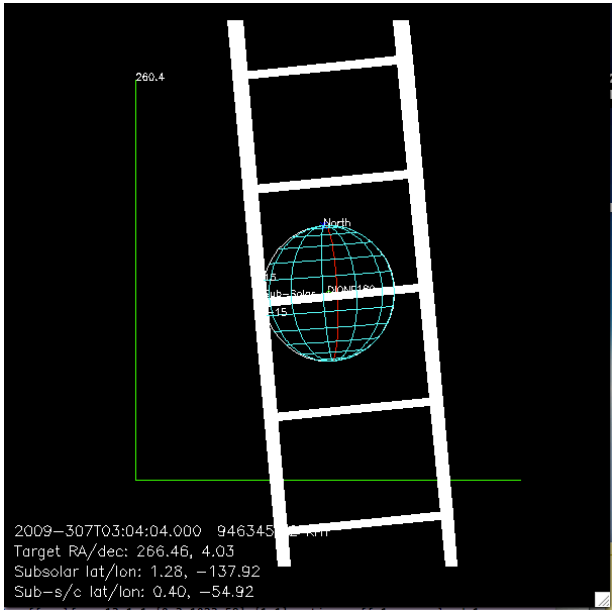
Ingress

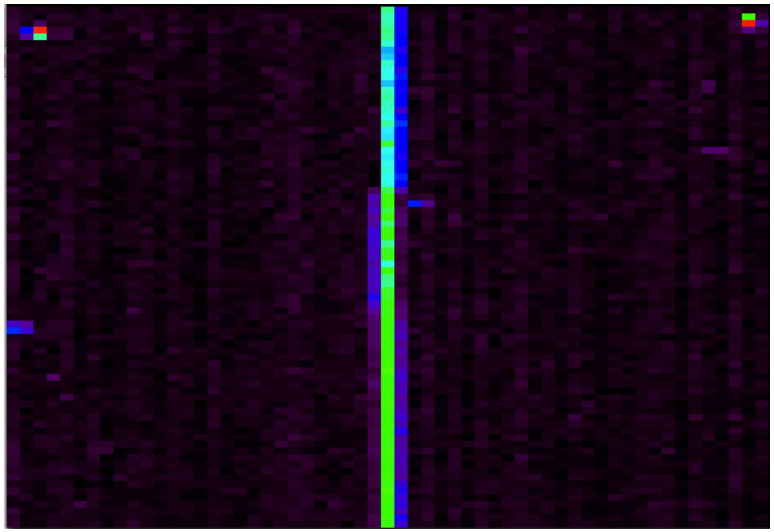
Spectra of I, I_0 (counts per integration period vs wavelength)





Spectrum of I/I_0





120DI_ICYSTARE001_PRIME

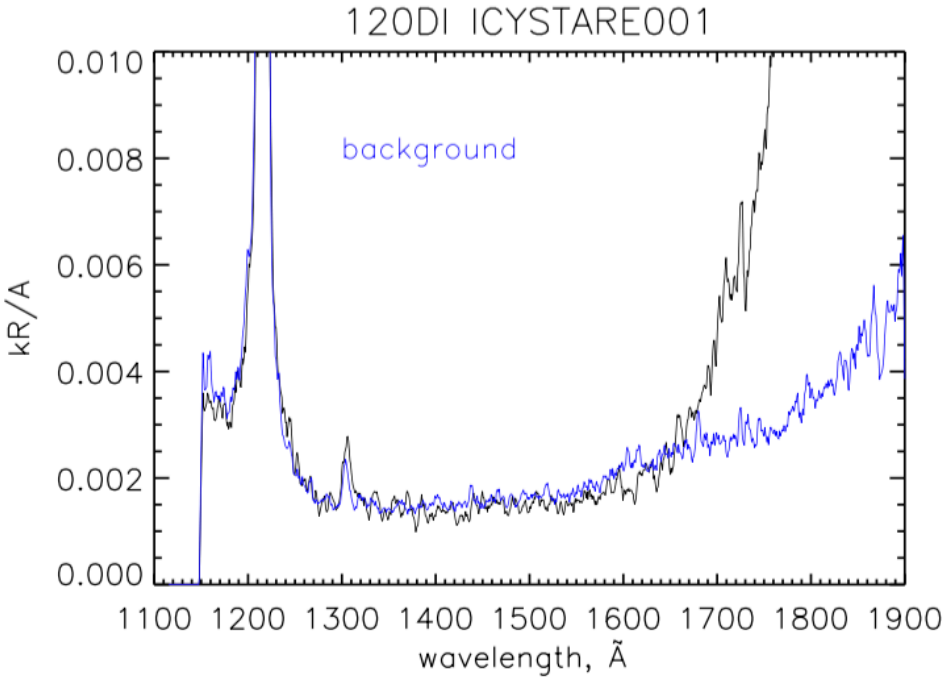
2009-307T03:06

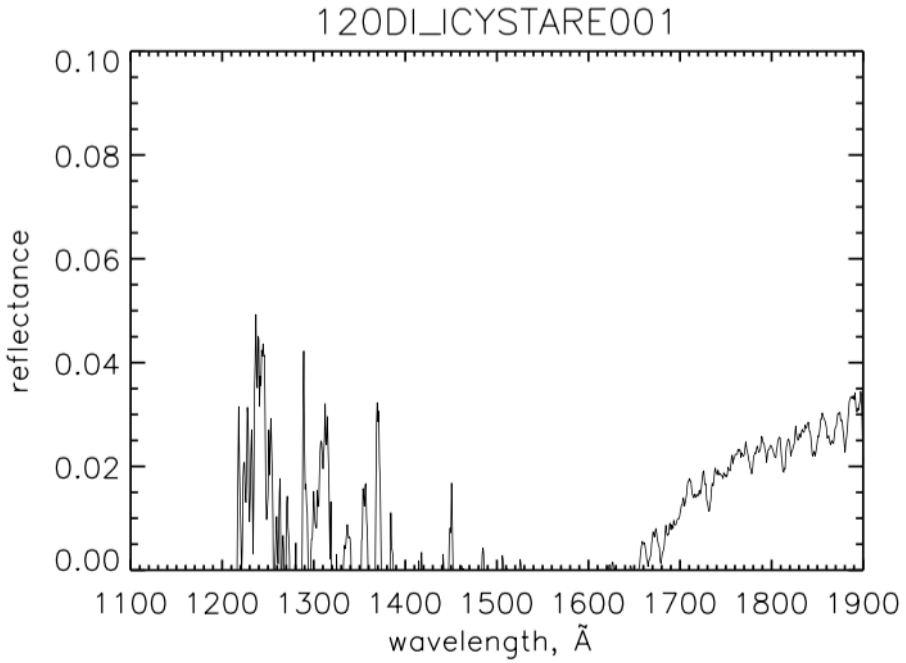
Alt= 936,400 km

Longitude= 65°W

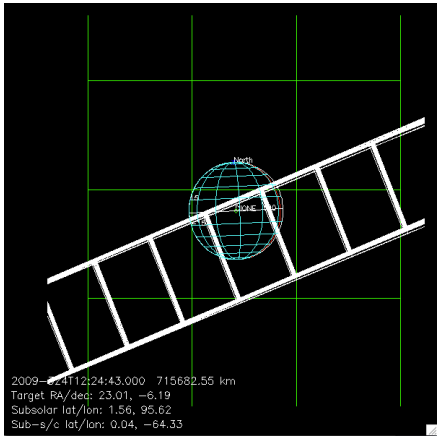
Latitude=0.45°N

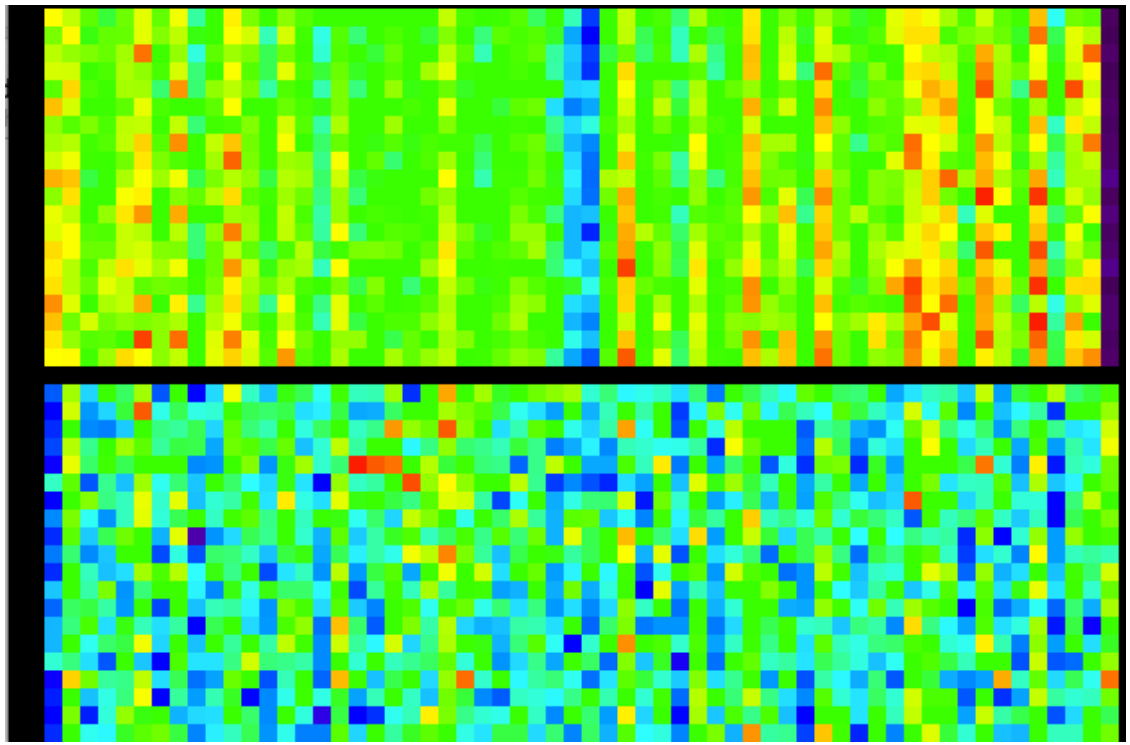
Phase= 85.9°





121DI_ICYLON001_PRIME
2009-324T12:26
Alt= 686,912 km
Longitude= 65°W
Latitude=0°N
Phase= 157.6°



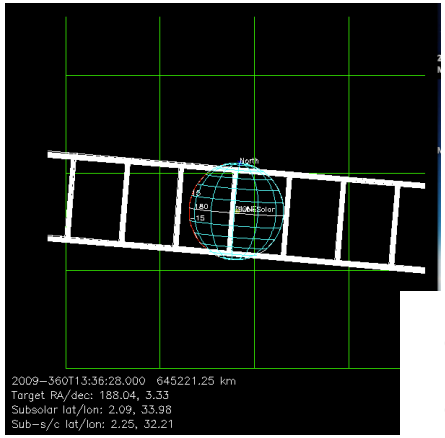


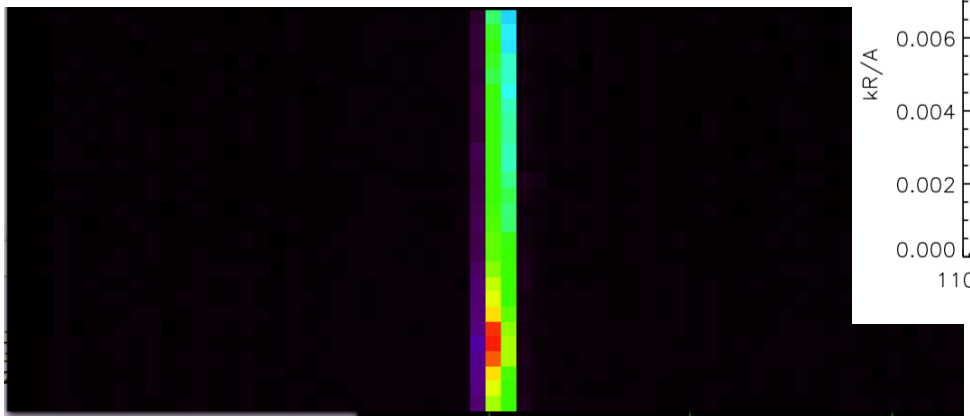
Ly-a

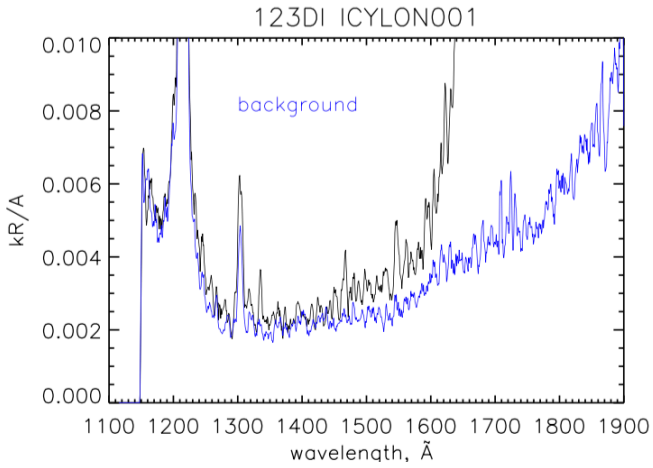
Long waves (low SNR)

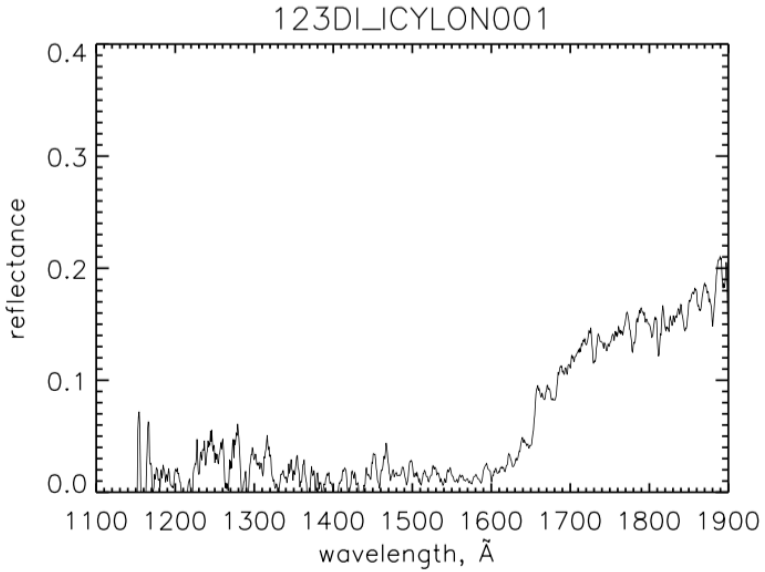
VIMS_123DI_327W000PH001_PRIME

123DI_ICYLON001_VIMS
2009-360T13:38
Alt= 674,031 km
Longitude= 327°W
Latitude=2°N
Phase= 4°









CIRS_125DI_FP3DAYMAP001_PRIME

125DI_ICYMAP001_CIRS

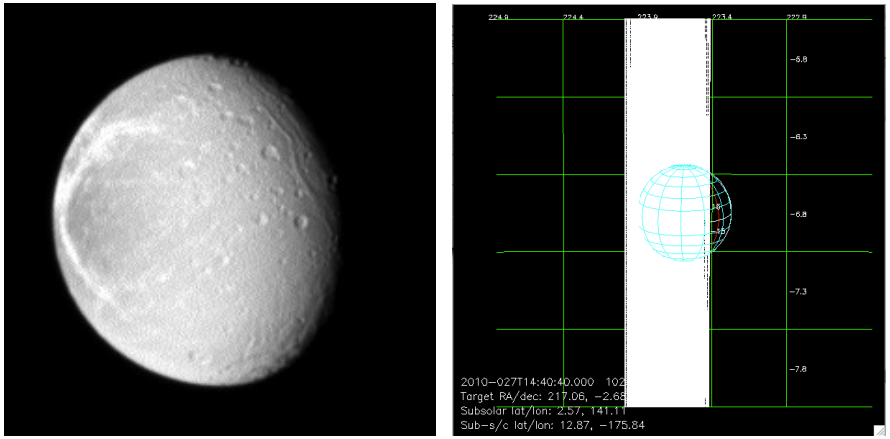
2010-027T14:40

Alt= 121,875 km

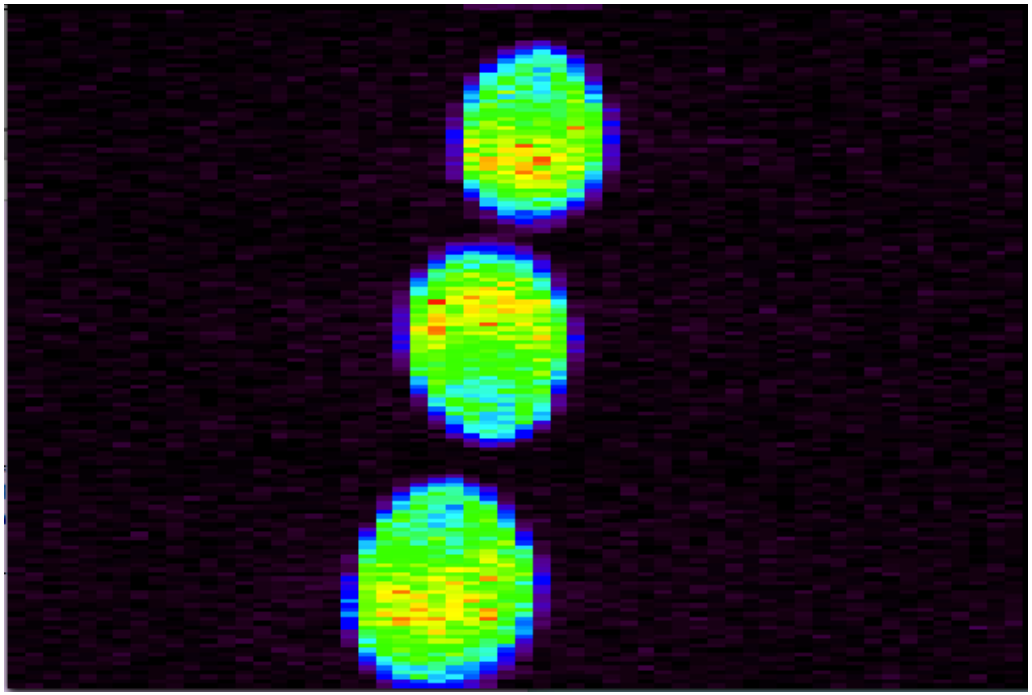
Longitude= 183°W

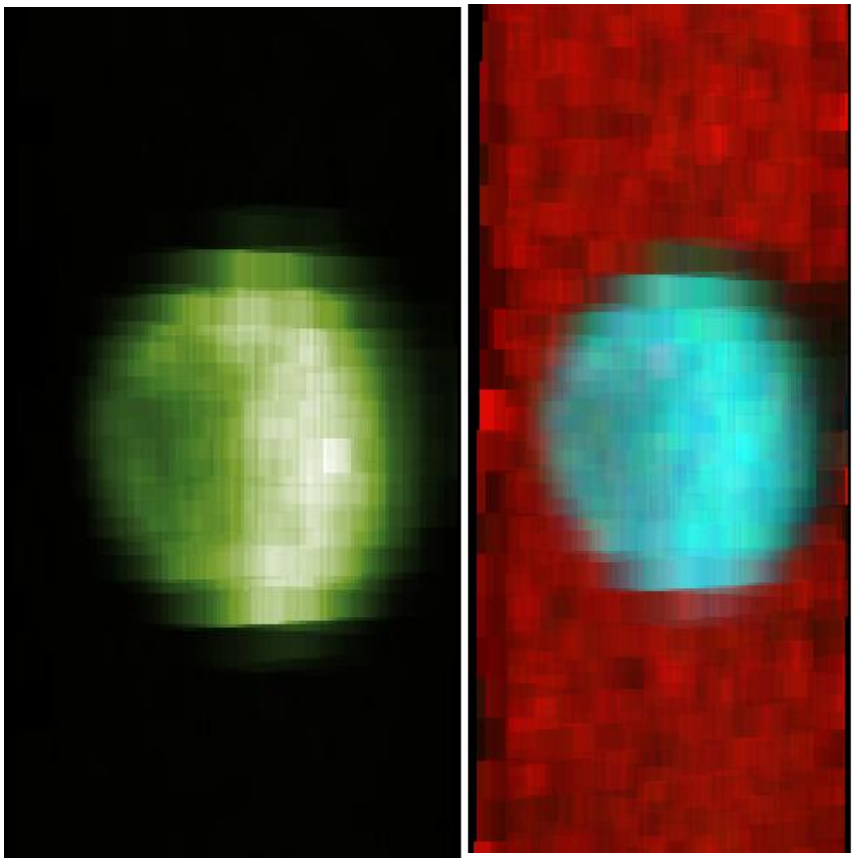
Latitude=10.8°N

Phase= 40.2°



WAC image





CIRS_129DI_FP1DRKMAP001_PRIME

129DI_ICYECL001_CIRS

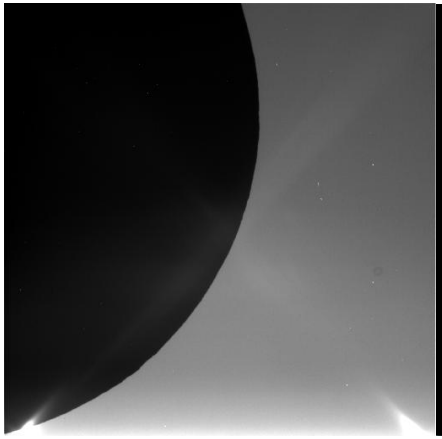
2010-097T01:48

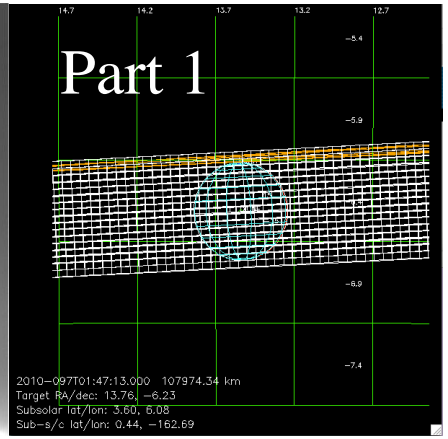
Alt= 99,313 km

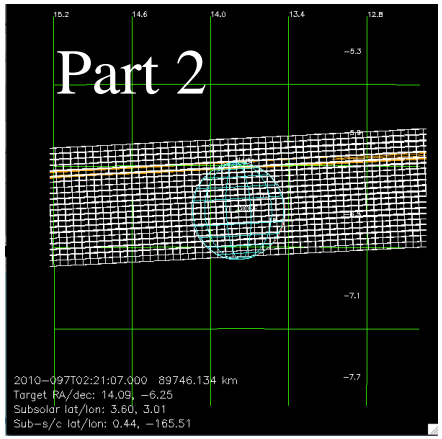
Longitude= 164°W

Latitude=0.4°N

Phase= 168°

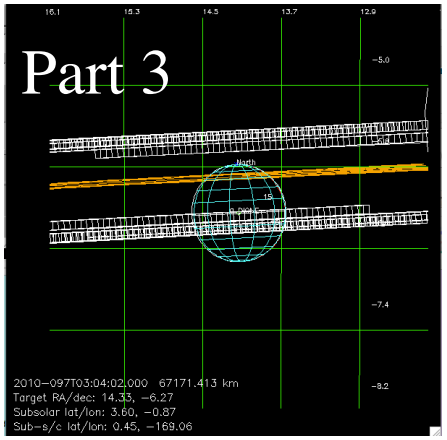


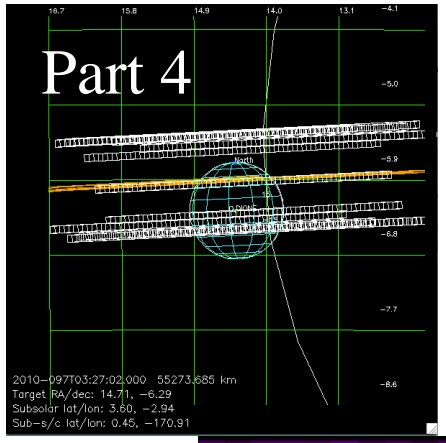


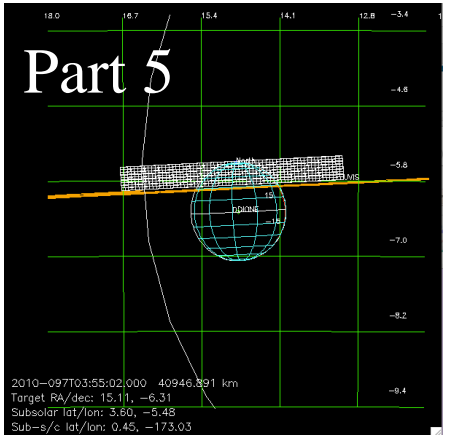


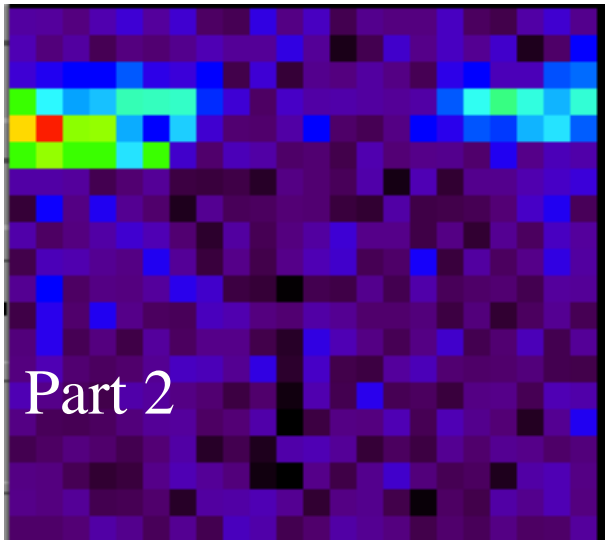
Dione is in eclipse during all parts:

Eclipse 01:27:56-04:32:33



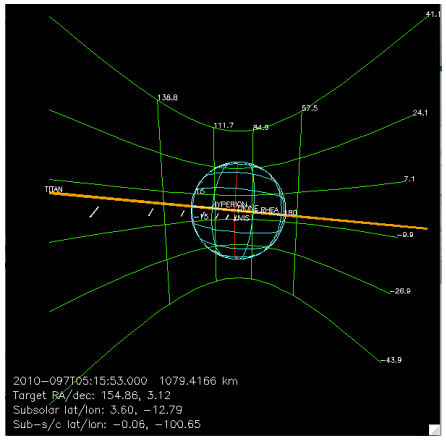






CAPS_129DI_DIONEPTG001_PRIME

129DI_ICYMAP001_CAPS
2010-097T05:16
Alt= 735 km
Longitude= 66°W
Latitude=0.3°S
Phase= 53.7°



While pointing for CAPS, Dione flies through ORS boresights at C/A

129DI_ICYMAP002_PRIME

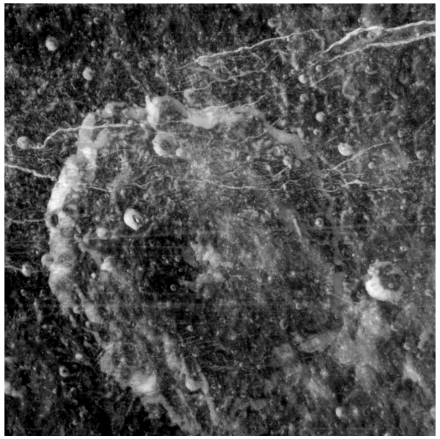
2010-097T05:58

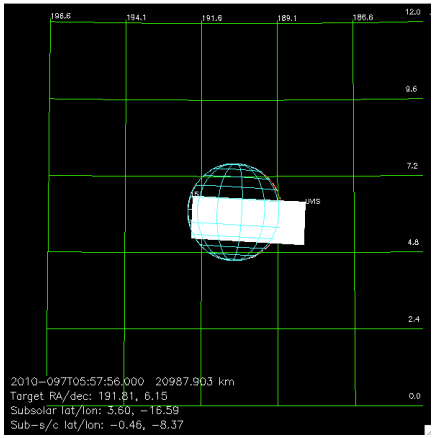
Alt= 28377 km

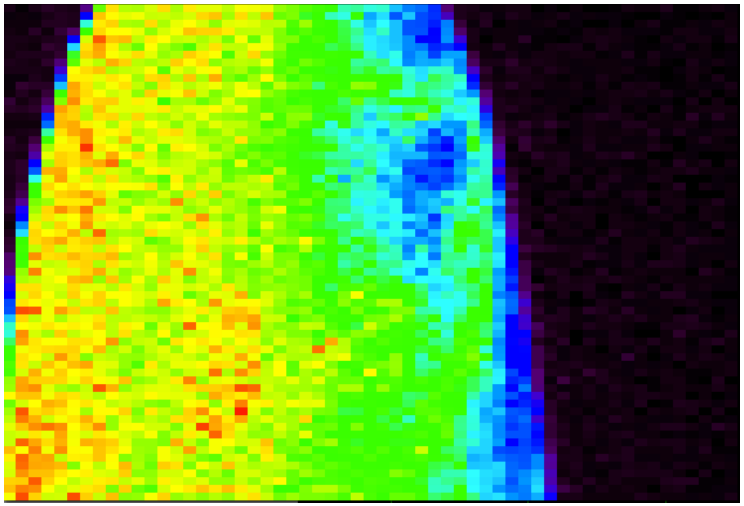
Longitude= 9°W

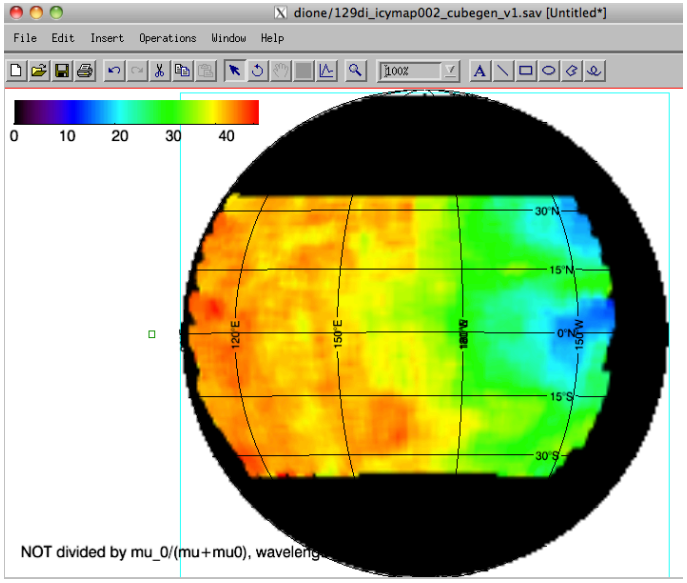
Latitude=0.5°S

Phase= 10°





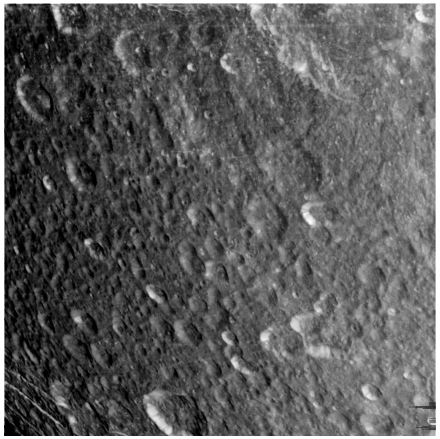


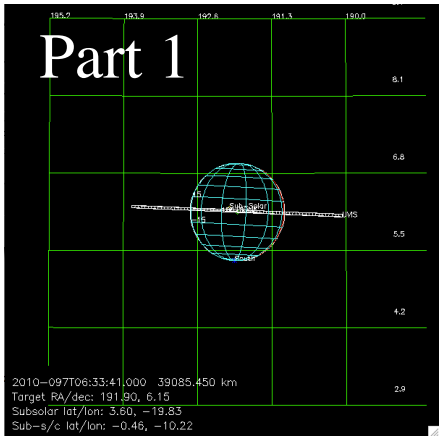


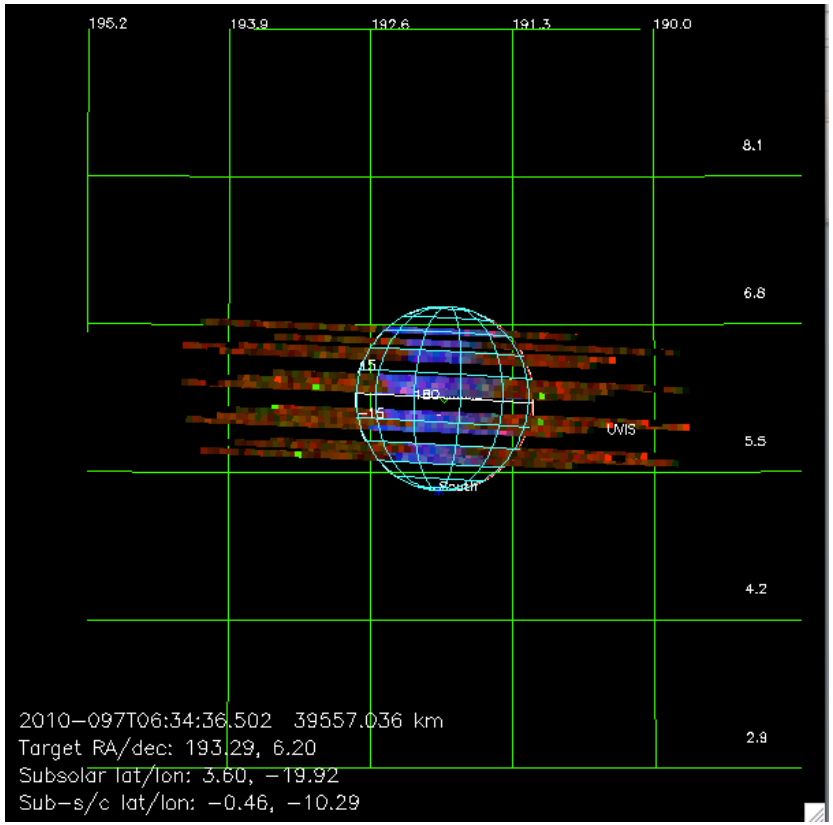
ISS_129DI_REGMAP001_PRIME

21-part

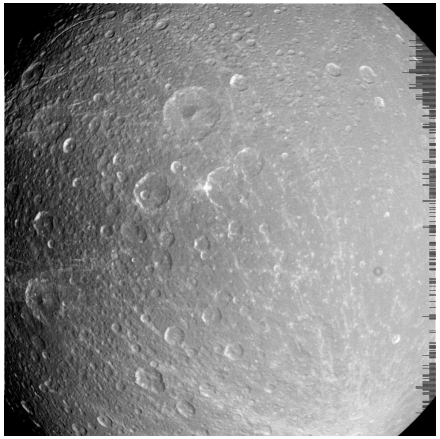
129DI_ICYMAP003_ISS
2010-097T06:33
Alt= 38,522 km
Longitude= 10°W
Latitude=0.45°S
Phase= 10.5°

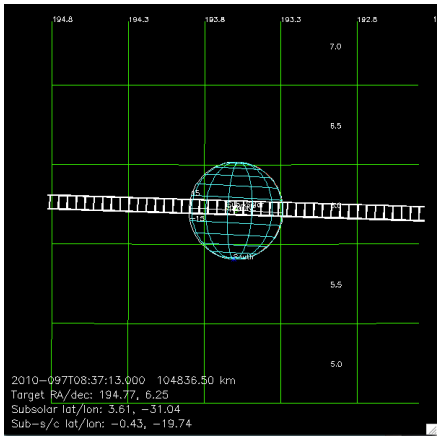




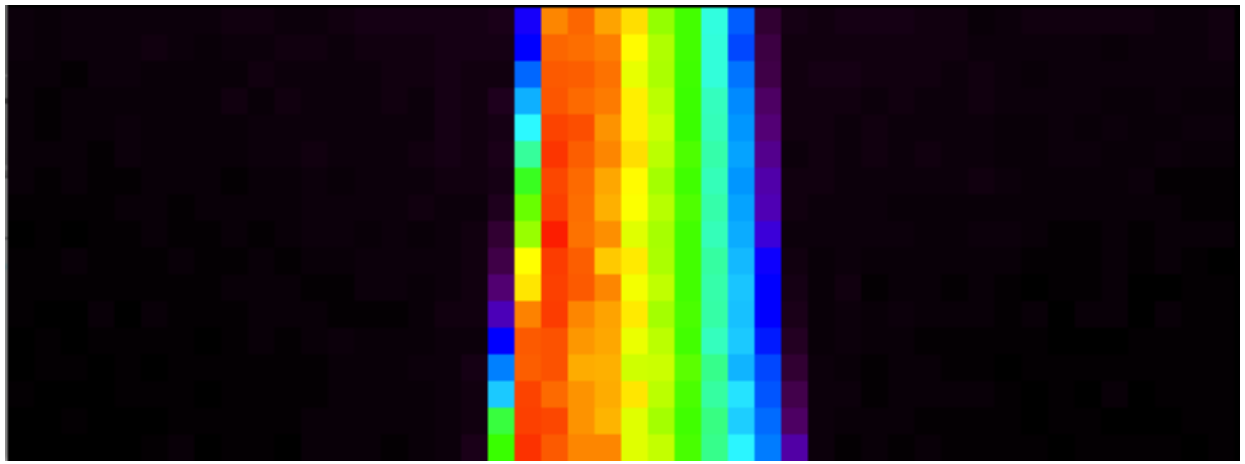


VIMS_129DI_DIONE001_PRIME



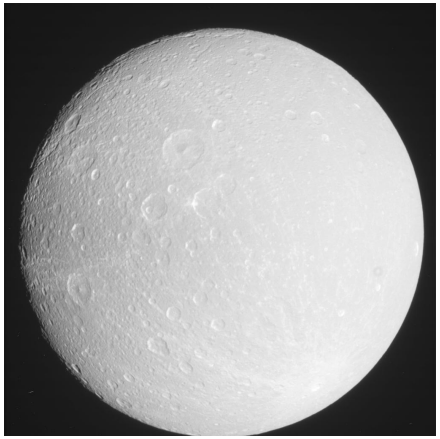


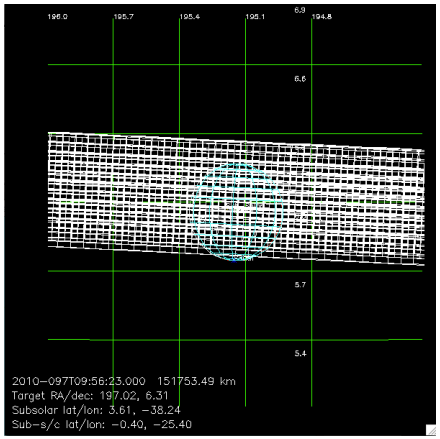
129DI_ICYLON001_VIMS
2010-097T08:39
Alt= 122,806 km
Longitude= 22°W
Latitude=0.4°S
Phase= 12.6°

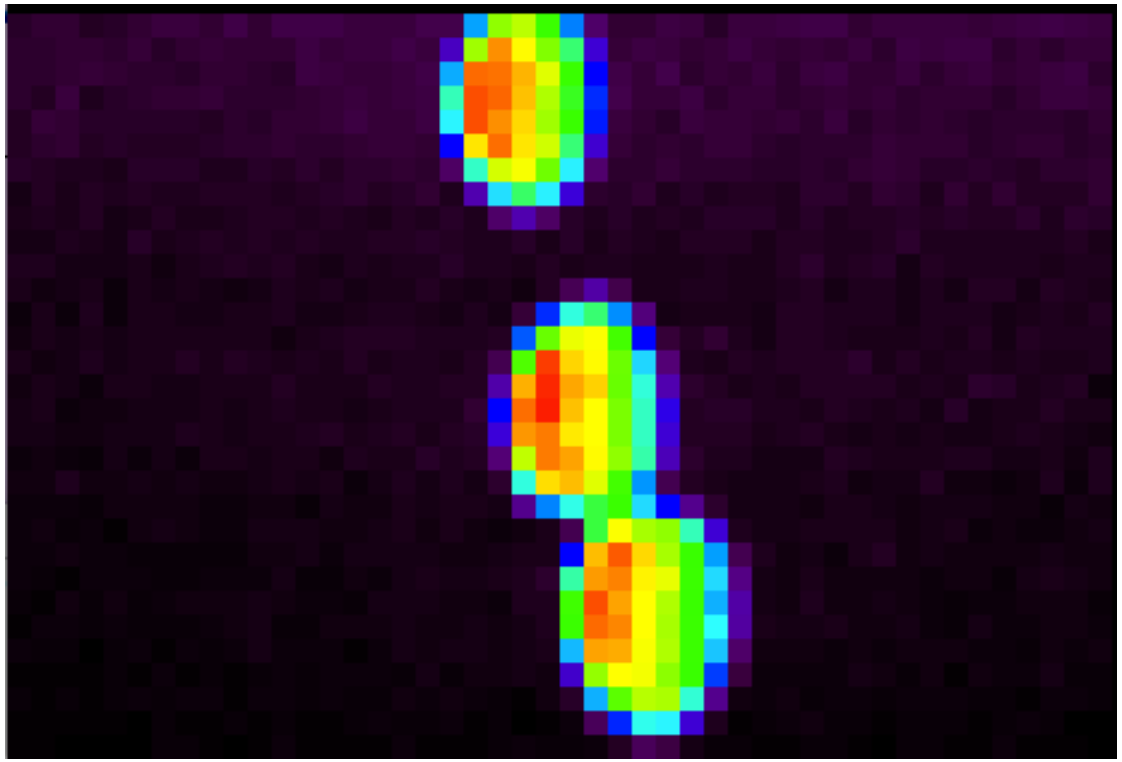


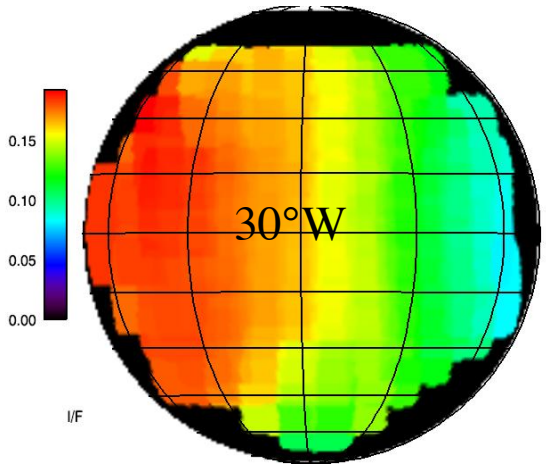
CIRS_129DI_FP3DAYMAP001_PRIME

129DI_ICYLON001_CIRS
2010-097T09:57
Alt= 170,443 km
Longitude= 27°W
Latitude=0.4°S
Phase= 14°

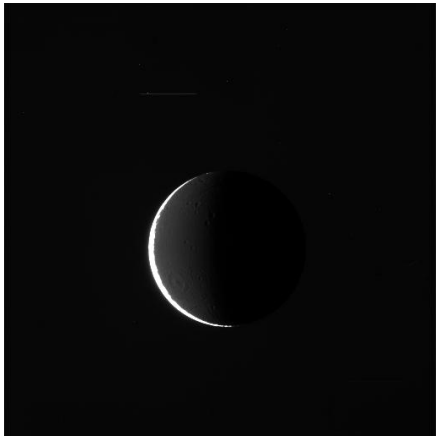


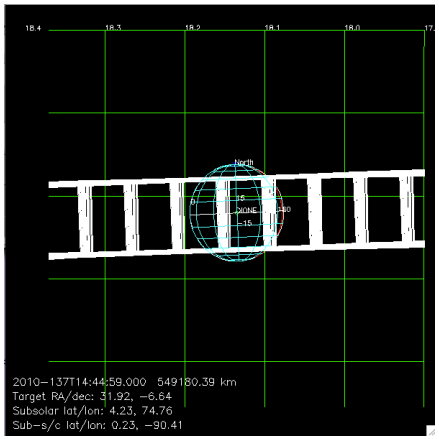


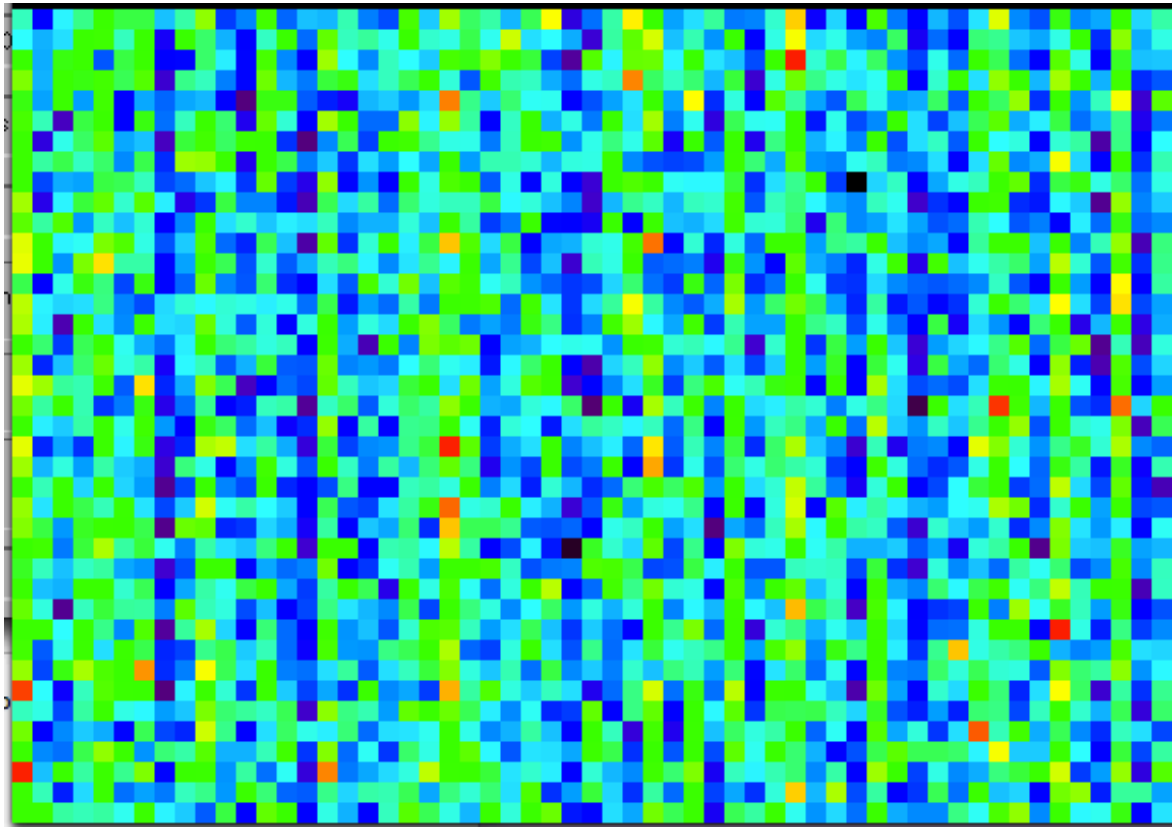




131DI_ICYSTARE001_PRIME
2010-137T14:47
Alt= 471,235 km
Longitude= 93°W
Latitude=0.2°N
Phase= 158°

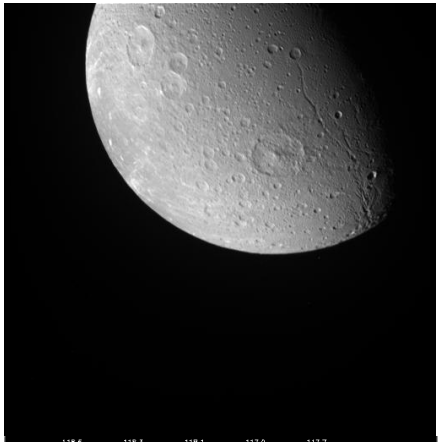


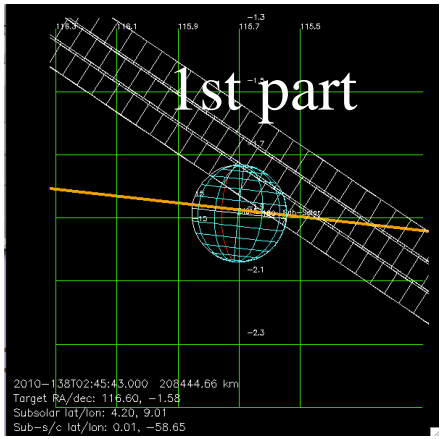


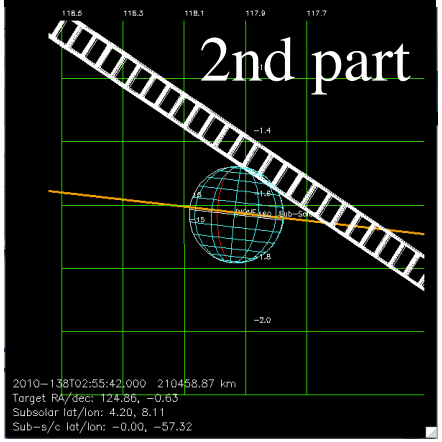


Low SNR

CIRS_131DI_FP3SECLN001_PRIME

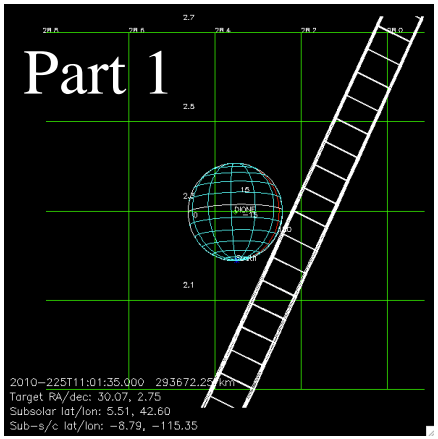


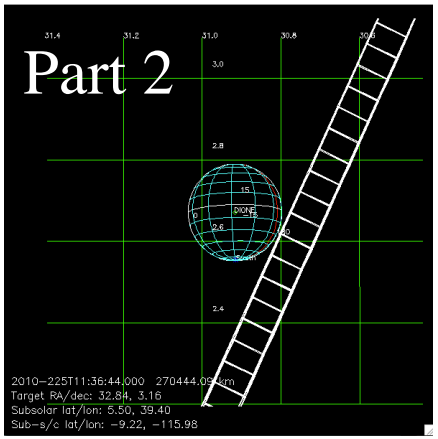


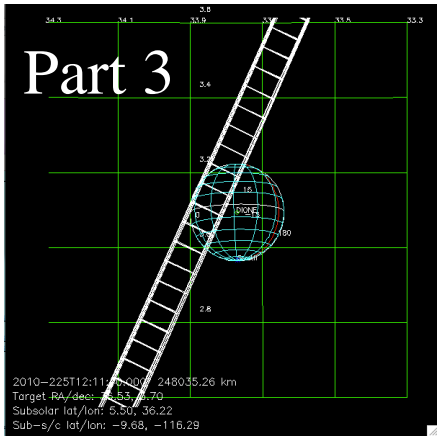


131DI_ICYECL001_CIRS
2010-138T02:46
Alt=208,269 km
Longitude= 58°W
Latitude=0°N
Phase= 67.6°
Eclipse: 03:02:55-05:56:28

Part 1

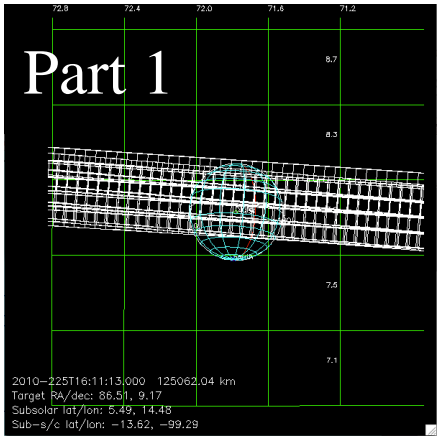


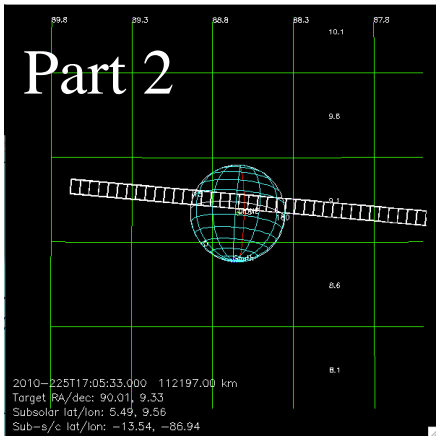


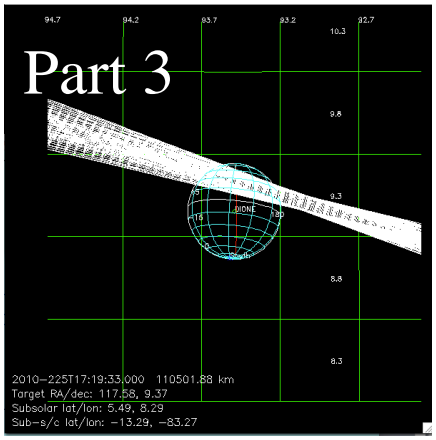


136DI_ICYPLU001_ISS
2010-225T11:04
Alt= 238,114 km
Longitude= 116°W
Latitude=10°S
Phase= 151°

These are all either off-body or on the night side

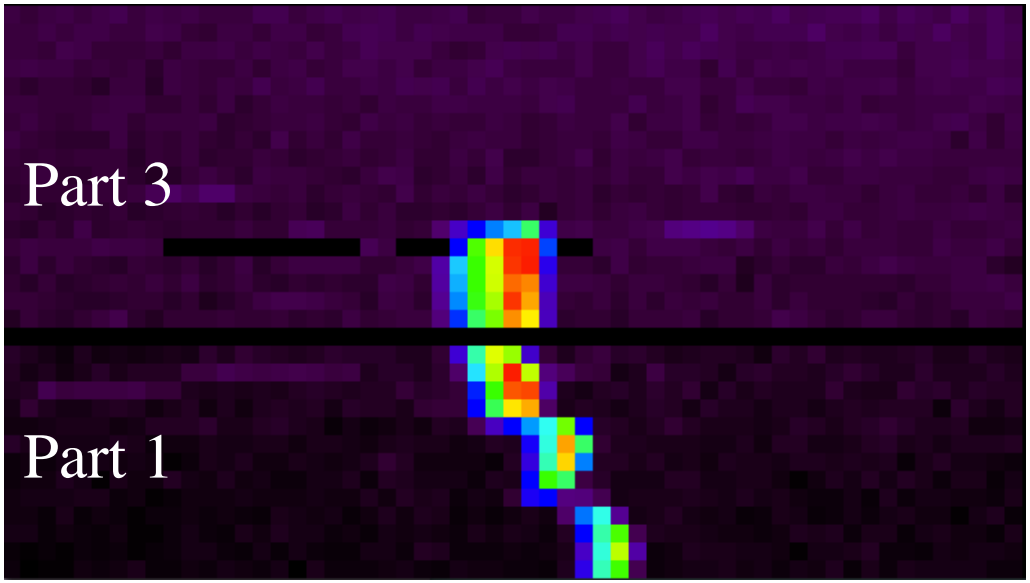






136DI_ICYECL001_CIRS
2010-225T16:13
Alt= 118,022 km
Longitude= 94°W
Latitude=14°S
Phase= 107°

Eclipse 17:40:12-20:10:27
(starting in the middle of part 3)



ISS_137DI_DIONE001_PRIME

137DI_ICYLON001_CIRS

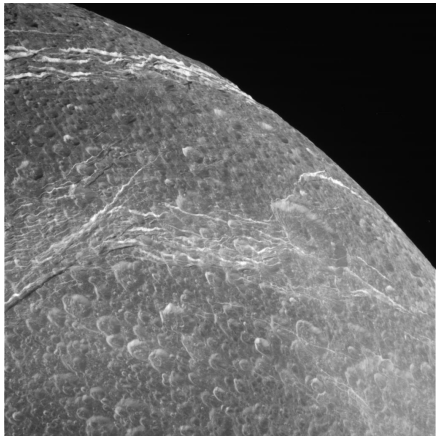
2010-246T07:35

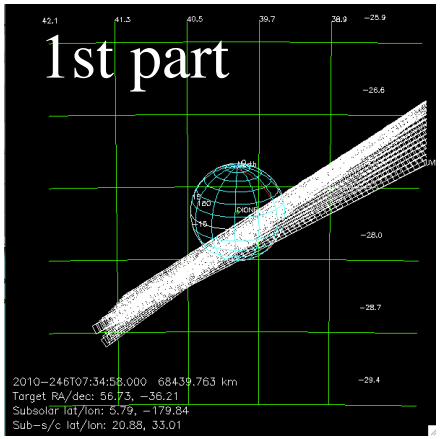
Alt= 58,484 km

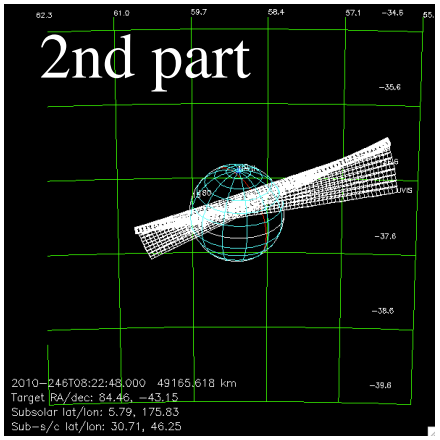
Longitude= 322°W

Latitude=25°N

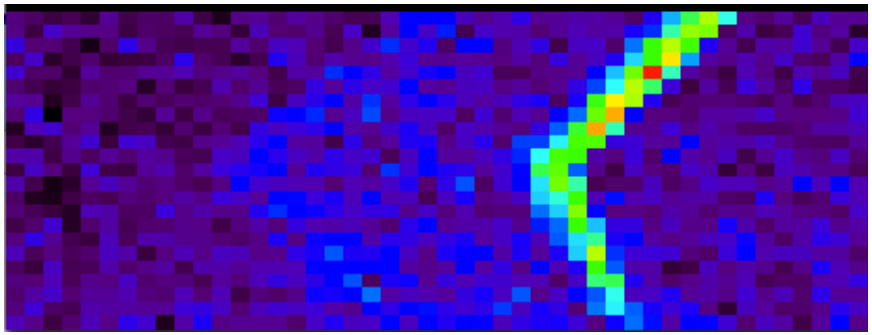
Phase= 130°



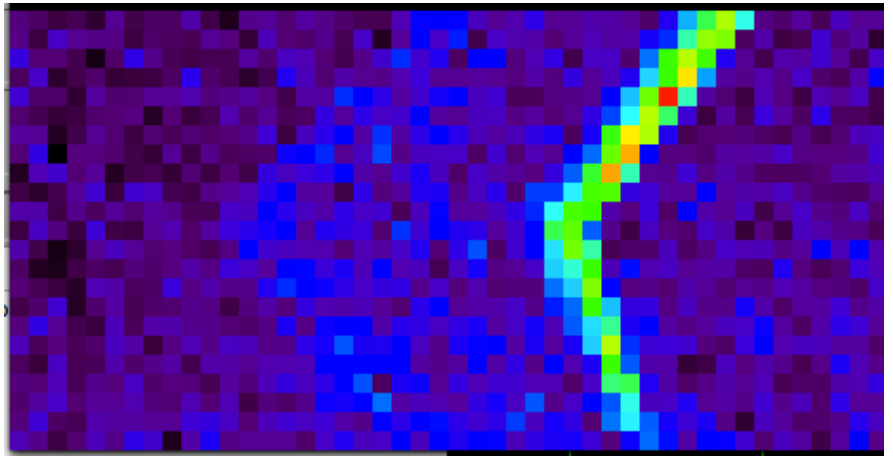




2nd part



1st part



ISS_137DI_DIONE001_PRIME

20-panel mosaic 137DI_ICYLON001_ISS

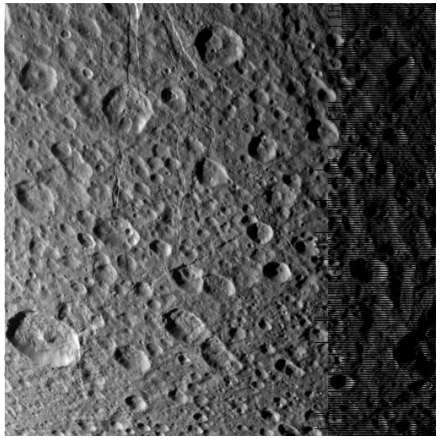
2010-246T09:02

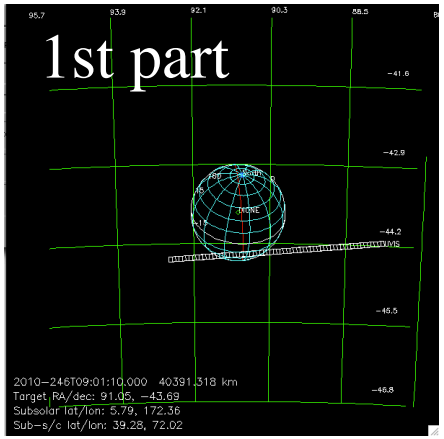
Alt= 39,830 km

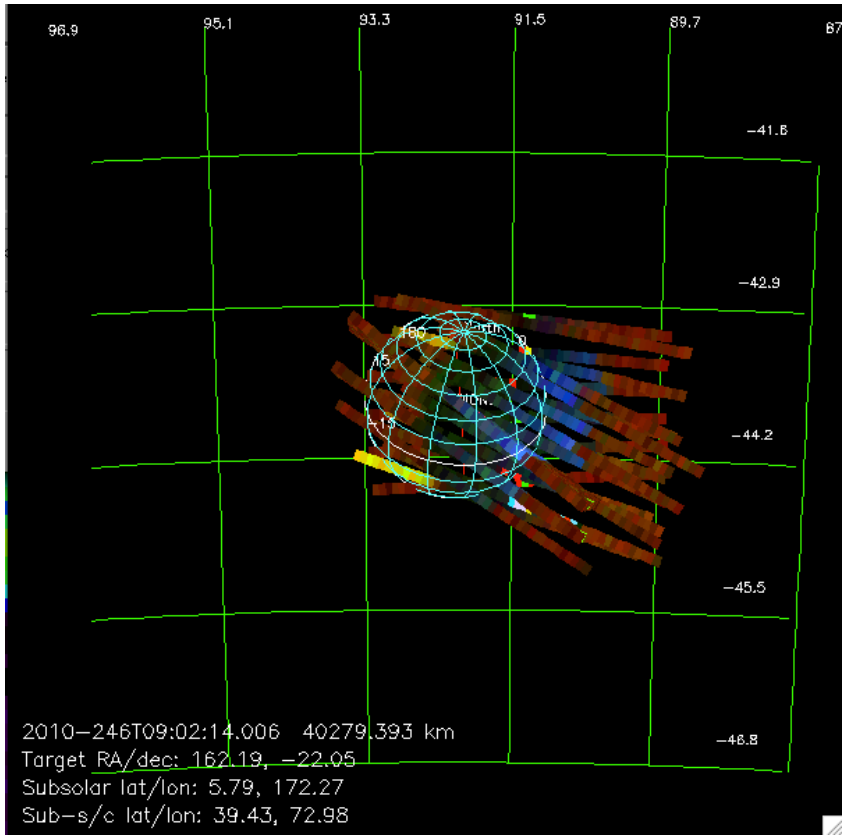
Longitude= 288°W

Latitude=39°N

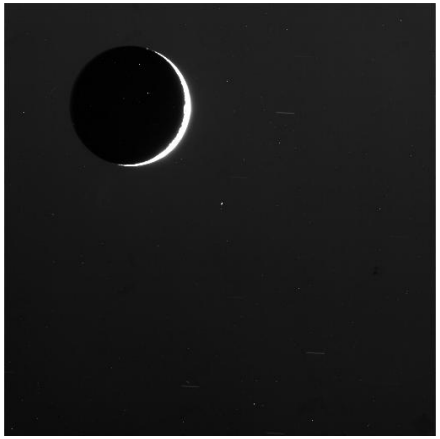
Phase= 94°

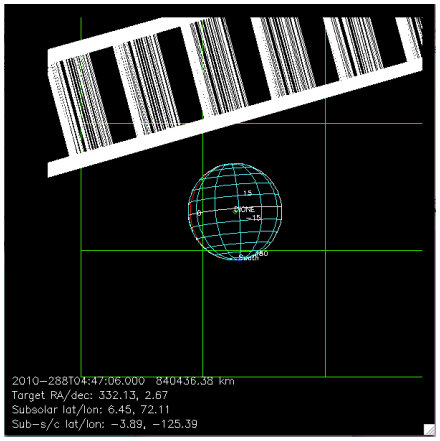






VIMS_139DI_DIONE001_PRIME





139DI_ICYSTARE001_VIMS

2010-288T04:52

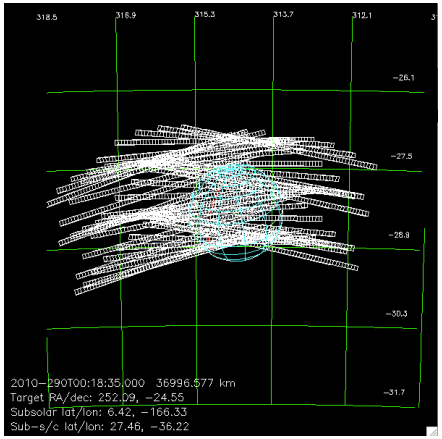
Alt= 803758 km

Longitude= 130°W

Phase= 162°

Dione not in UVIS slit

CIRS_139DI_DIONE001_PRIME



139DI_ICYLON001_CIRS

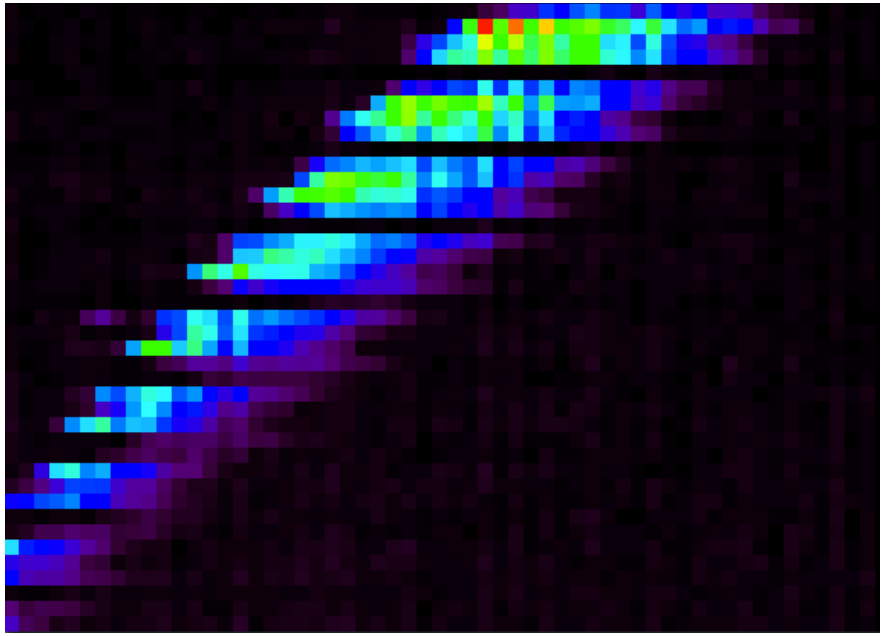
2010-290T00:19

Alt= 32,928 km

Longitude= 71°W

Latitude=31°N

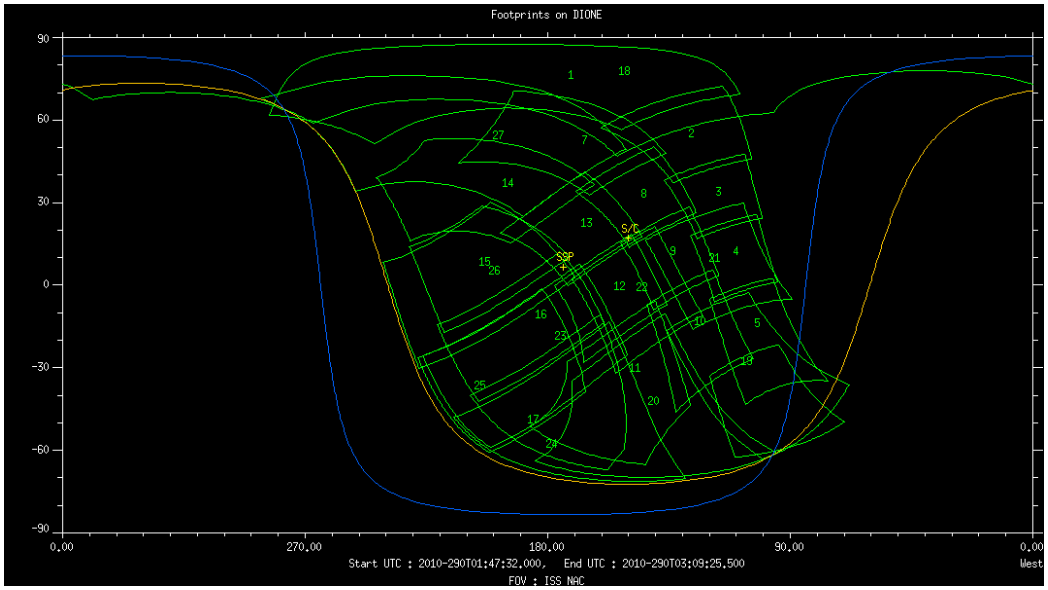
Phase= 93°

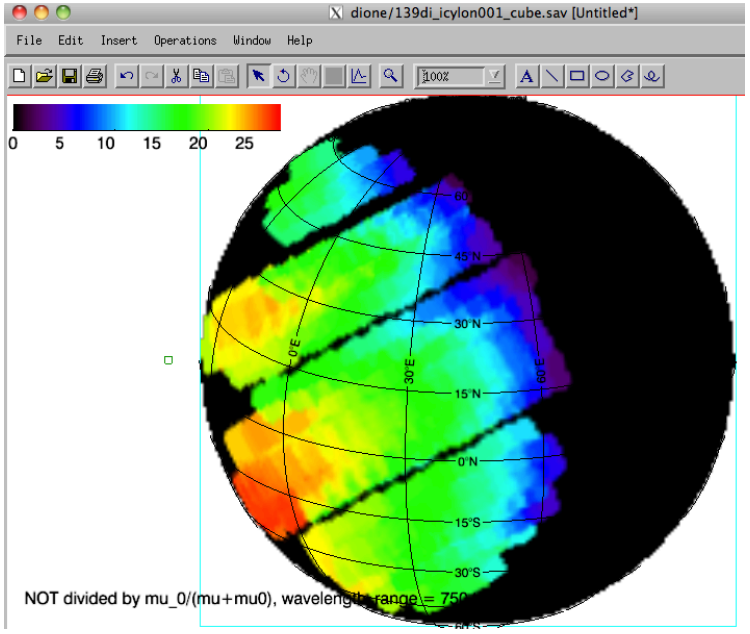


ISS_139DI_REGMAP001_PIE

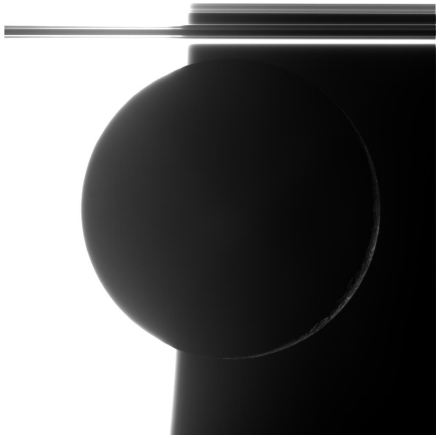
139DI_ICYLON001_ISS
2010-290T01:50
Alt= 37054 km
Longitude= 116°W
Phase= 60°

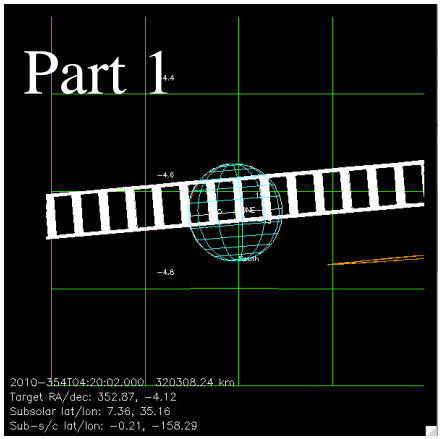
27-panel mosaic

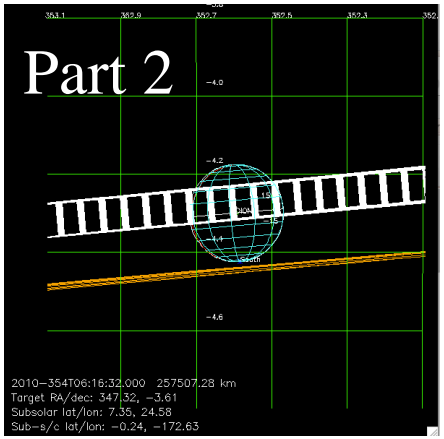


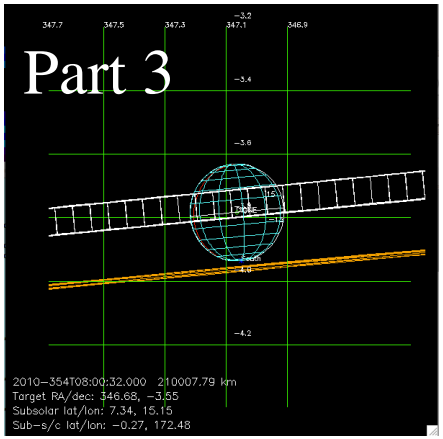


VIMS_142DI_DIONE001_PRIME









142DI_ICYLON001_VIMS

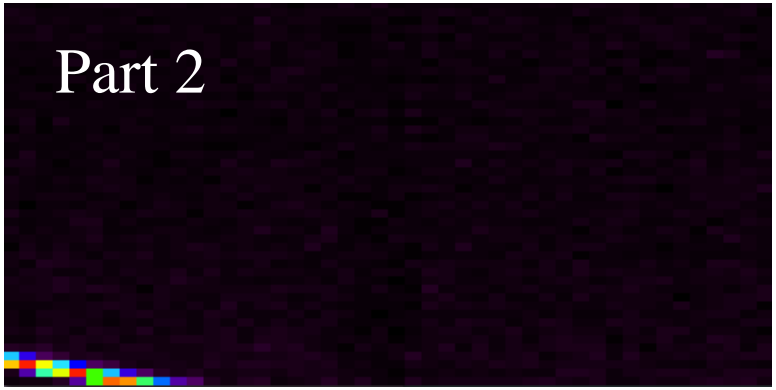
2010-354T04:21

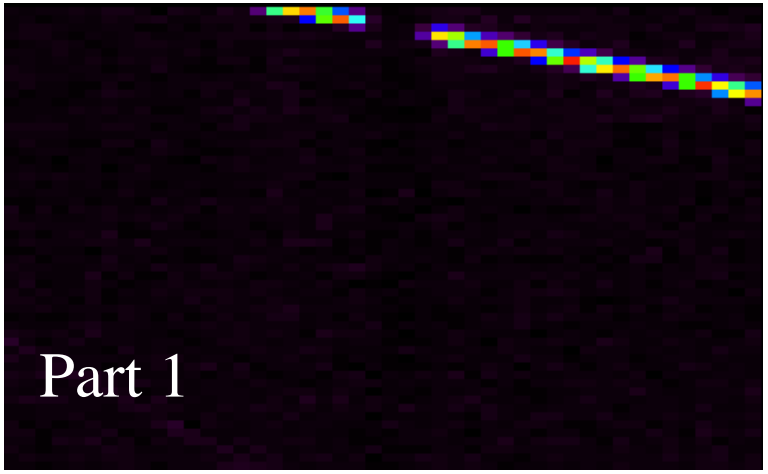
Alt= 289,273 km

Longitude= 165°W

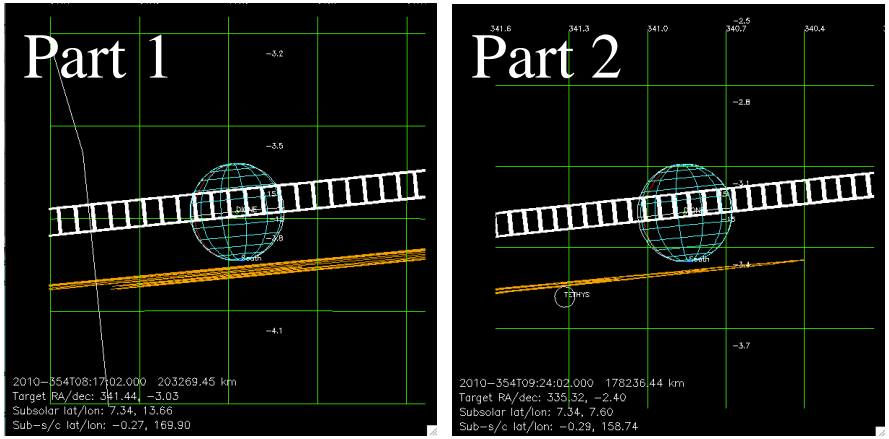
Latitude=0.2°S

Phase= 163°

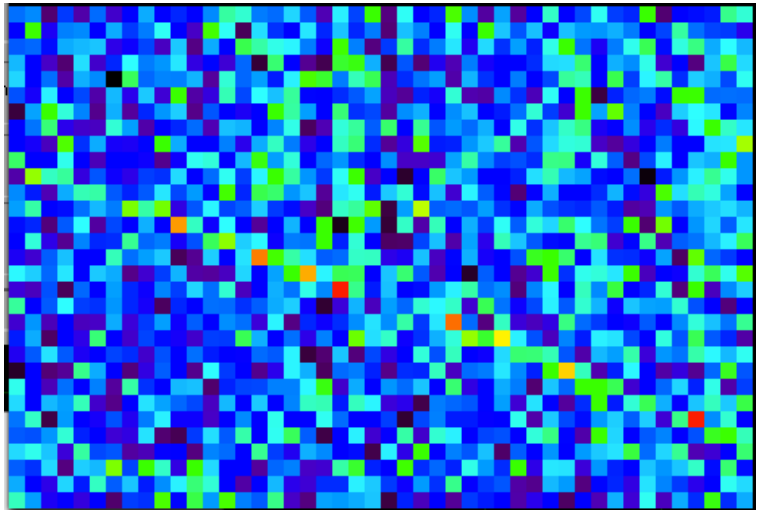




VIMS_142DI_DIONE002_PRIME



142DI_ICYLON002_VIMS
2010-354T08:18
Alt= 191,166 km
Longitude= 195°W
Phase= 153°

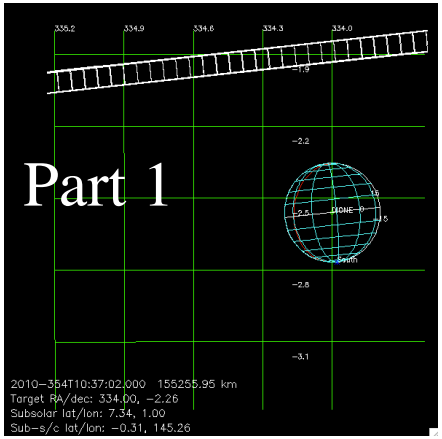


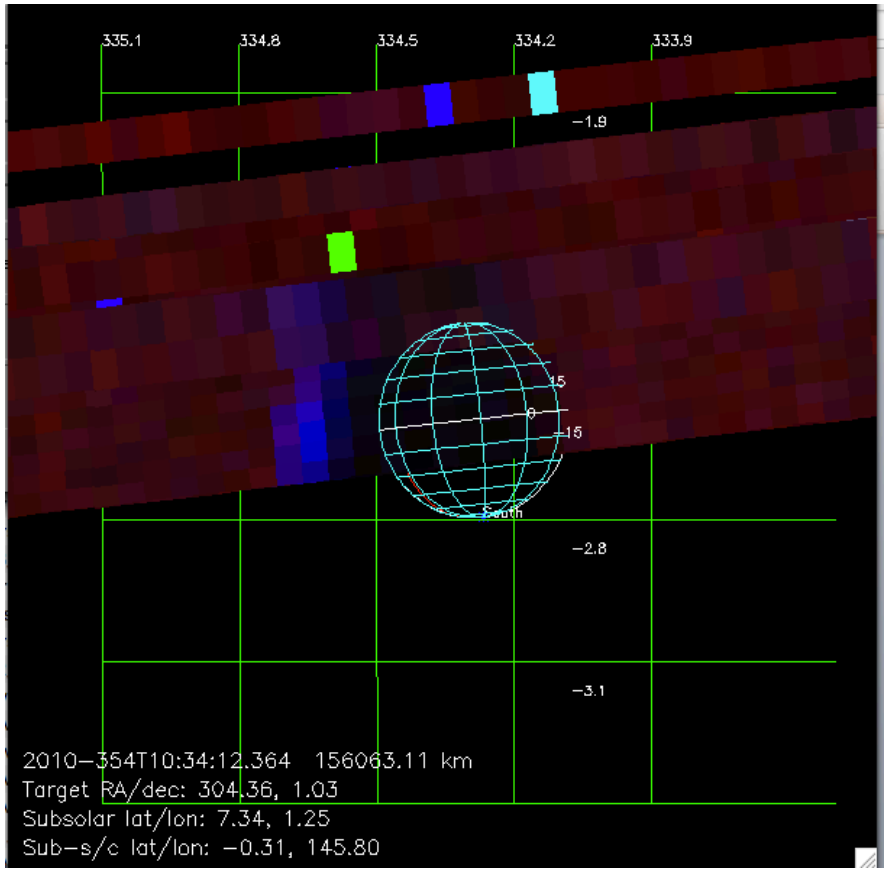
Low SNR

CIRS_142DI_FP3NITE001_PRIME

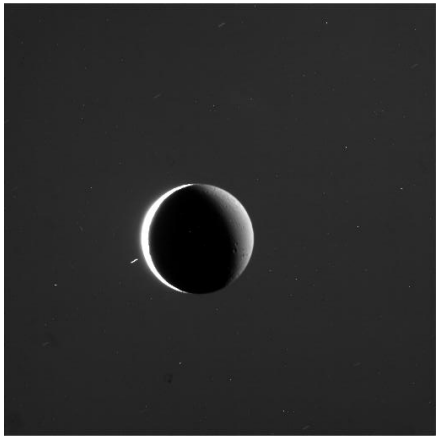
15-part

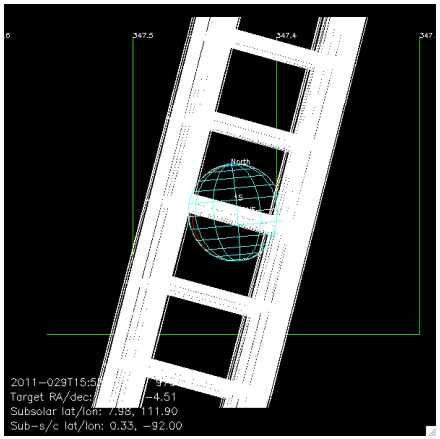
142DI_ICYLON003_CIRS
2010-354T10:34
Alt= 155,264 km
Longitude= 214°W
Latitude=0.3°S
Phase= 144°

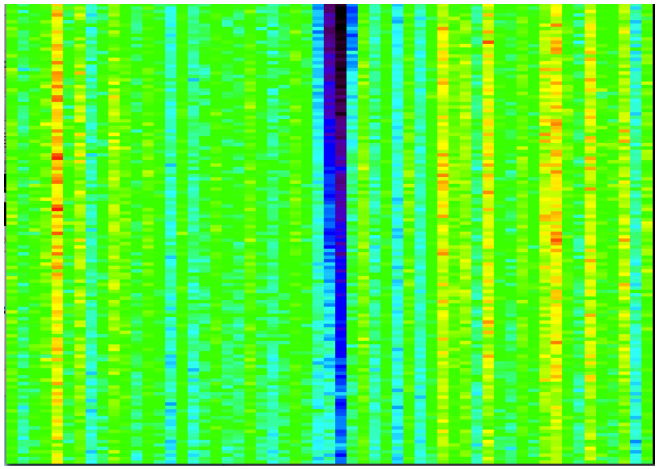




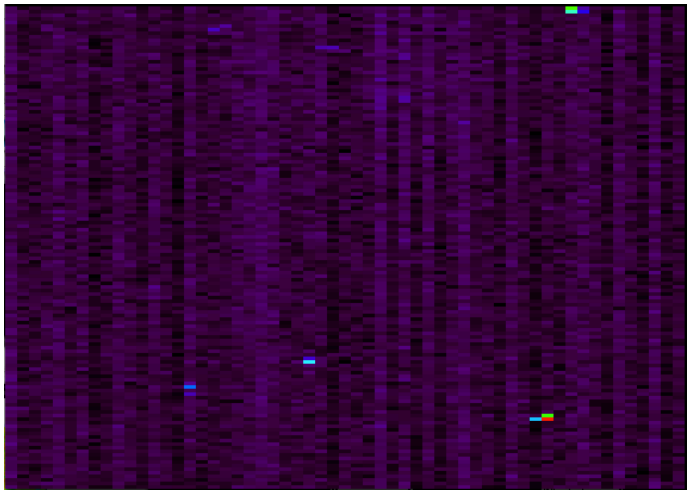
144DI_ICYSTARE001_PRIME
2011-029T15:58
Alt= 694,238km
Longitude=122°W
Latitude=0.4°N
Phase=158 °





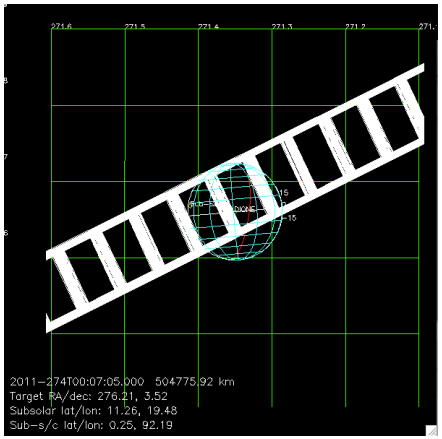


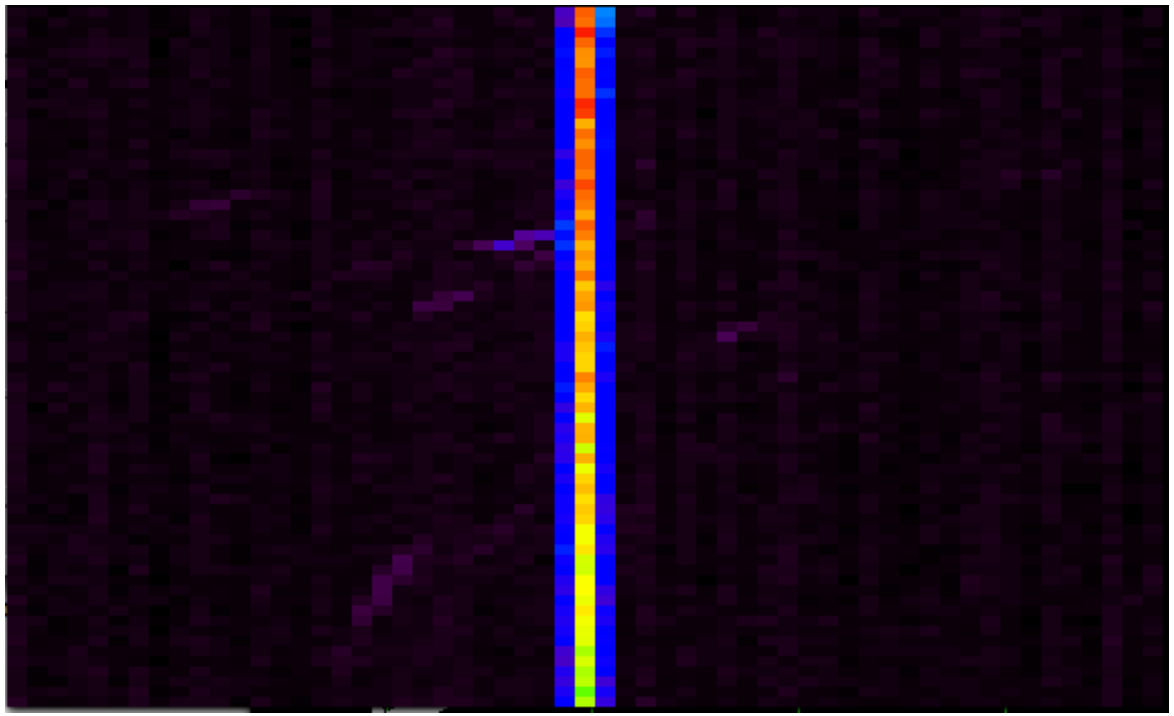
Ly-a

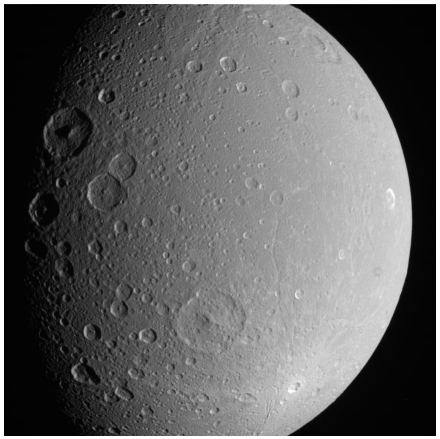


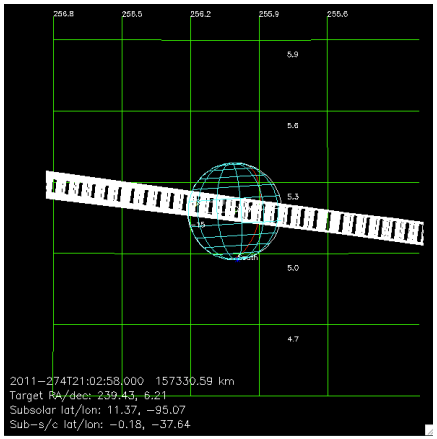
Long waves-
low SNR

154DI_ICYSTARE001_ISS
2011-274T00:09
Alt= 502,056 km
Longitude= 283°W
Latitude=0.2°N
Phase= 74°



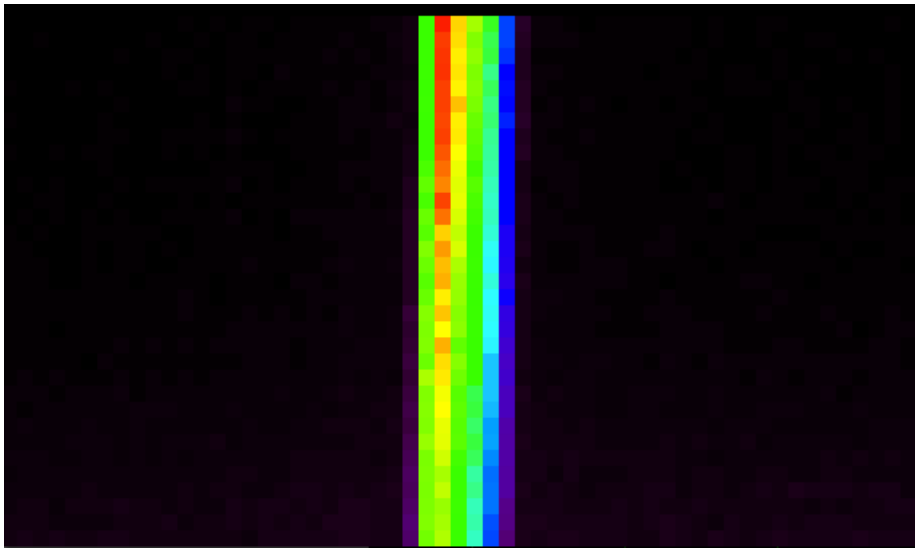




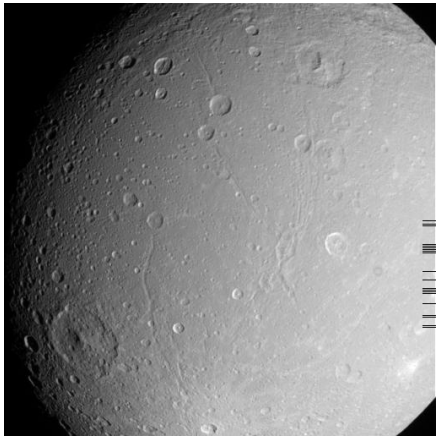


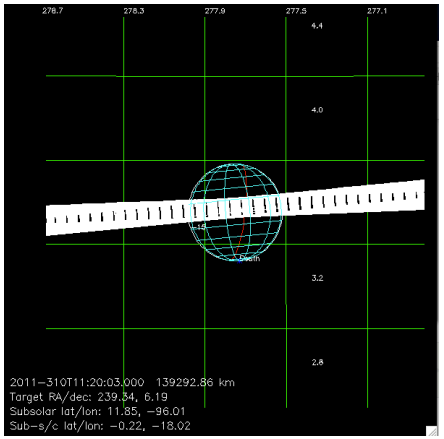
154DI_ICYSTARE002_ISS
2011-275T00:08
Alt= 166,655 km
Longitude= 15°W
Latitude=0°N
Phase= 49°

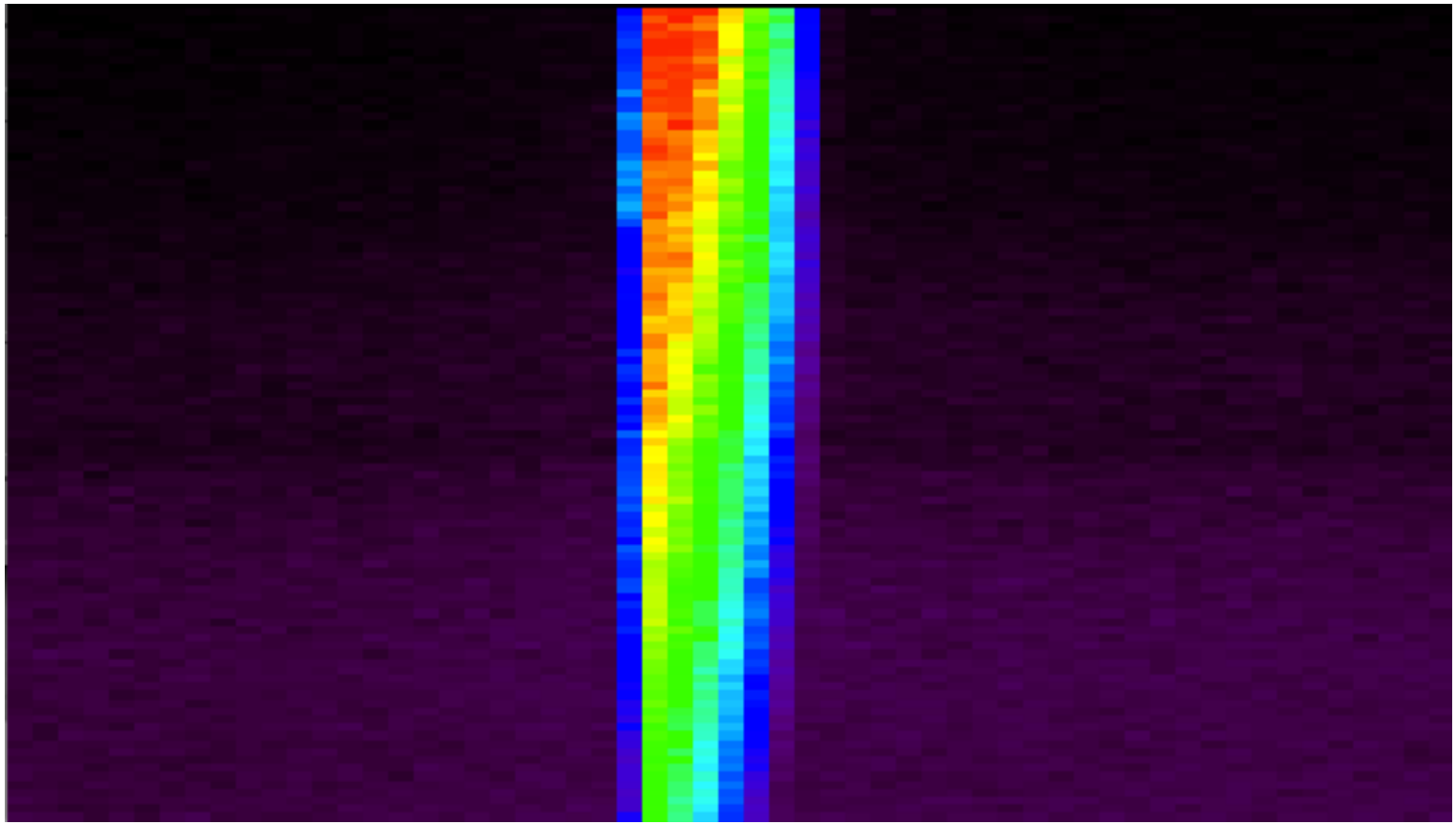
+ 6 additional pointings



156DI_ICYSTARE001_PRIME
2011-310T11:21
Alt= 136,202 km
Longitude= 57.9°W
Latitude=0.14°S
Phase= 57.9°







158DI_ICYLON002_CIRS

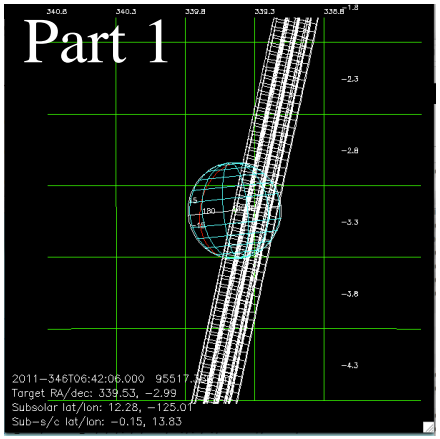
2011-346T06:44

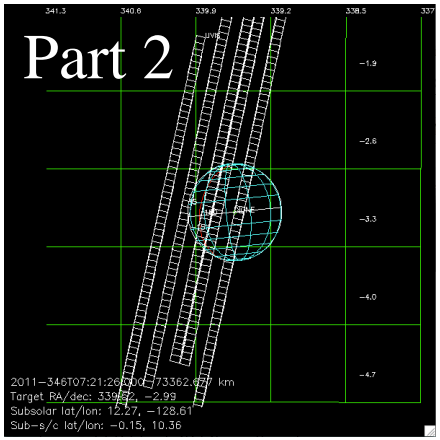
Alt= 85,865 km

Longitude= 347°W

Latitude=0.15°S

Phase= 137°





Ly-a

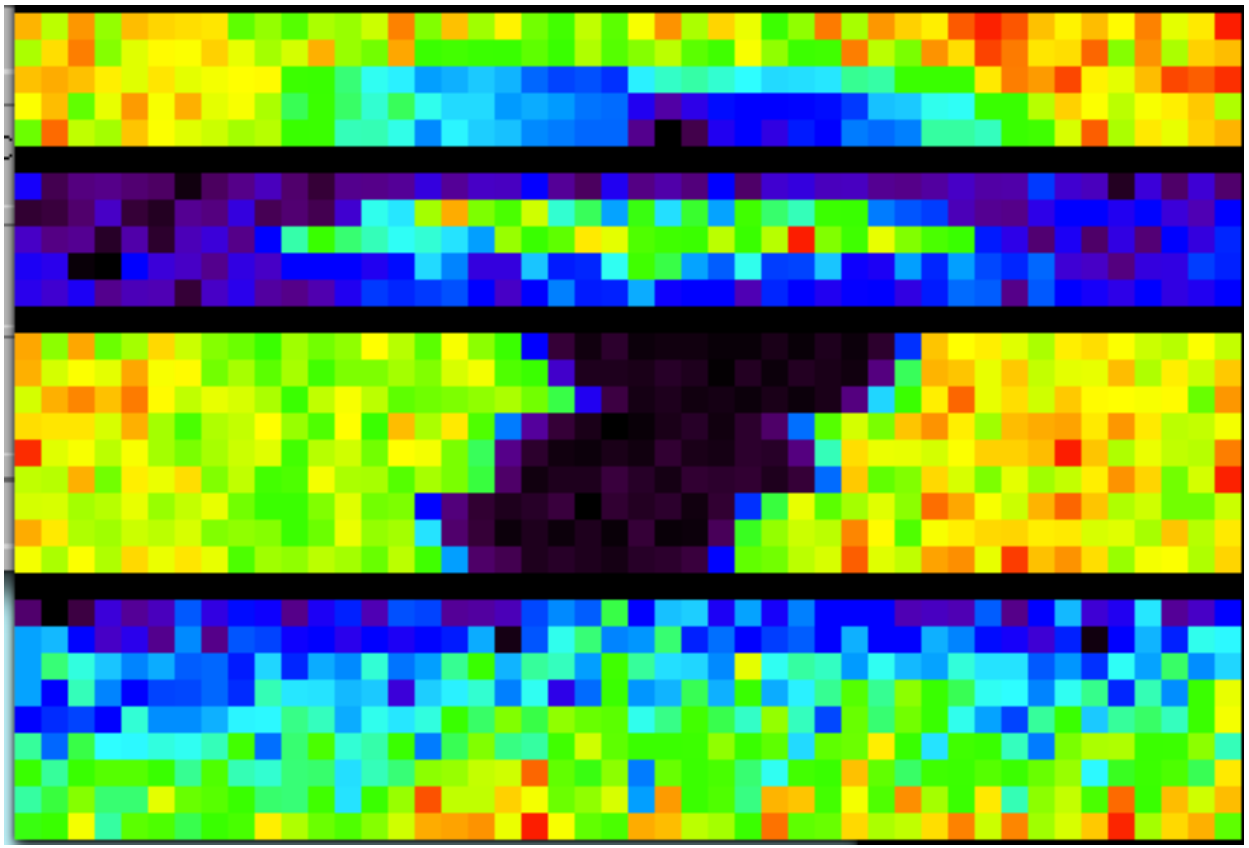
Part 2

Long waves

Ly-a

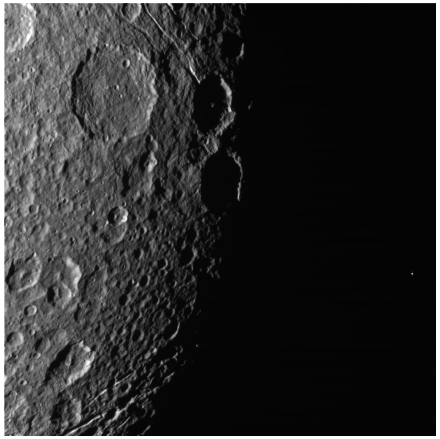
Part 1

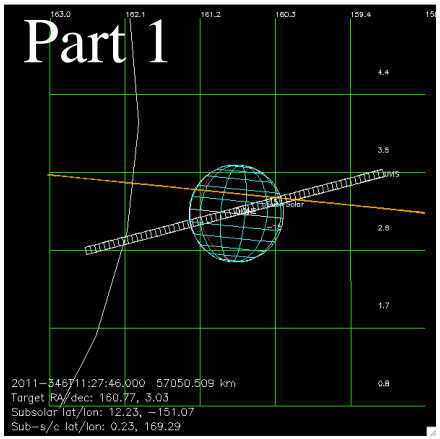
Long waves (low SNR)

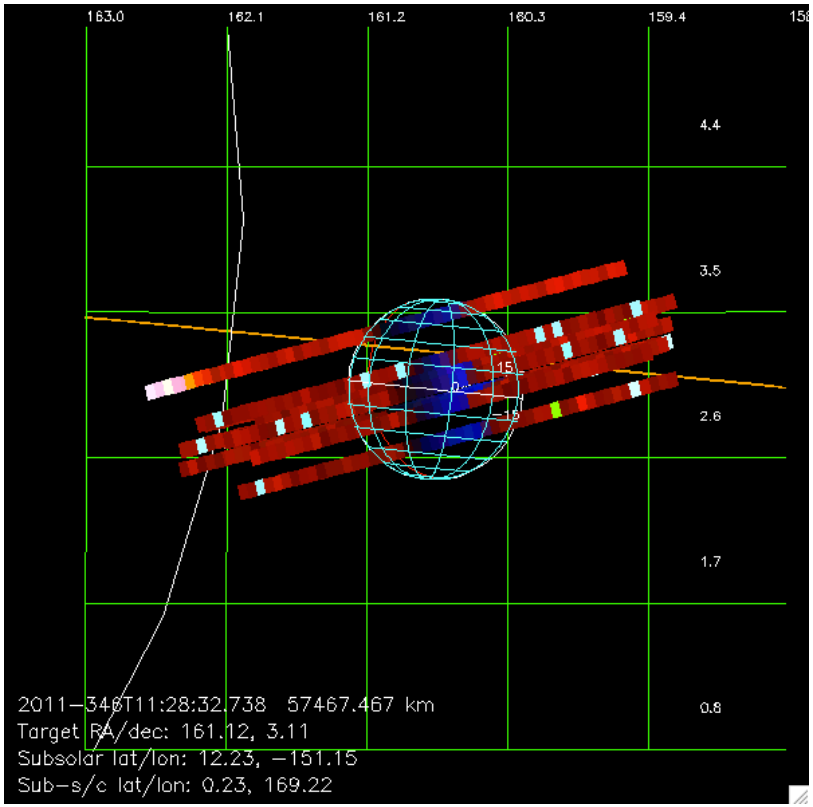


26-Panel mosaic

158DI_ICYLON003_ISS
2011-346T11:28
Alt= 56,487 km
Longitude= 191°W
Latitude=0.2°N
Phase= 42°

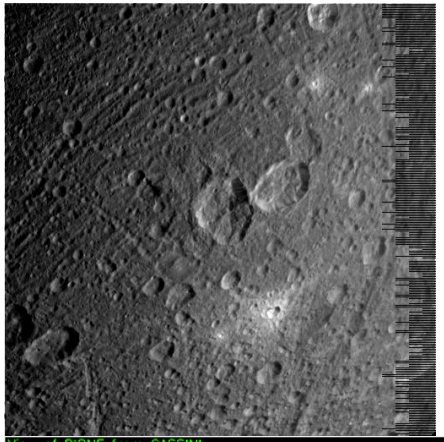


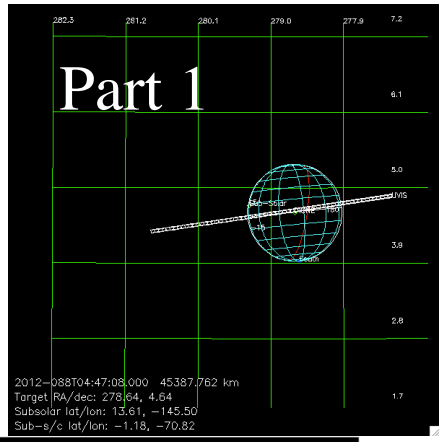


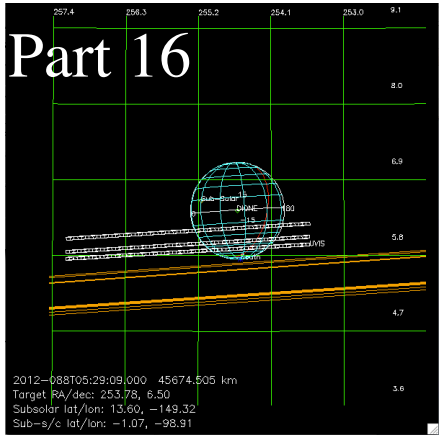


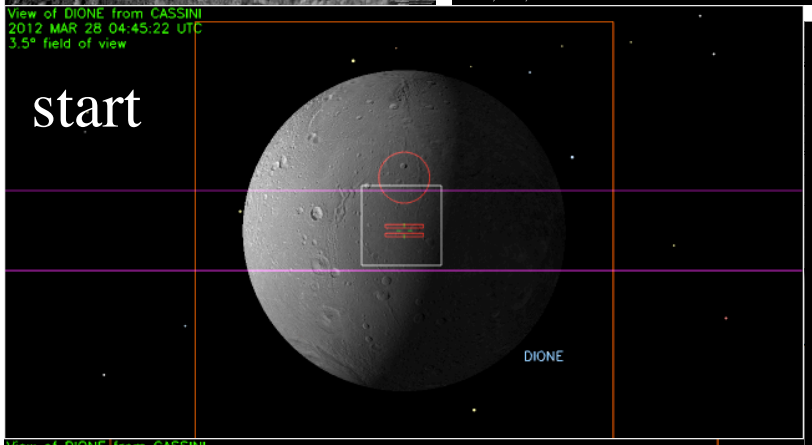
33-Panel mosaic 163DI_ICYMAP001_ISS

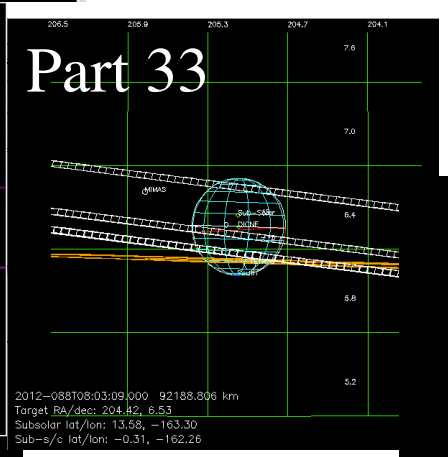
2012-088T04:45
Alt= 44,892 km
Longitude= 70°W
Latitude=1°S
Phase= 75.9°

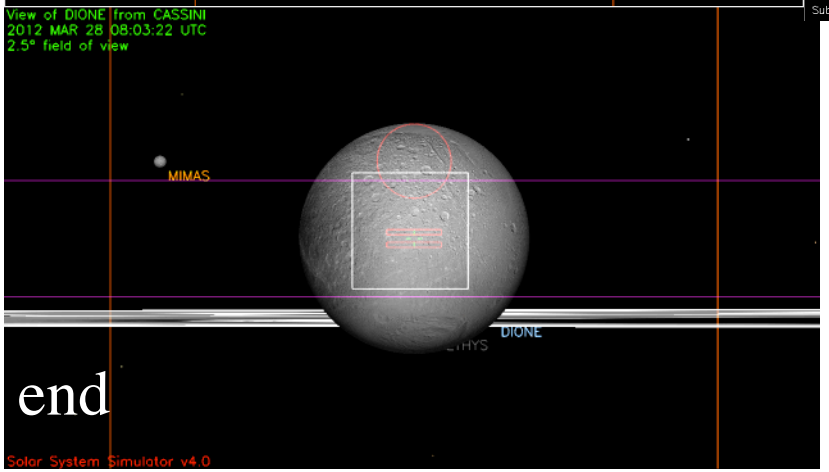


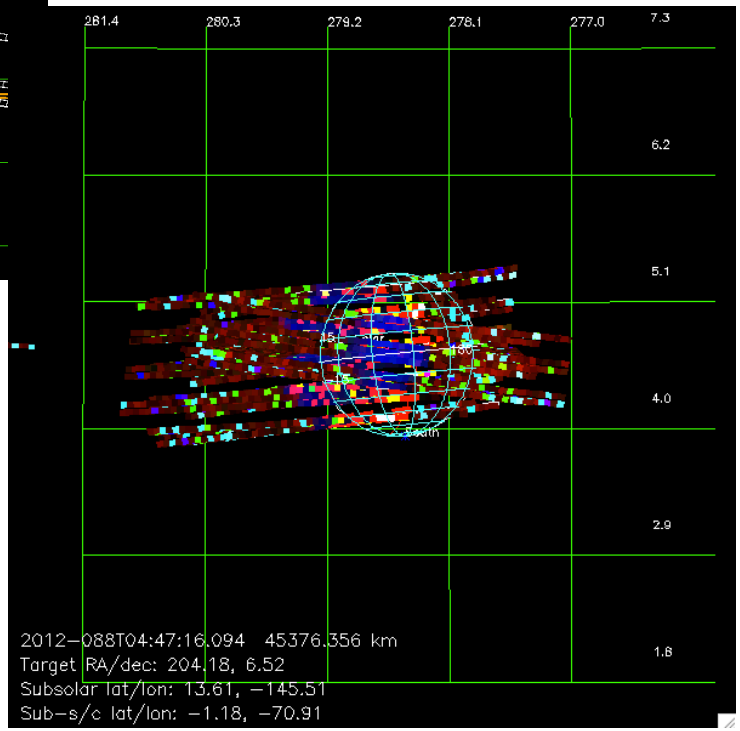


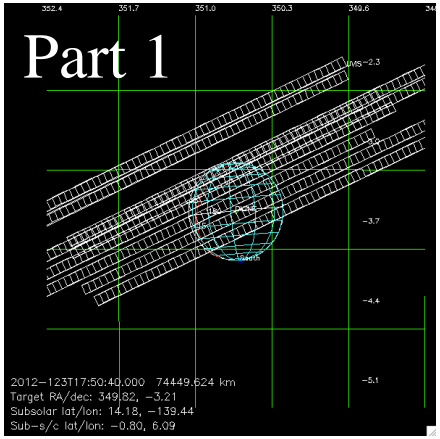


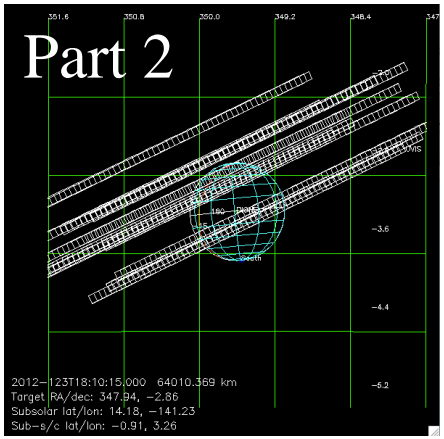


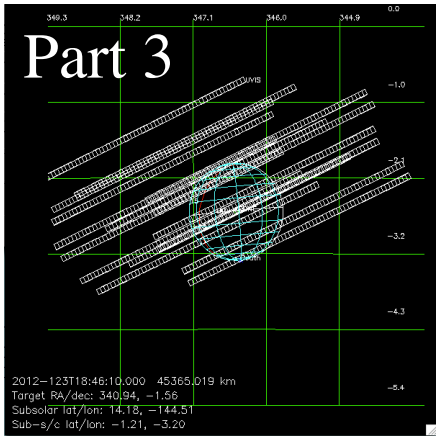


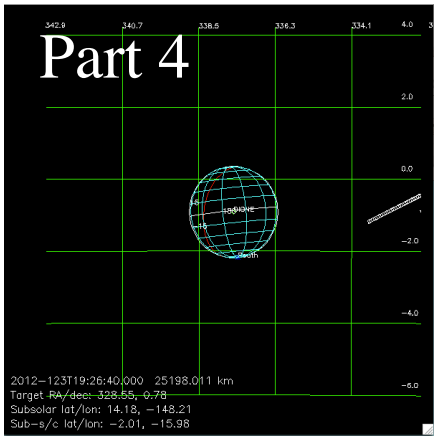












165DI_ICYLON001_CIRS
2012-123T17:51
Alt= 69,607 km
Longitude= 355°W
Latitude=0.8°S
Phase= 143°

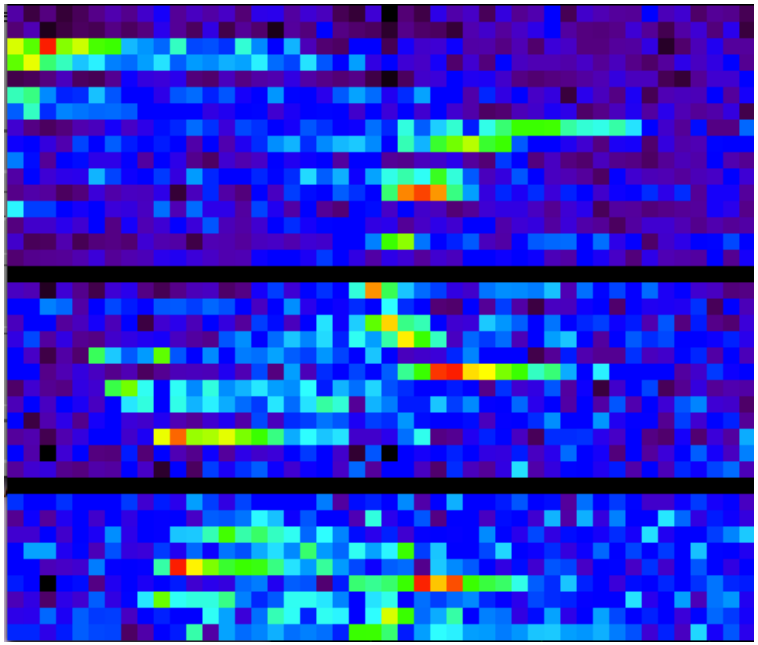
Fast scans

In front of Saturn until
123T18:59

Part 3

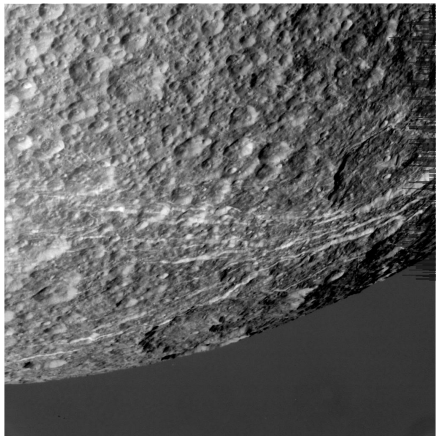
Part 2

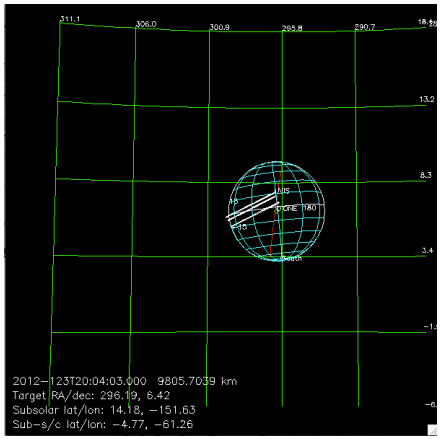
Part 1

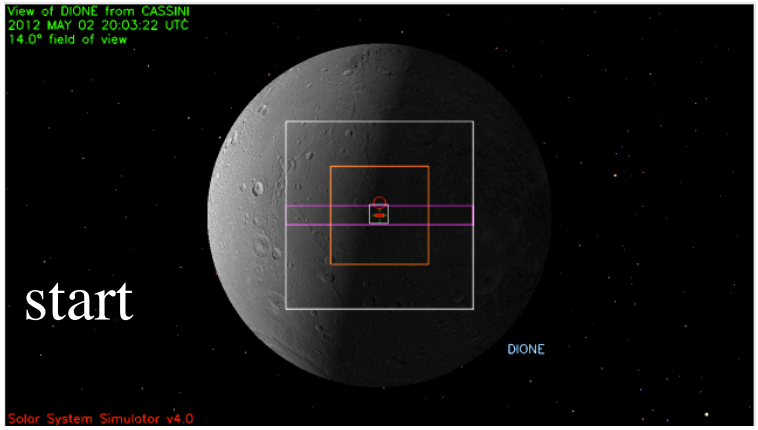


49-Panel mosaic

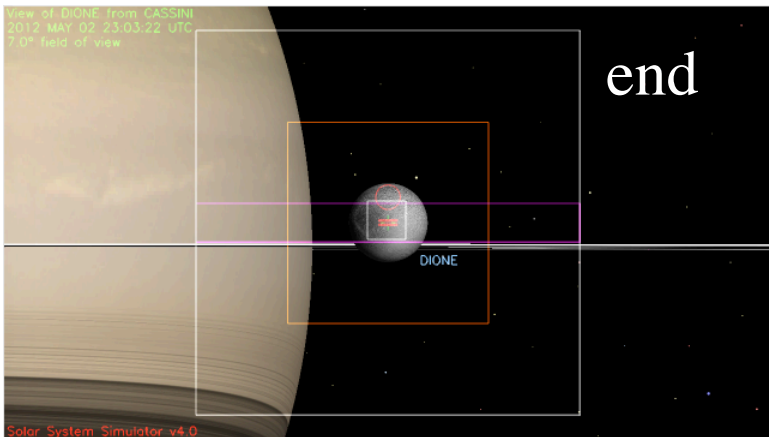
165DI_ICYMAP001_ISS
2012-123T20:03
Alt= 9370 km
Longitude= 60°W
Latitude=4.7°S
Phase= 93°

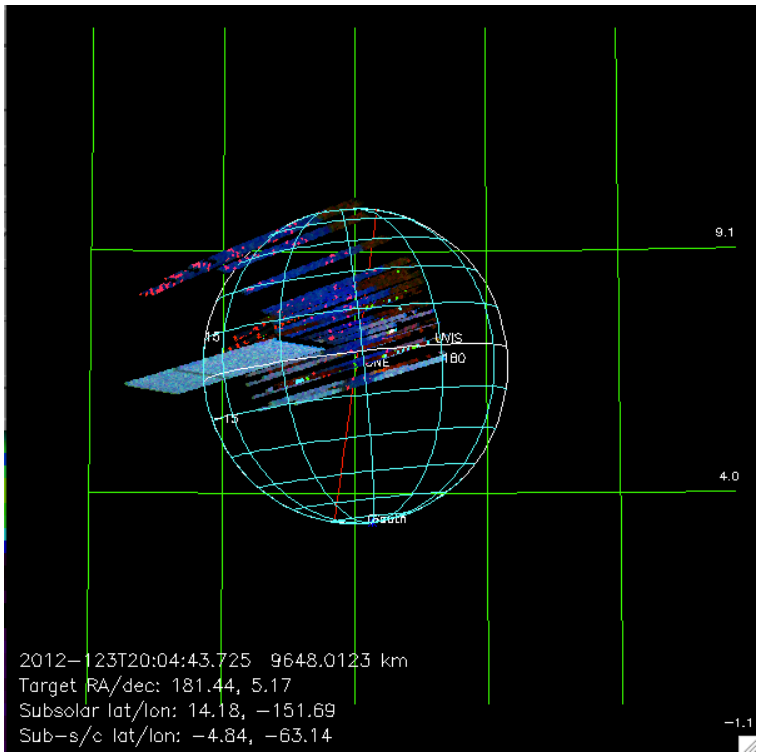




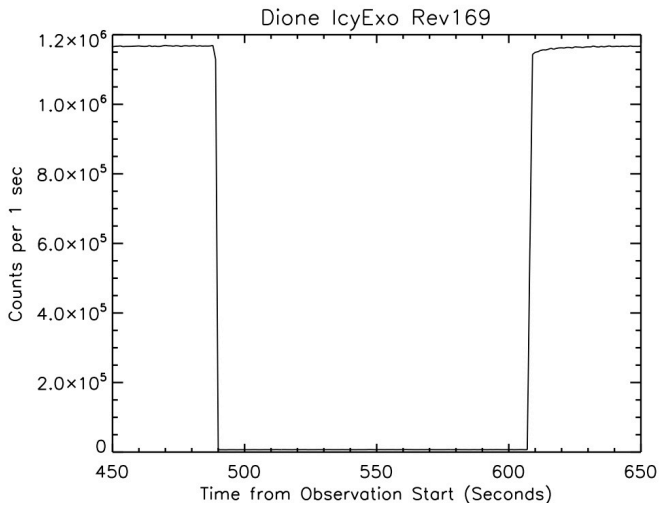


In front of Saturn –
123T21:14-23:00

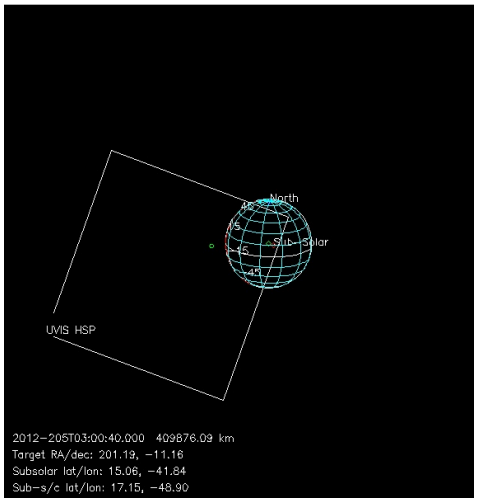




HSP profile

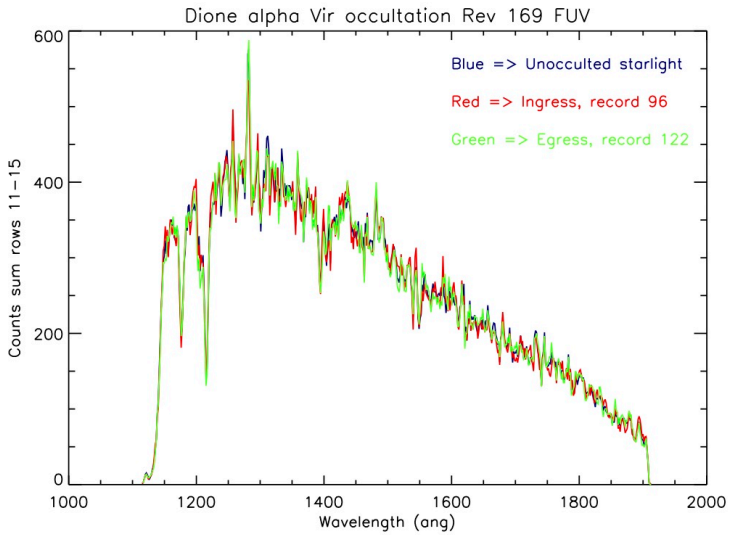


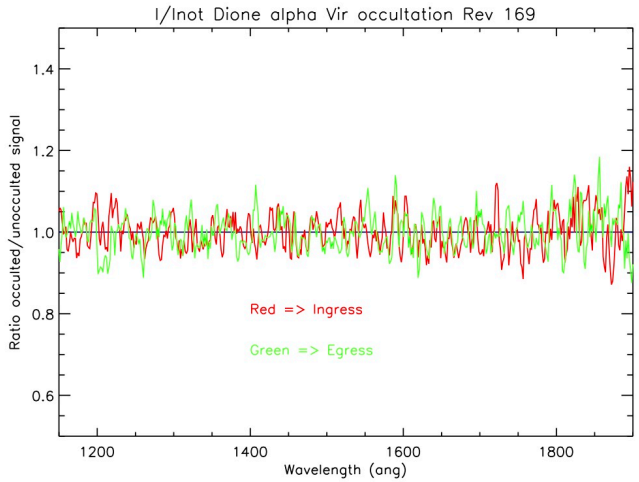
UVIS_169DI_ICYEXO001_PRIME
2012-205T02:52
Ingress lat/lon: -5.8 / 137.4
Egress lat/lon: -5.6 / 321.3
Star: Alpha Virginis



Ingress

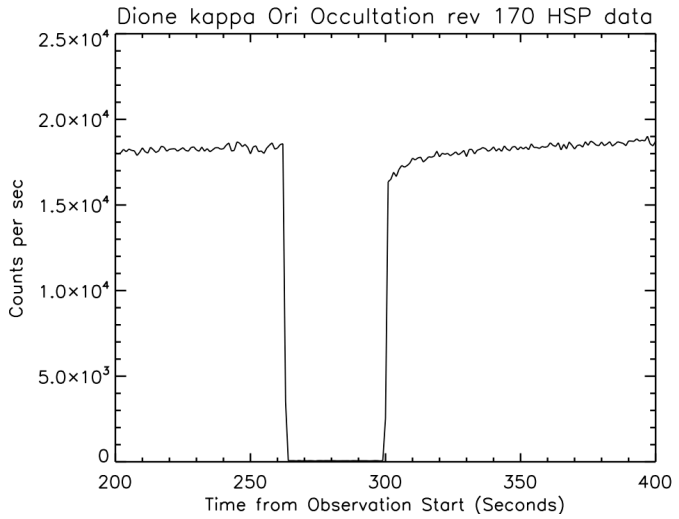
Spectra of I, I_0 (counts per integration period vs wavelength)



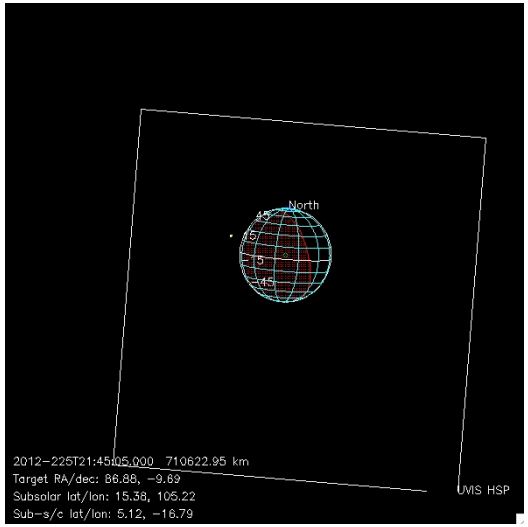


Spectrum of I/I_0

HSP profil

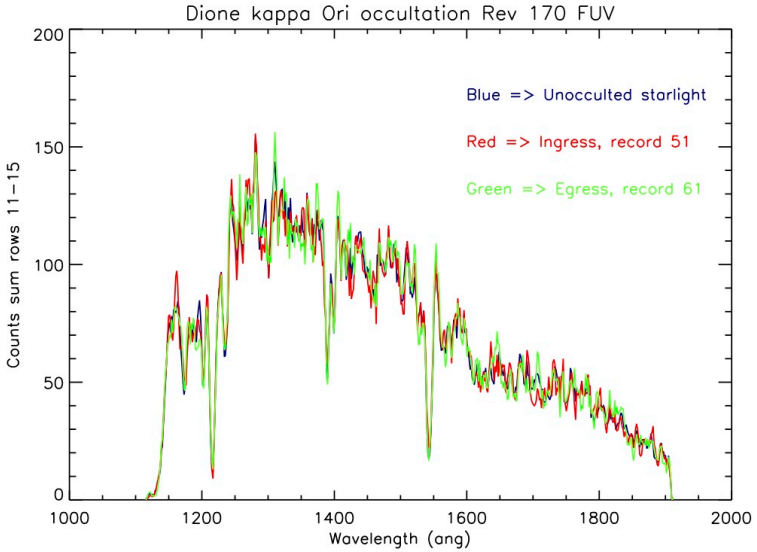


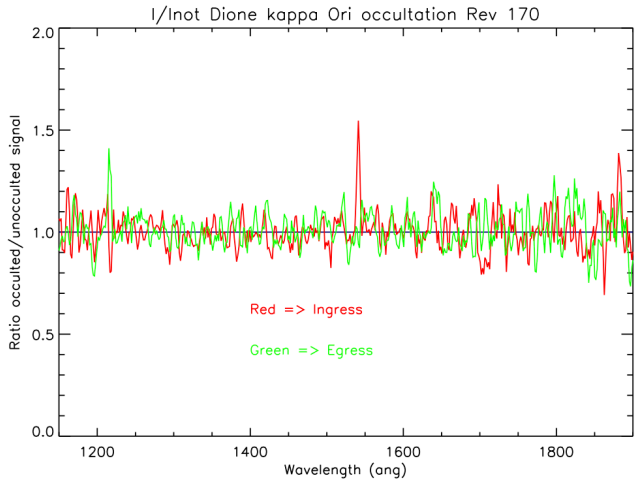
UVIS_170DI_ICYEXO001_PRIME
2012-225T21:40
Ingress lat/lon: 24.2 / 109.4
Egress lat/lon: 56.8 / 279.1
Star: Kappa Orionis



Ingress

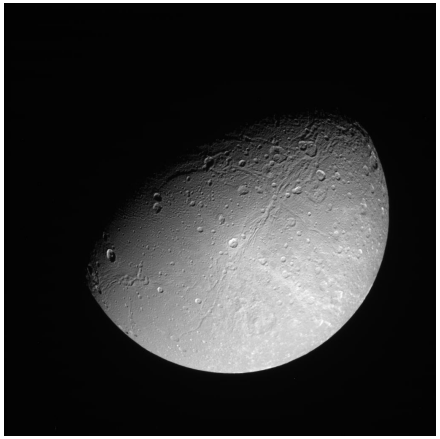
Spectra of I, I_0 (counts per integration period vs wavelength)

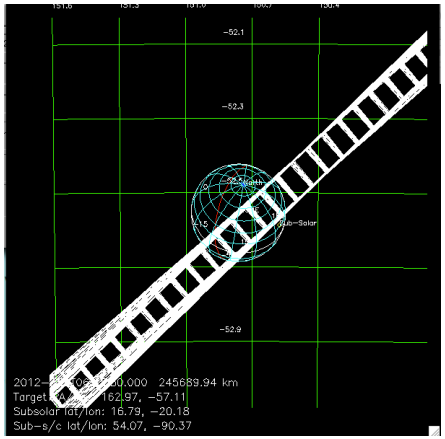


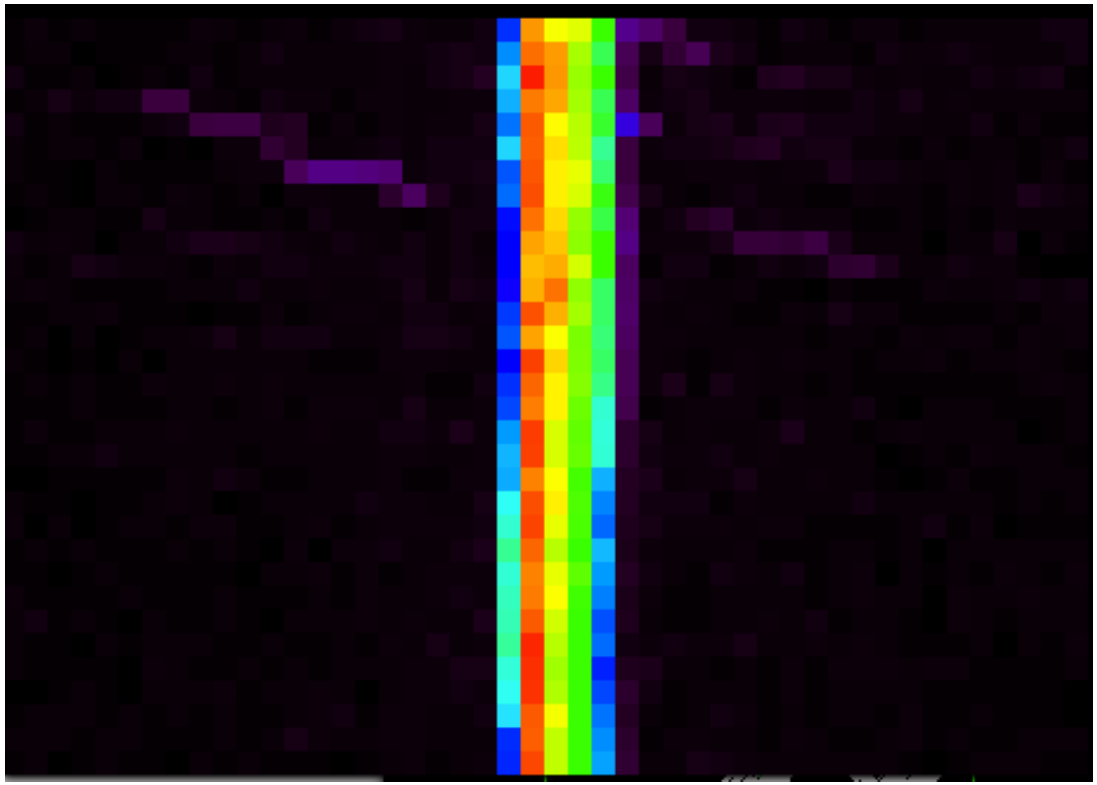


Spectrum of I/ I_0

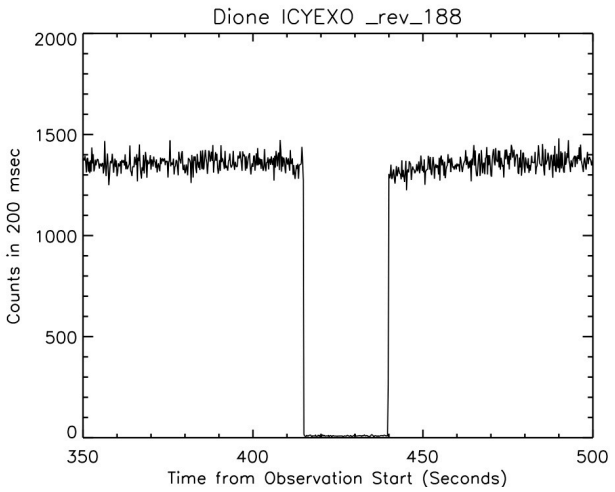
177DI_ICYLON001_ISS
2012-358T06:26
Alt= 252,096 km
Longitude= 88°W
Latitude=57°N
Phase= 62°



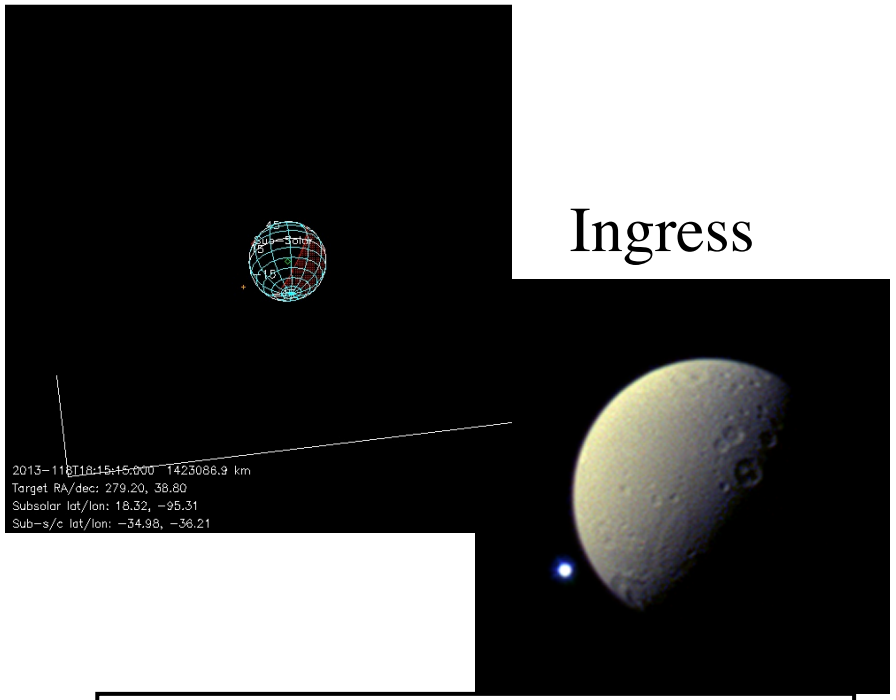




HSP profile

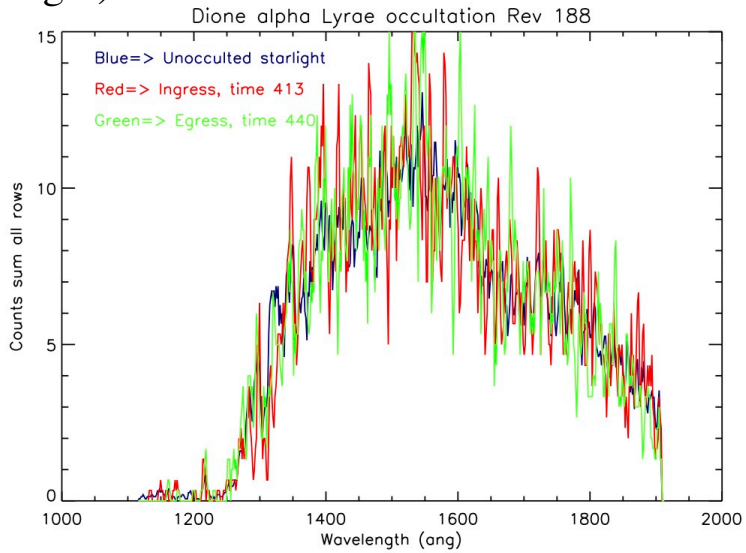


UVIS_188DI_ICYEXO001_PRIME
2013-118T18:08
Ingress lat/lon: -36.5 / 158.0
Egress lat/lon: -53.6 / 200.5
Star: Alpha Lyrae

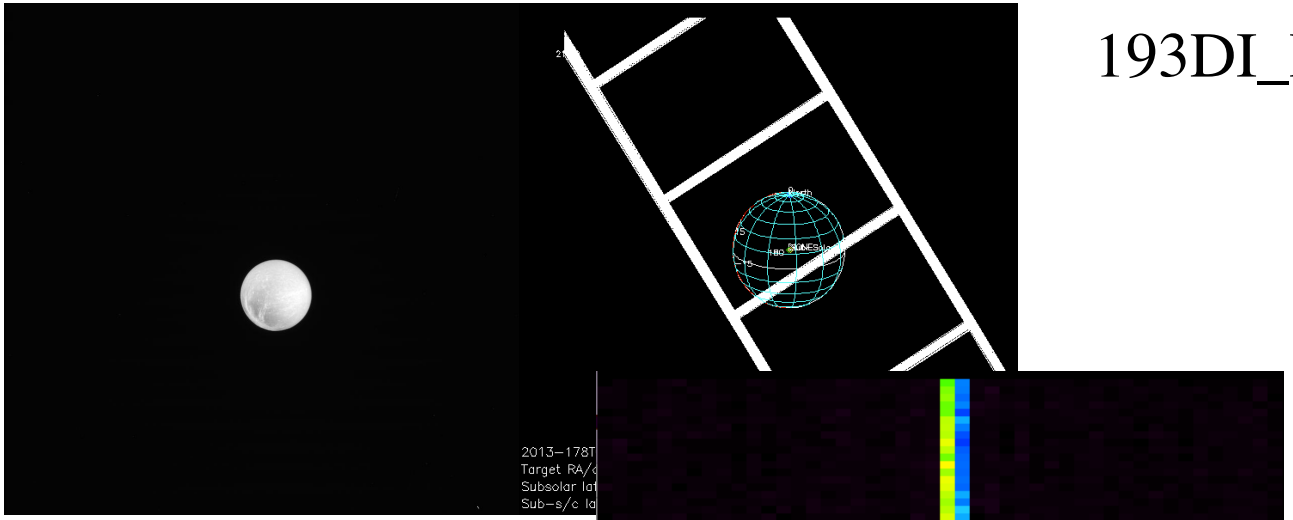


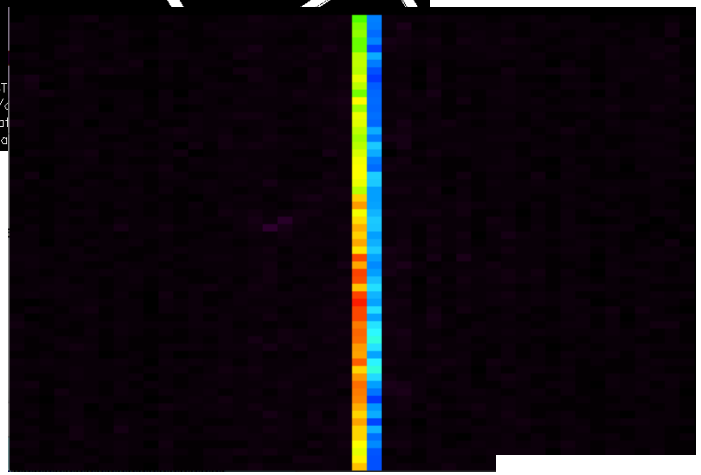
Ingress

Spectra of I, I_0 (counts per integration period vs wavelength)

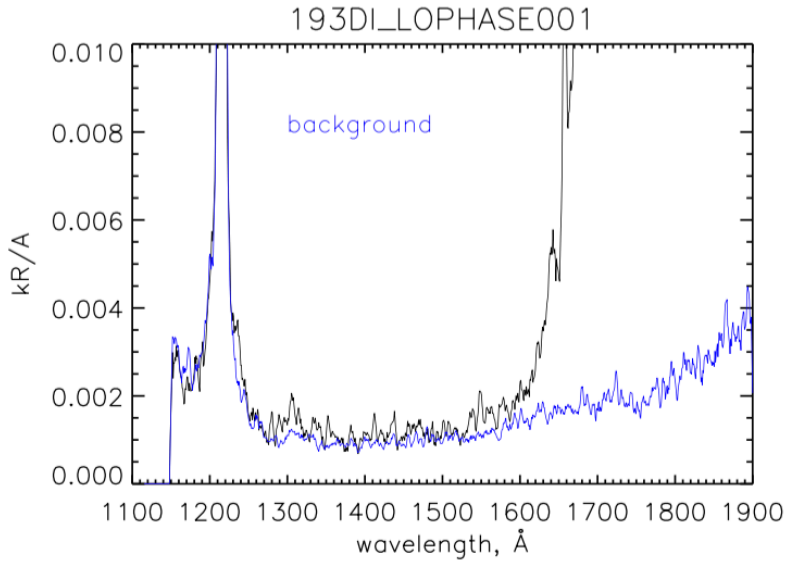


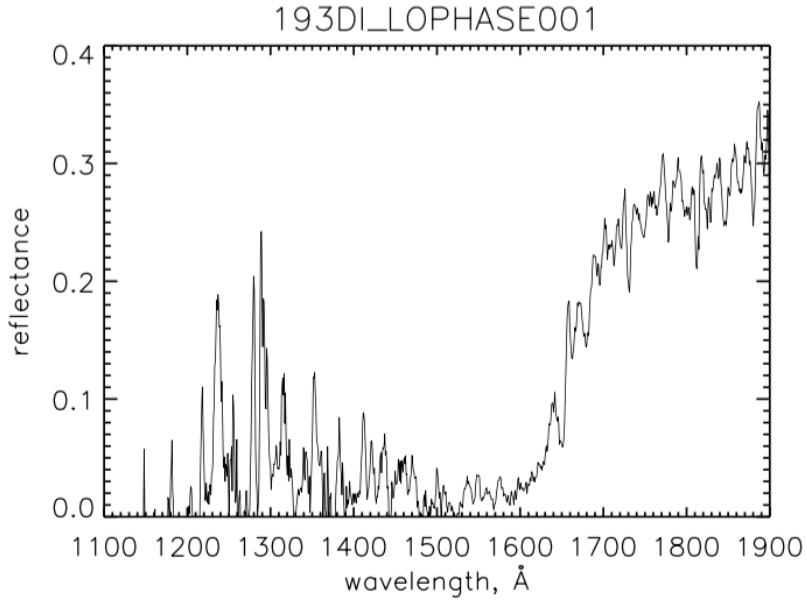
Spectrum of I/I_0
Plot is too noisy to be of value; exposure of 1 sec plus low signal in uv led to very low

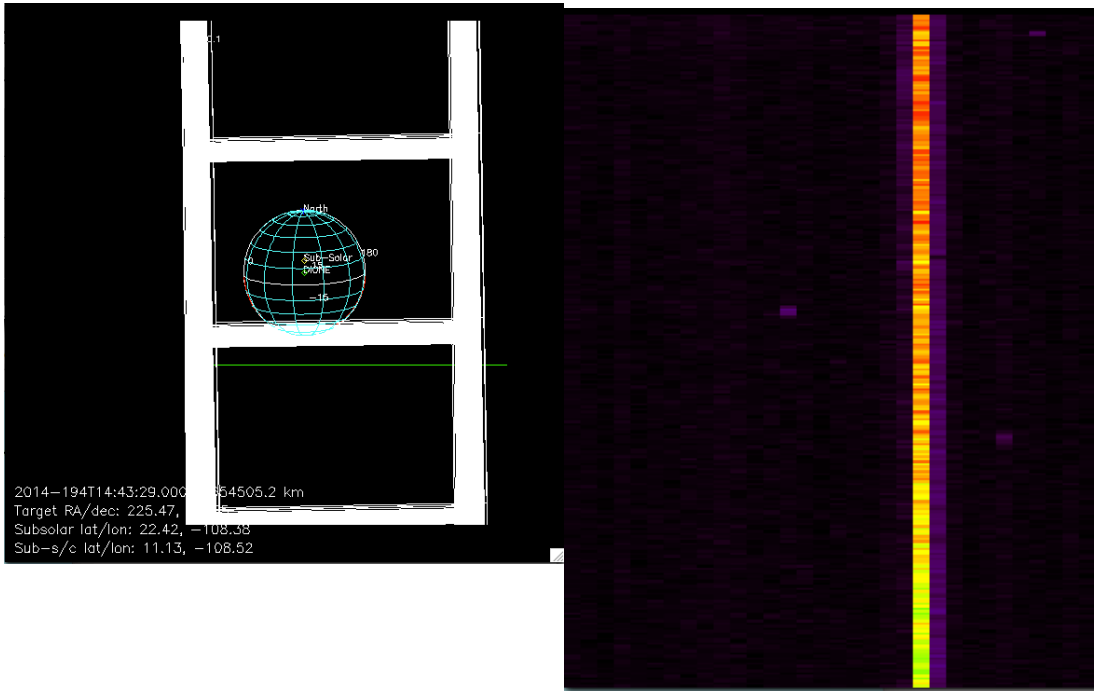




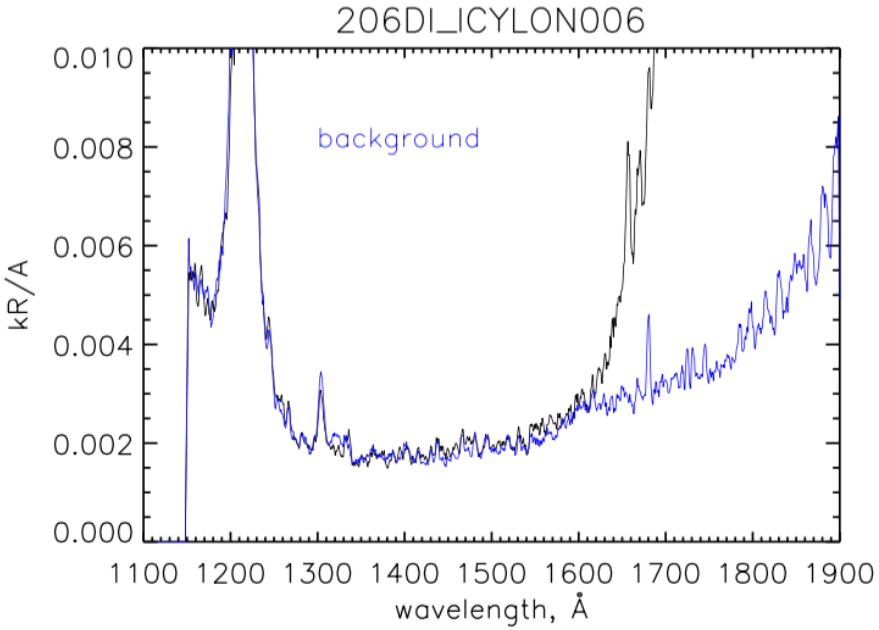
193DI_LOPHASE001_PRIME
2013-178T07:35
Alt=1,327,562 km
Longitude=11°W
Latitude=18°N
Phase=1.26°

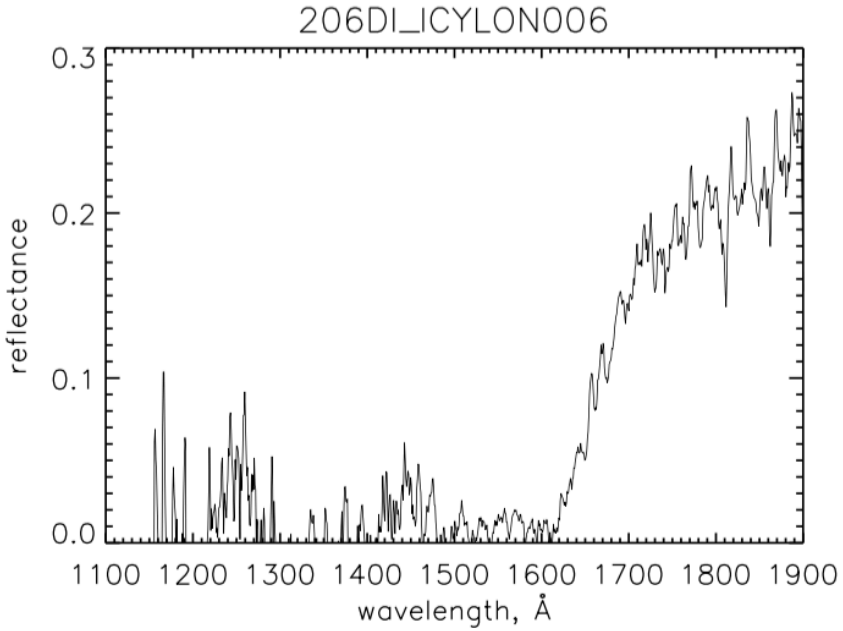




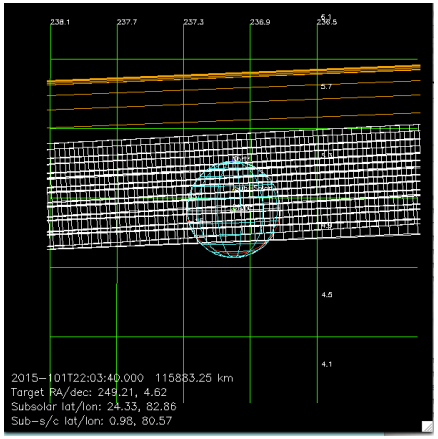


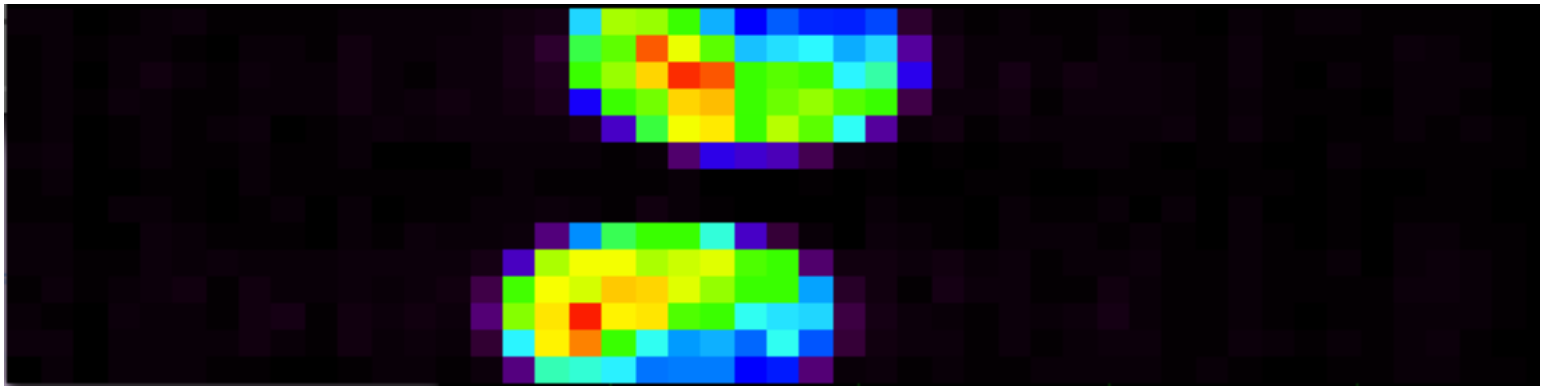
206DI_ICYLON006_PRIME
2014-194T14:44
Alt=1,492,800
Longitude=134.7°W
Latitude=10.2°N
Phase=12.4°



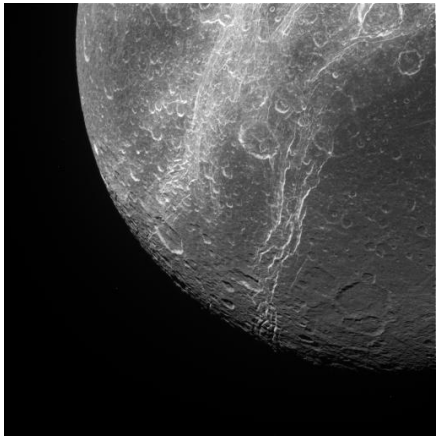


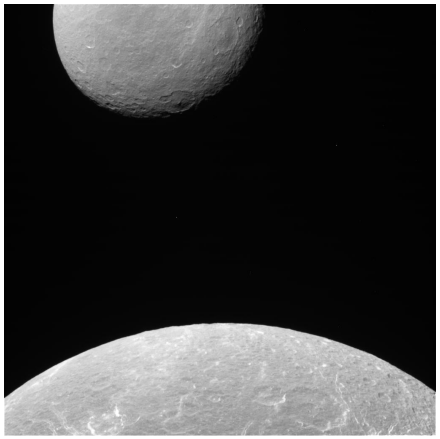
214DI_ICYLON001_CIRS
2015-101T22:05
Alt=112,658 km
Longitude=276°W
Latitude=1°N
Phase=24°

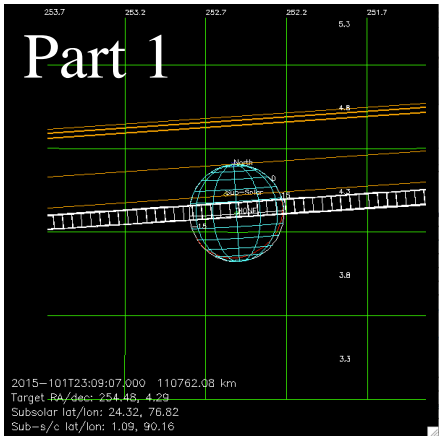


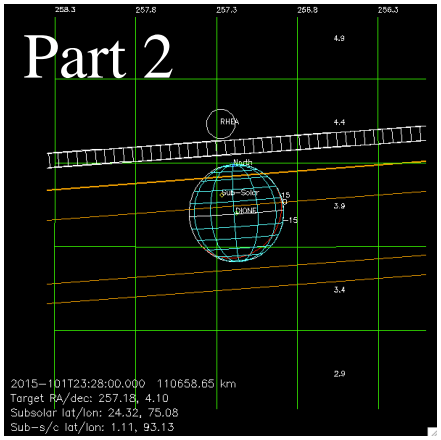


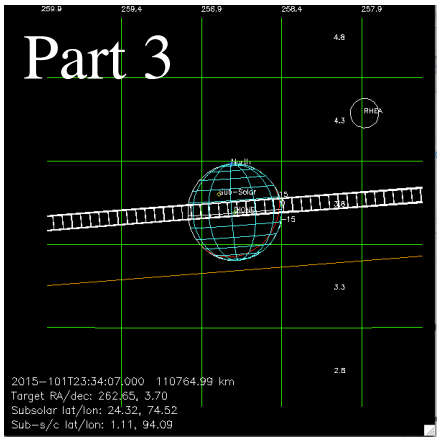
214DI_ICYLON002_ISS
2015-101T23:11
Alt=110,135 km
Longitude=269°W
Latitude=1°N
Phase=27°



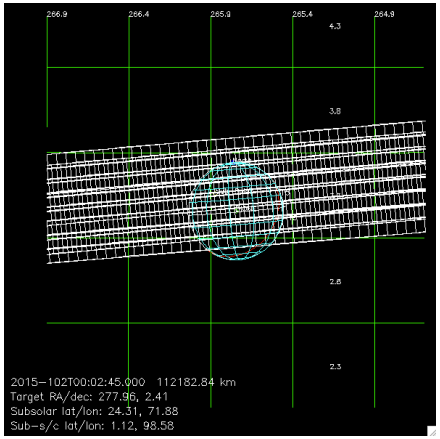


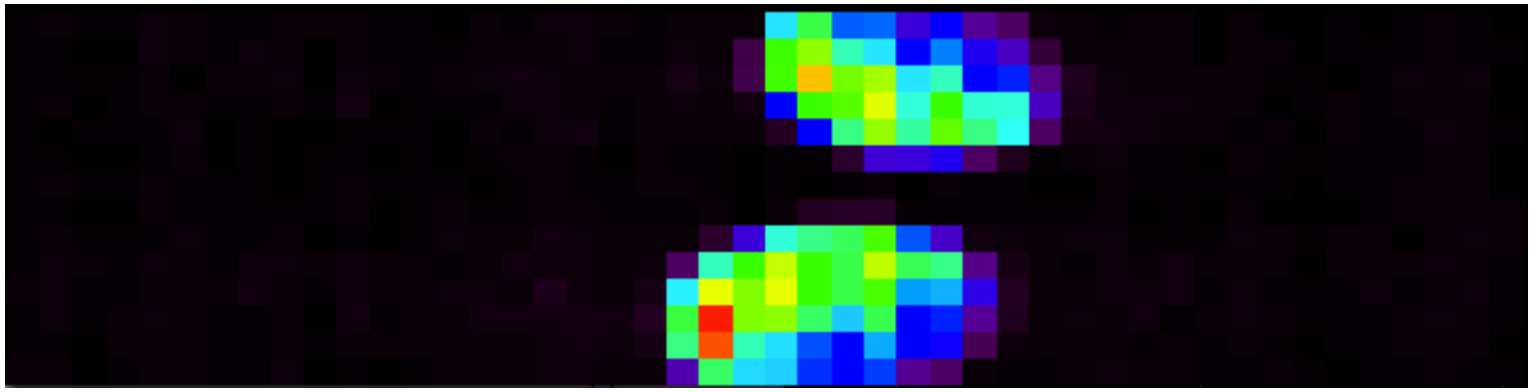


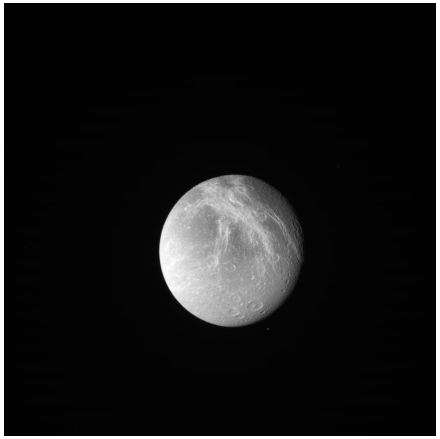


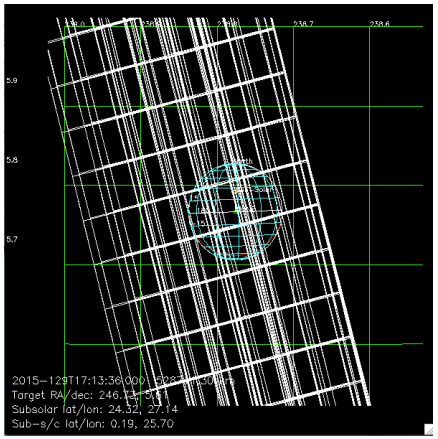


214DI_ICYLON003_CIRS
2015-102T00:04
Alt=114,447 km
Longitude=258°W
Latitude=1°N
Phase=39°

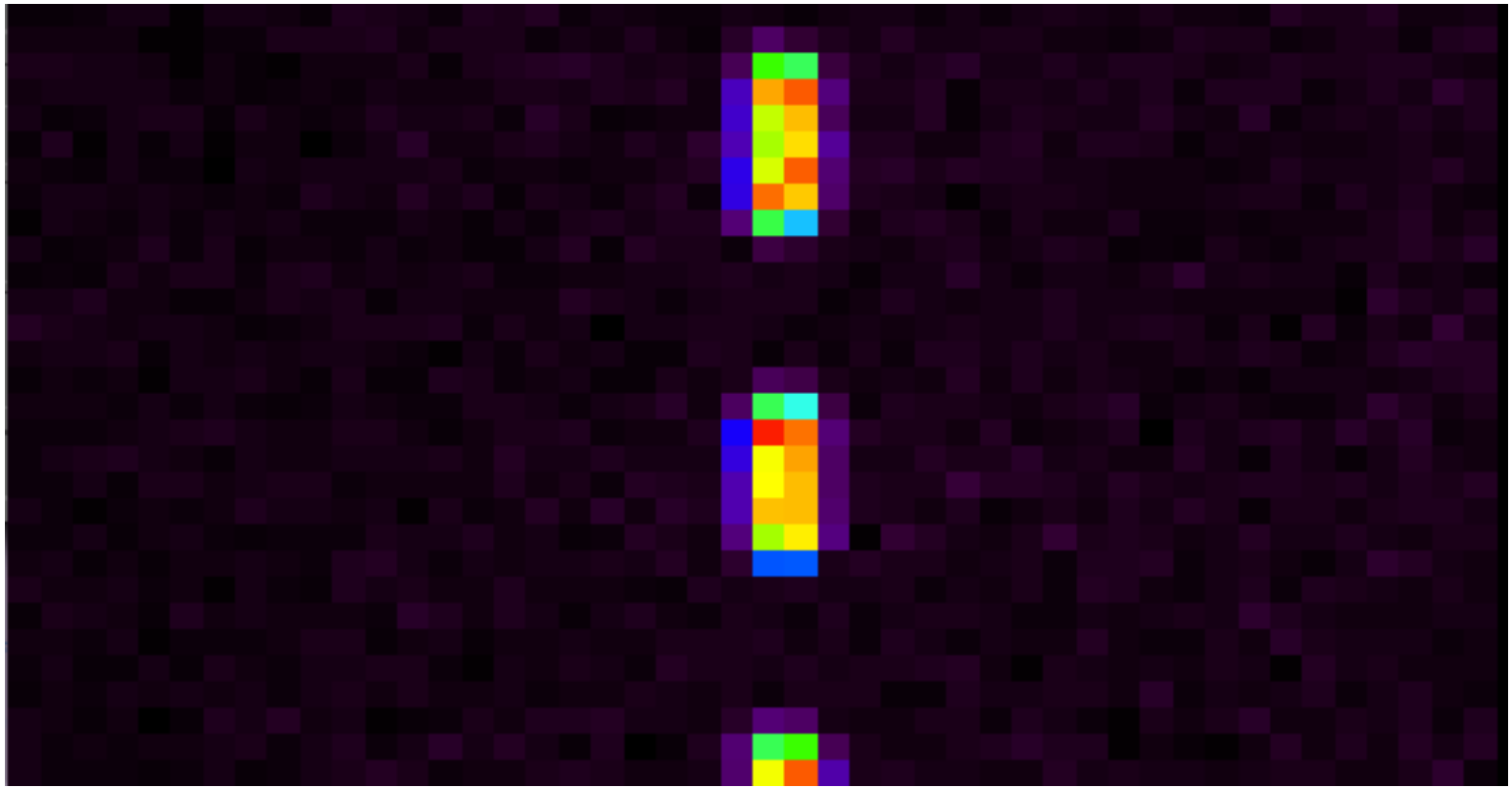






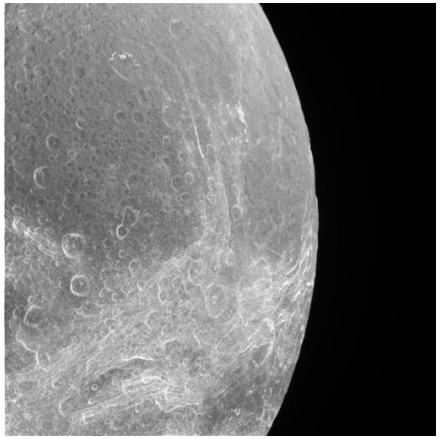


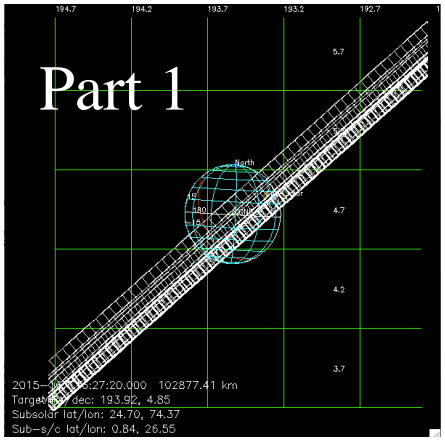
215DI_ICYLON001_CIRS
2015-129T17:14
Alt=515,169 km
Longitude=333°W
Latitude=0.2°N
Phase=25°

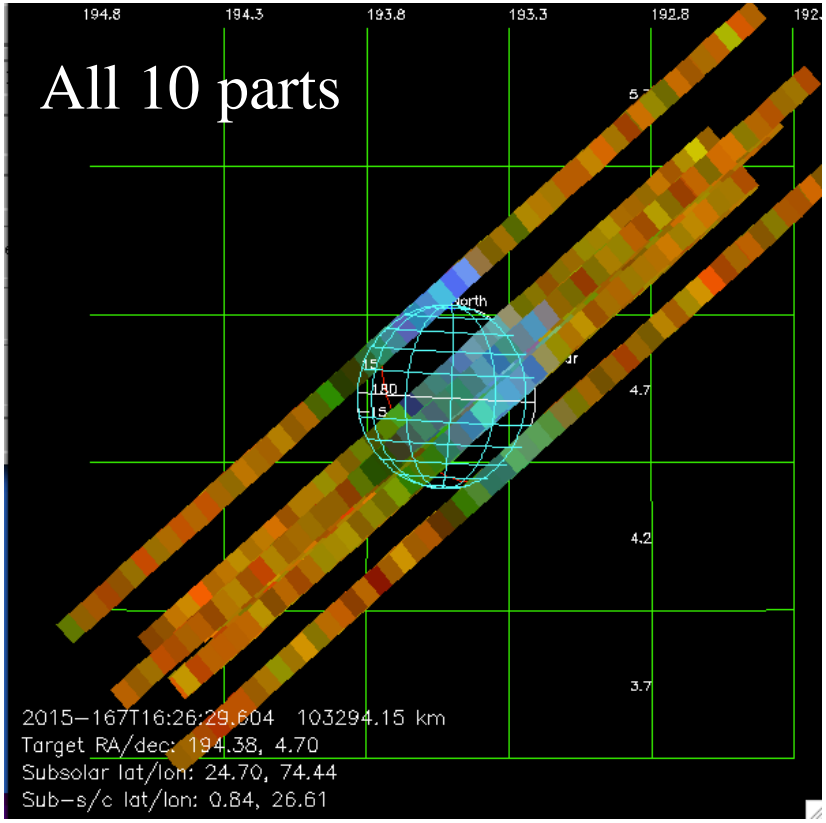


10-panel mosaic

217DI_ICYLON003_ISS
2015-167T16:26
Alt=96,092 km
Longitude=334°W
Latitude=0.88°N
Phase=52°

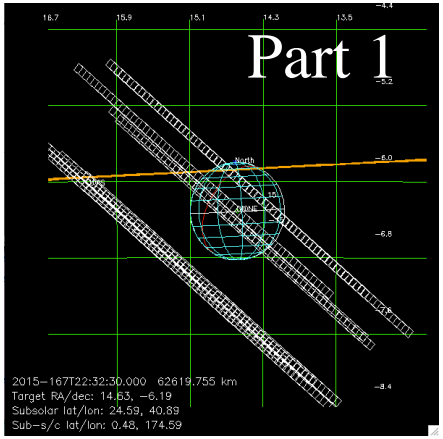


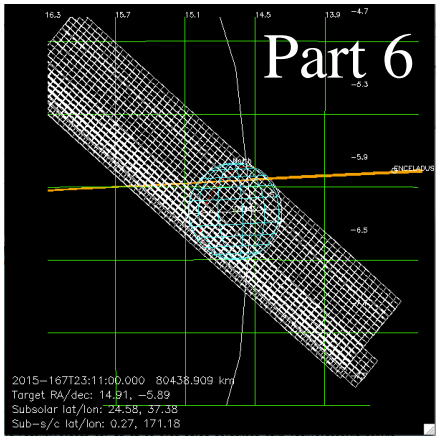


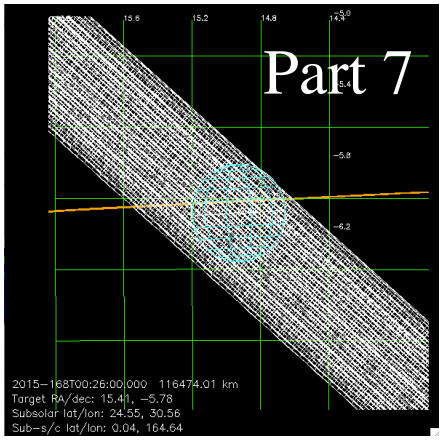


8-part

217DI_ICYLON003_CIRS
2015-167T22:33
Alt=66,651 km
Longitude=186°W
Latitude=0.4°N
Phase=128°

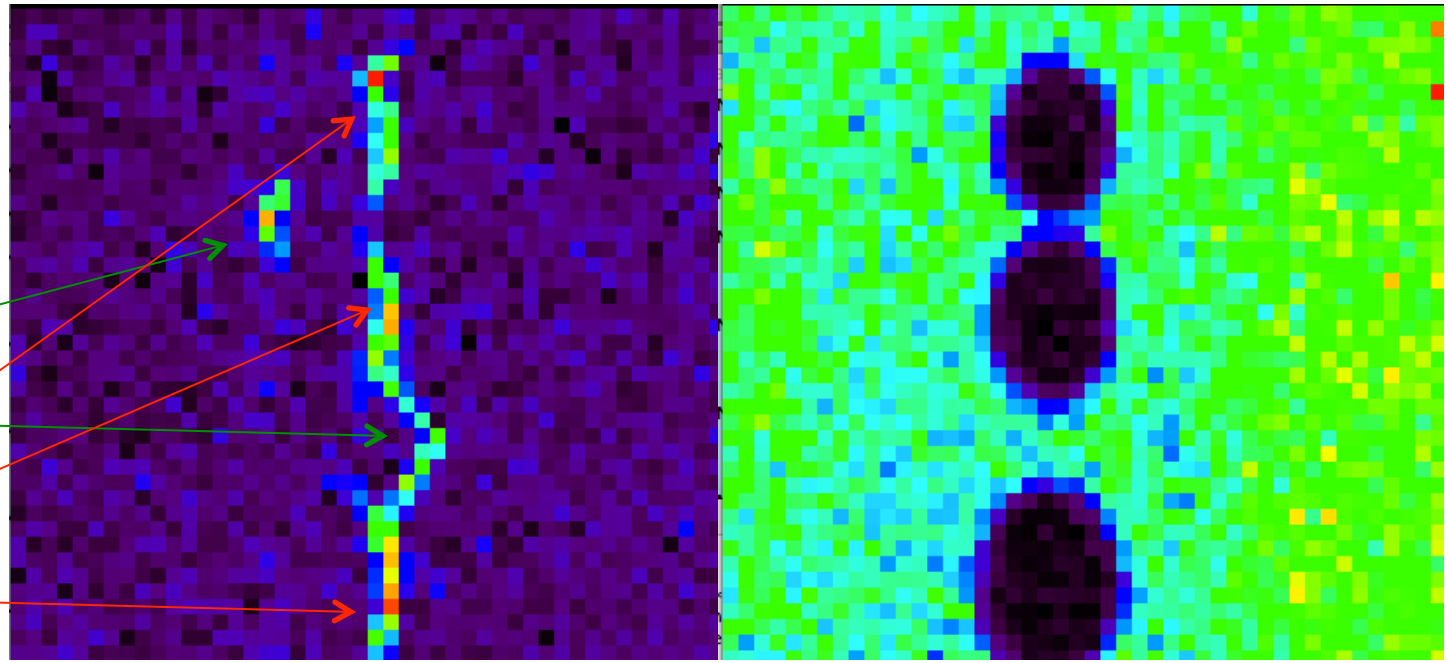






Part 7 long waves

Part 7 Ly-a

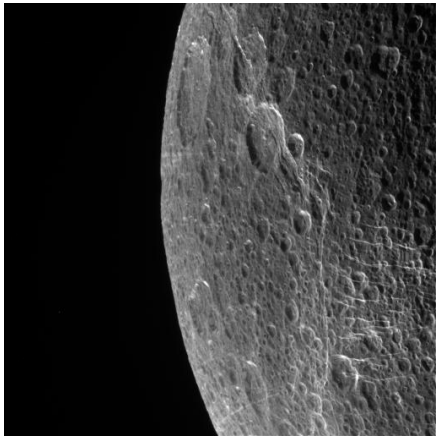


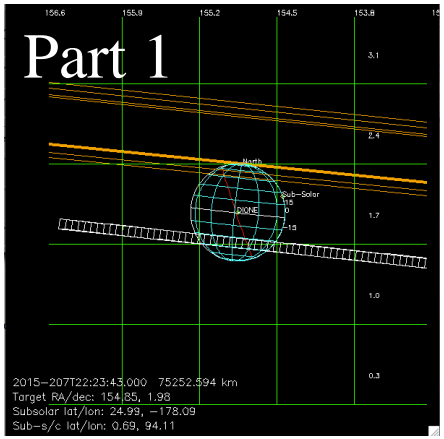
rings

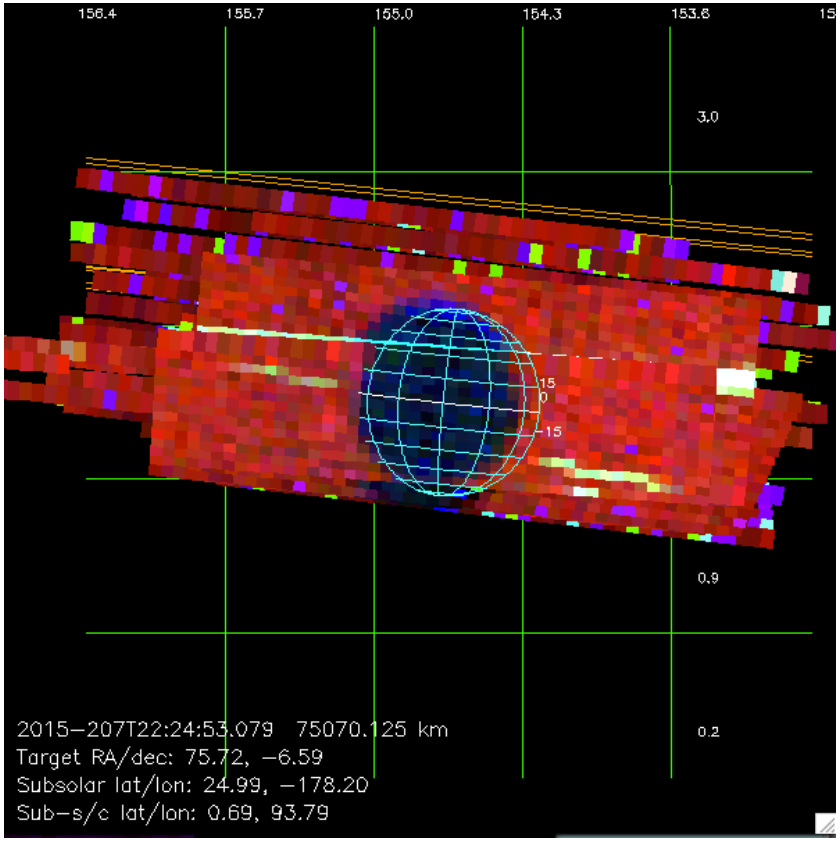
Bright limb

22-part

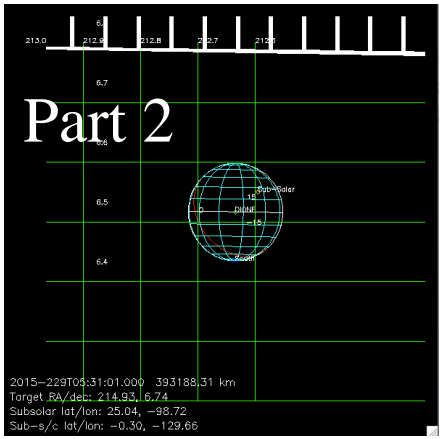
219DI_ICYLON001_CIRS
2015-207T22:24
Alt=74,693 km
Longitude=266°W
Latitude=0.7°N
Phase=88°

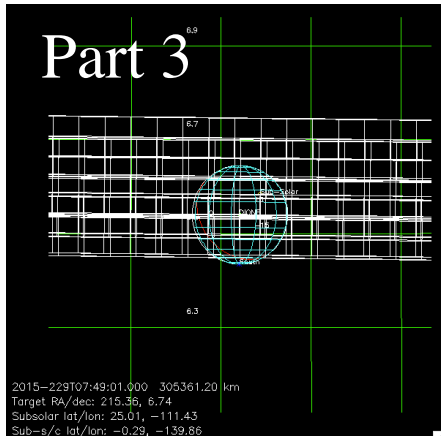




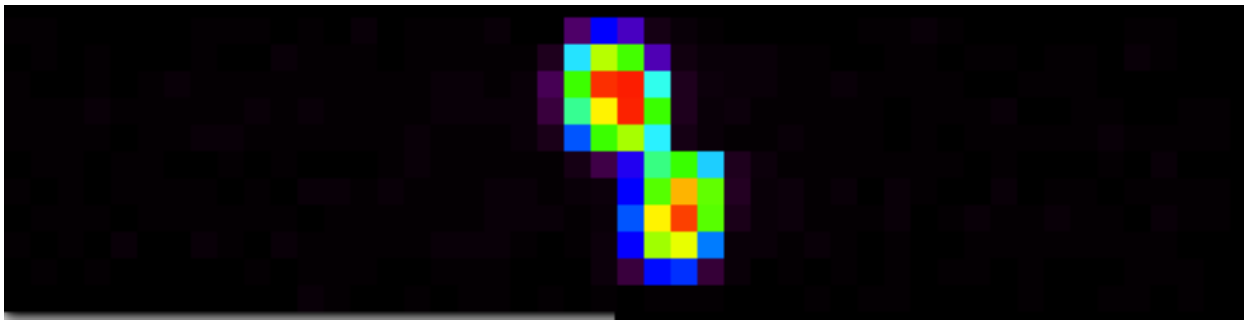


220DI_ICYLON001_CIRS
2015-229T05:18
Altitude=34,525 km
Longitude=14°W
Latitude=0.5°N
Phase=66°

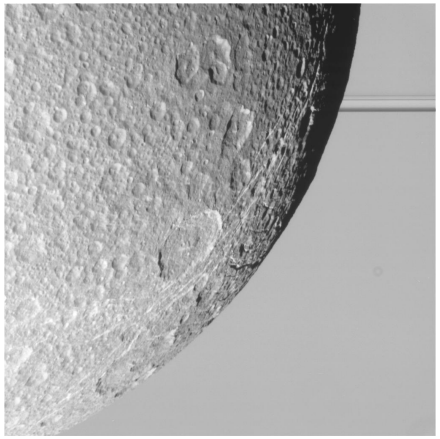


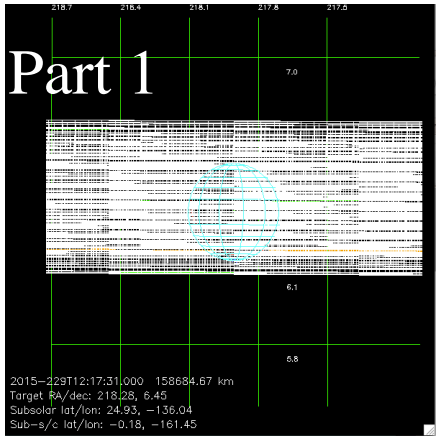


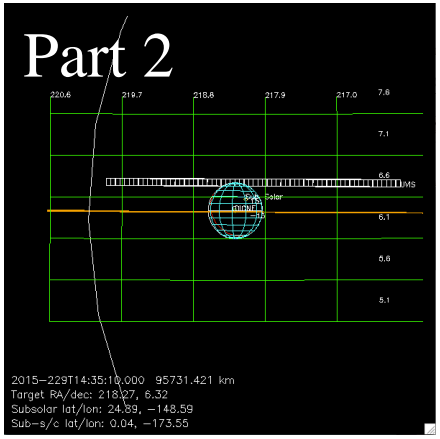
Not clear about pointing for Parts 1, 4

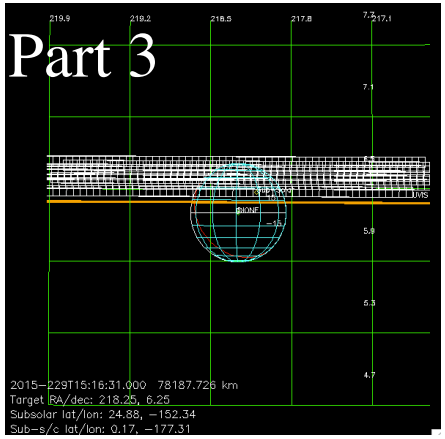


220DI_ICYLON002_CIRS
2015-229T12:18
Alt=126,845 km
Longitude=167°W
Latitude=0.1°S
Phase=35°

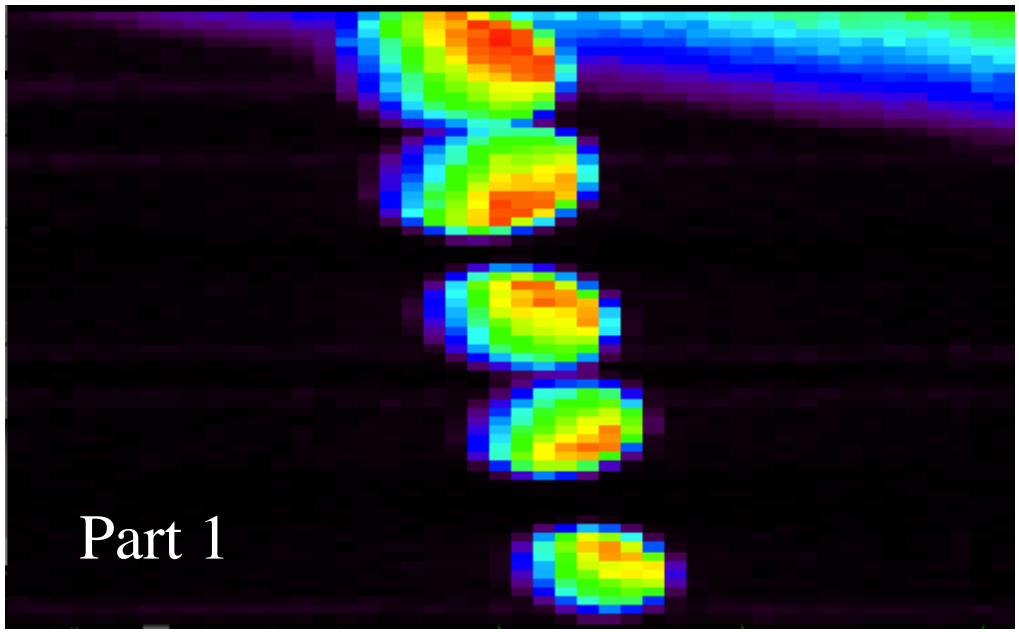




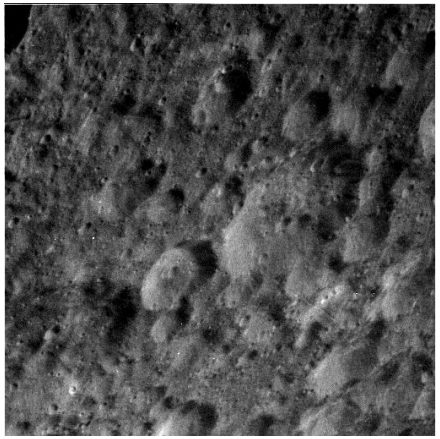


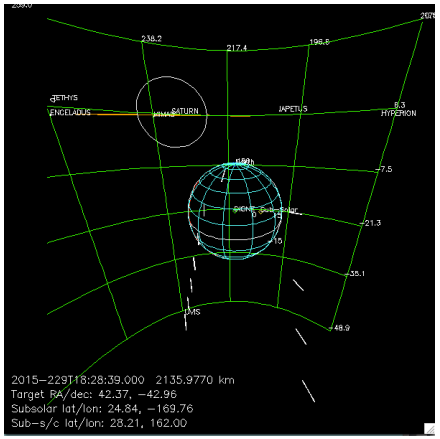


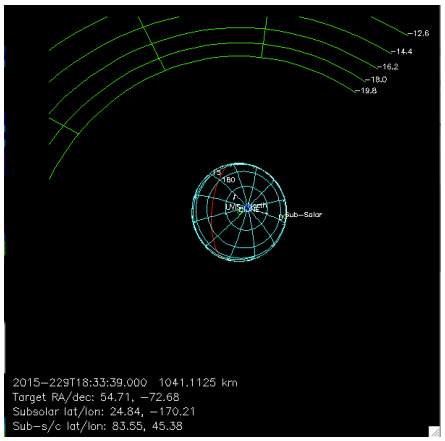
(in front of Saturn for parts 2 & 3)



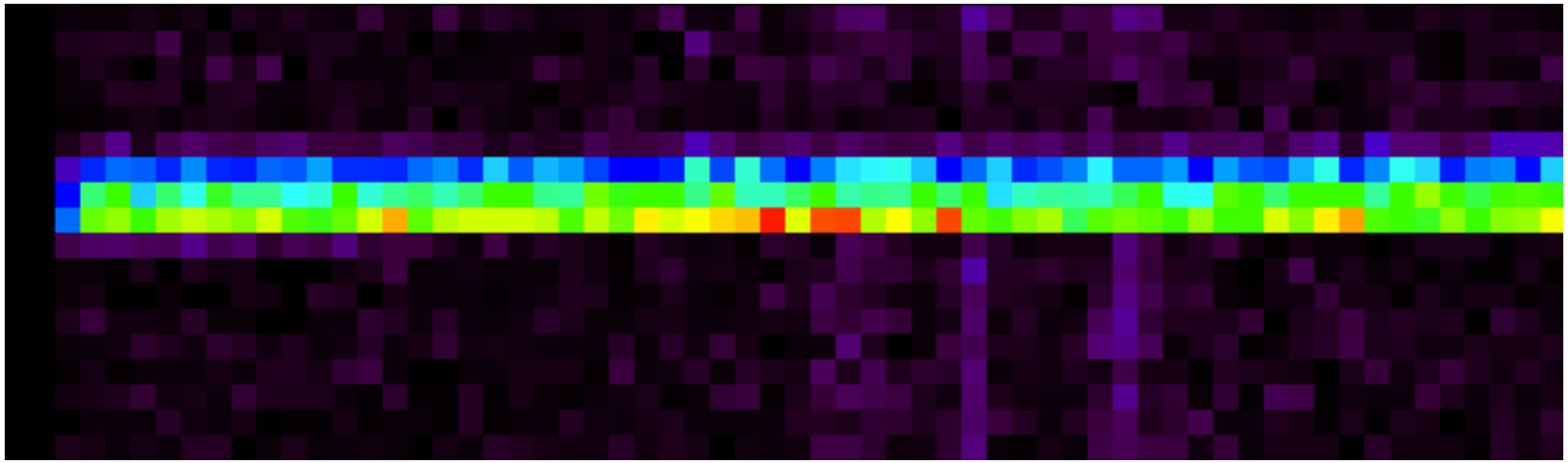
220DI_ICYMAP001_ISS
2015-229T18:28



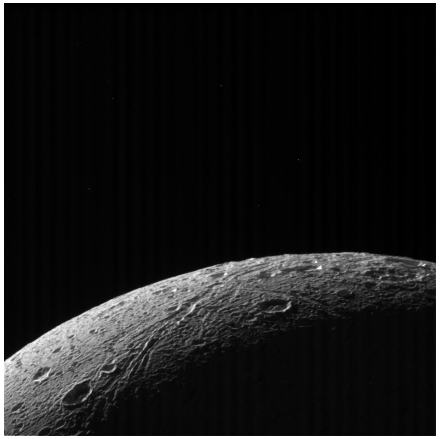


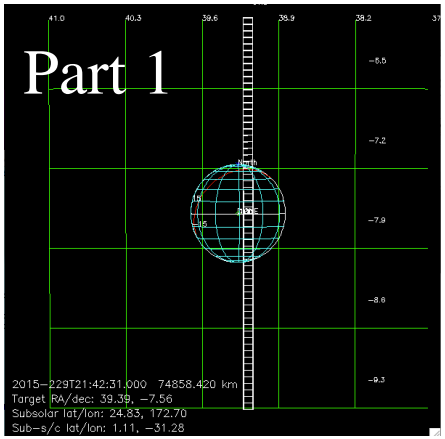


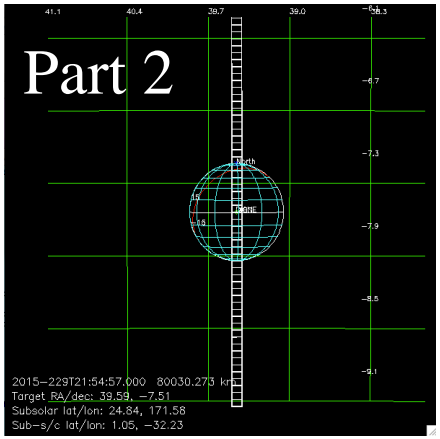
Dione went through boresights; pointing was for gravity

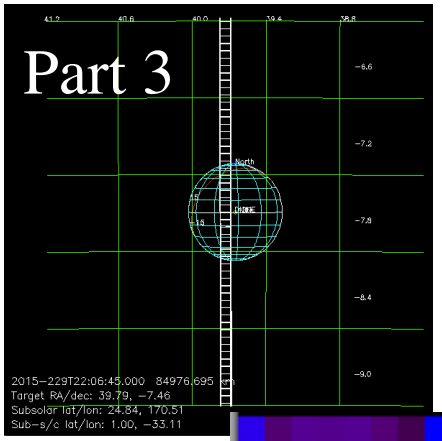


220DI_ICYLON003_CIRS
2015-229T21:43
Alt=75,956 km
Longitude=32°W
Latitude=1°N
Phase=145°





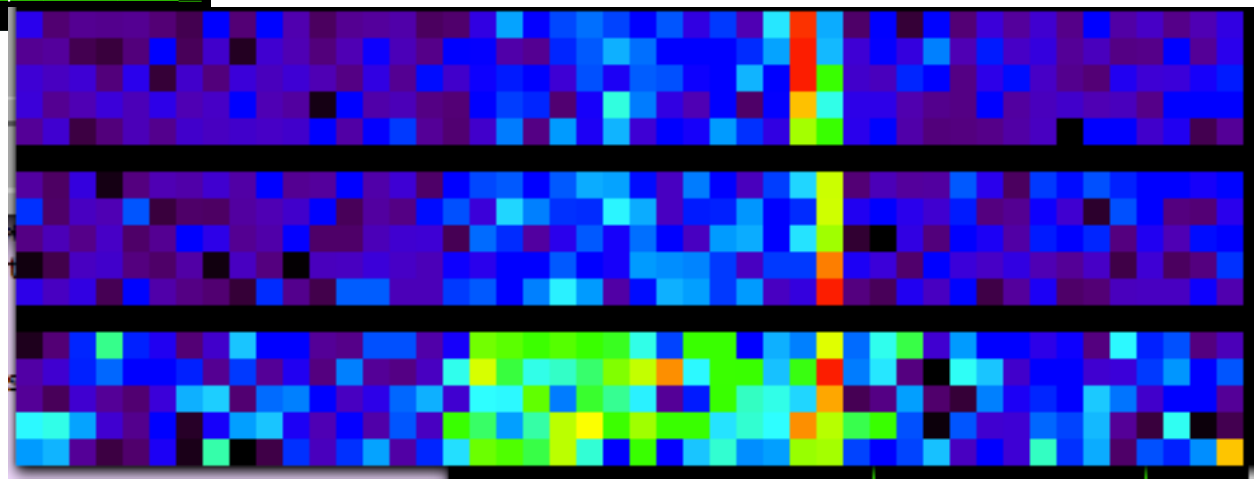




Part 3

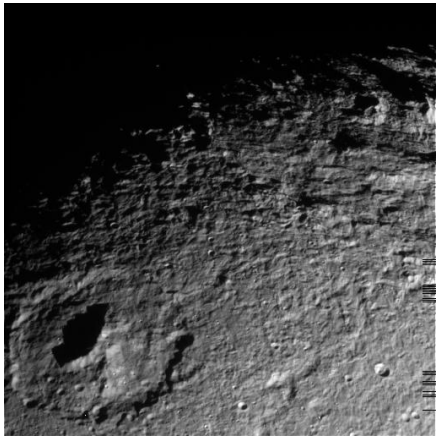
Part 2

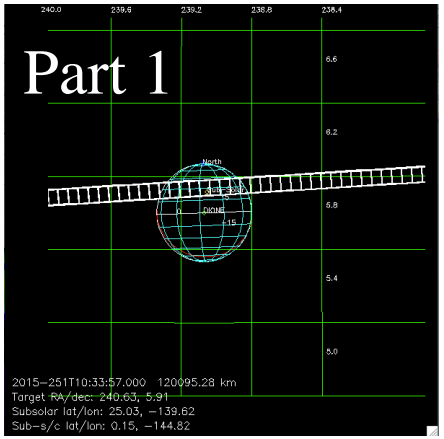
Part 1
(Saturn shine)

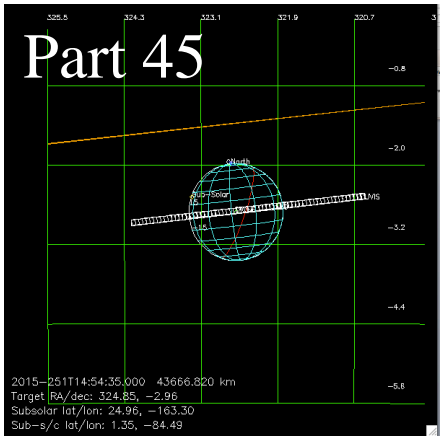


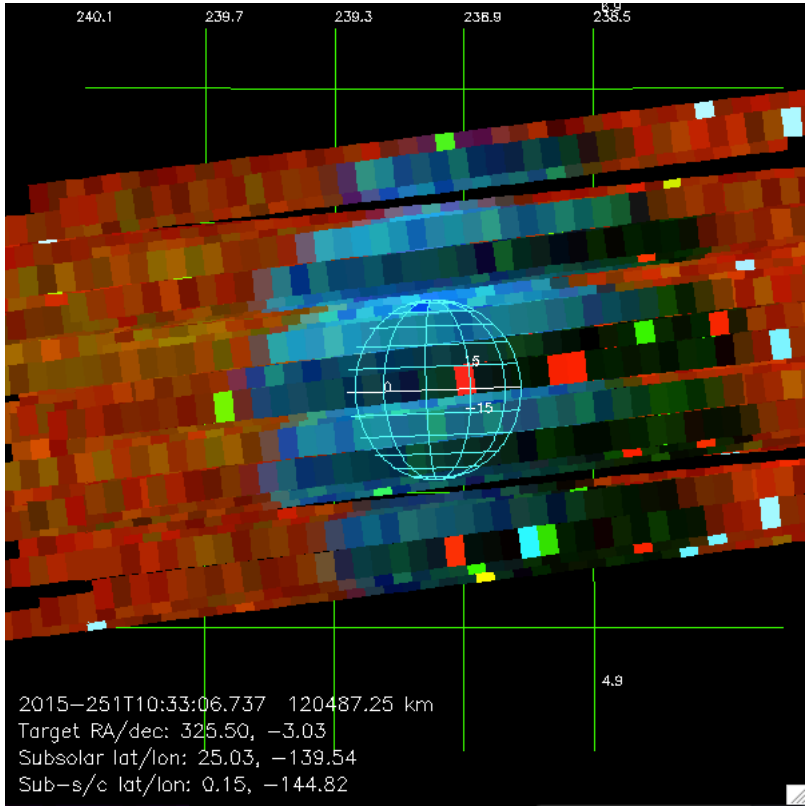
45-panel mosaic

221DI_ICYLON001_ISS
2015-251T10:32
Alt=116,282 km
Longitude=145°W
Latitude=0.1°N
Phase=25°

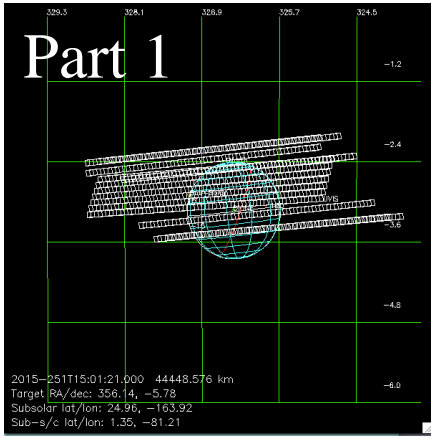


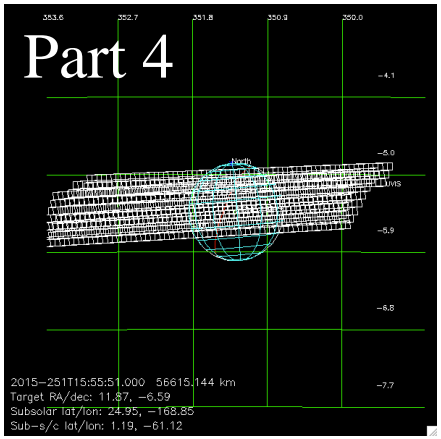


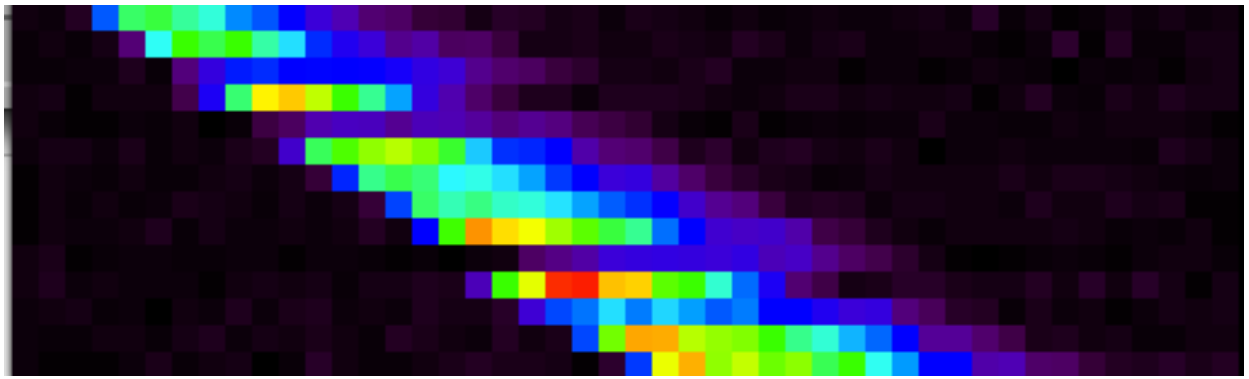




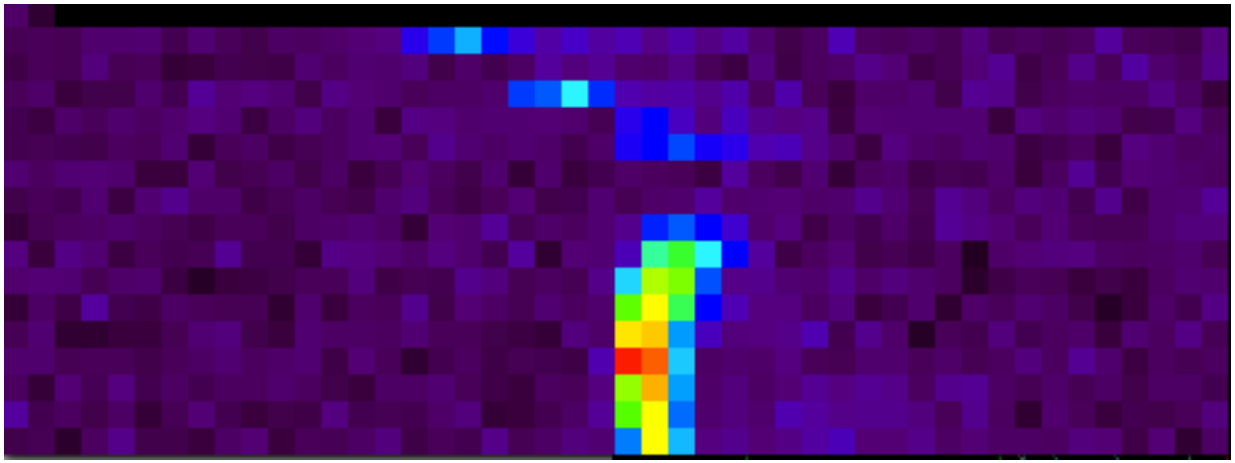
221DI_ICYLON001_CIRS
2015-251T15:04
Alt=51,249 km
Longitude=68°W
Latitude=1.3°N
Phase=97°





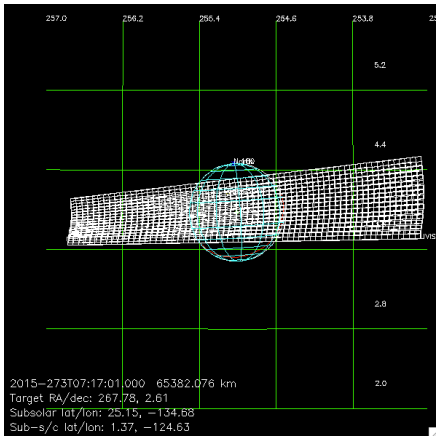


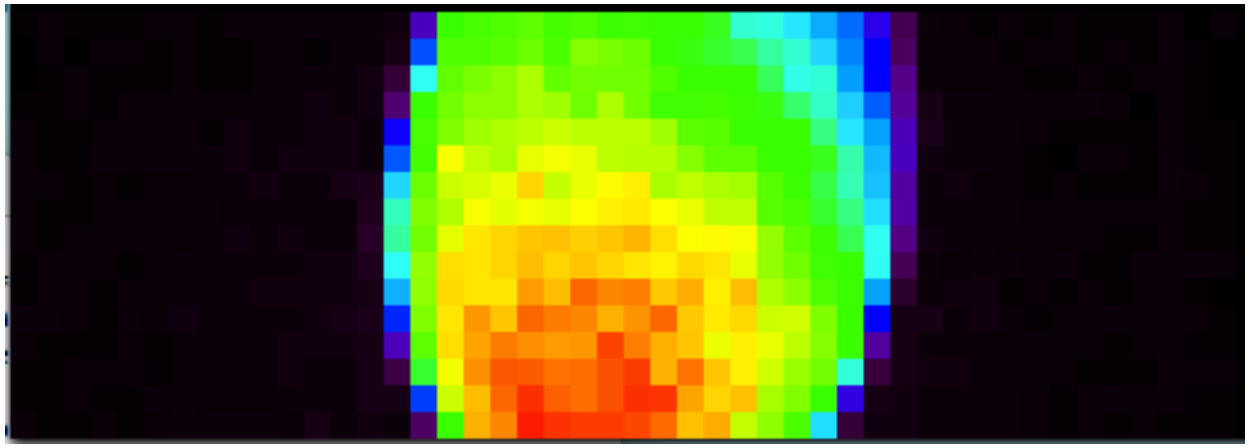
Part 1



Part 4

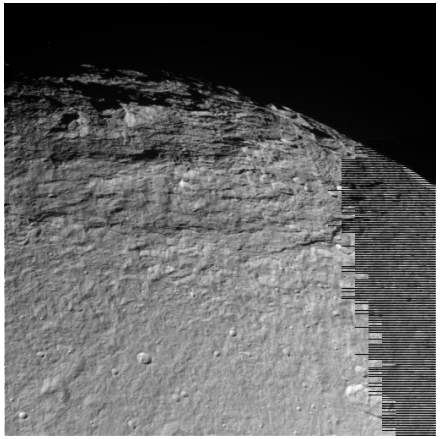
222DI_ICYLON001_CIRS
2015-273T07:18
Altitude=58,191 km
Longitude=120°W
Latitude=1.6°N
Phase=28.5°

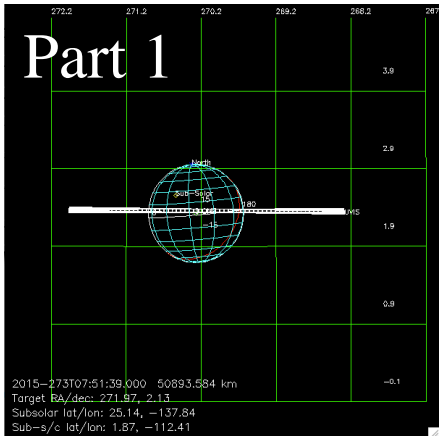


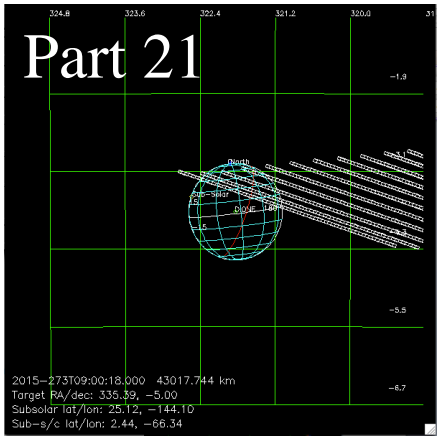


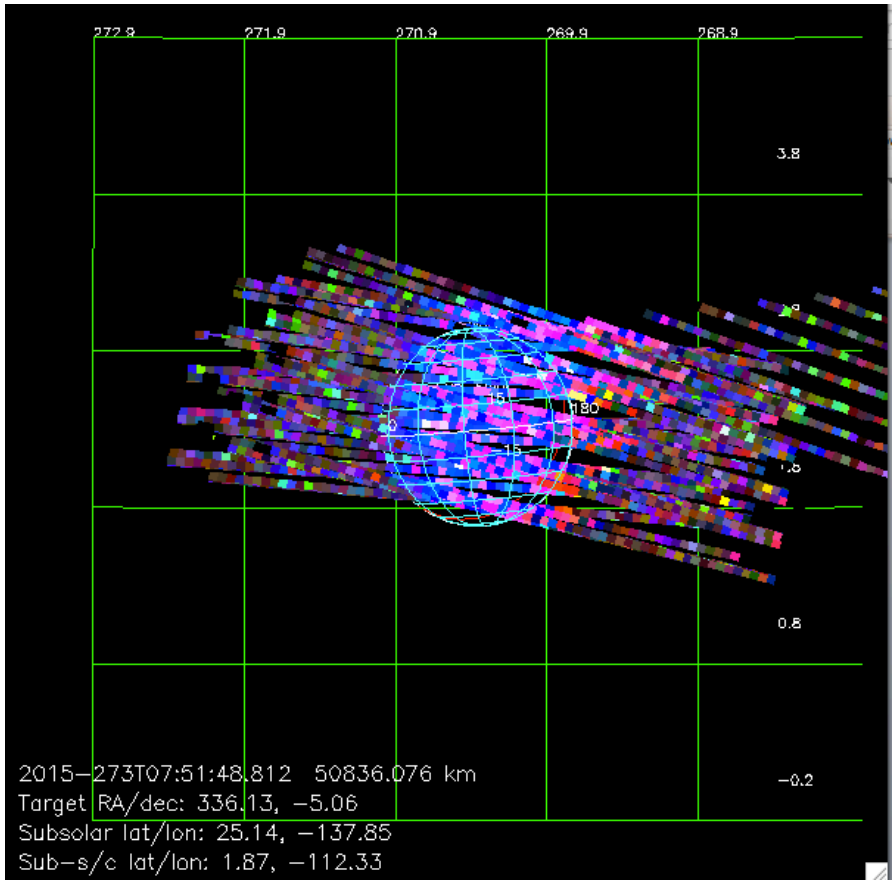
21-part

222DI_ICYMAP001_ISS
2015-273T07:50
Alt=49,987 km
Longitude=112°W
Latitude=2°N
Phase=34°









222DI_ICYLON002_CIRS

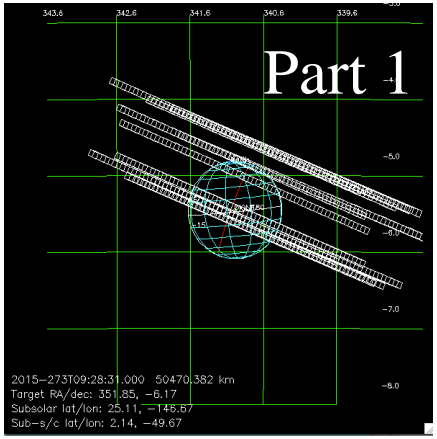
2015-273T09:29

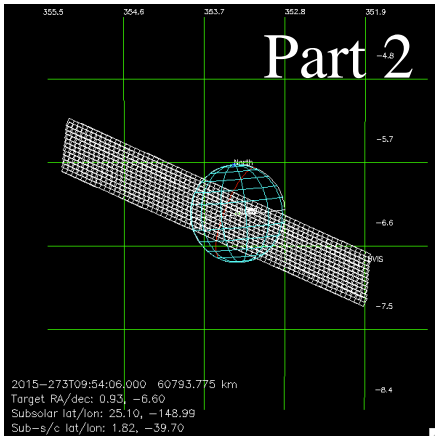
Alt=54,124 km

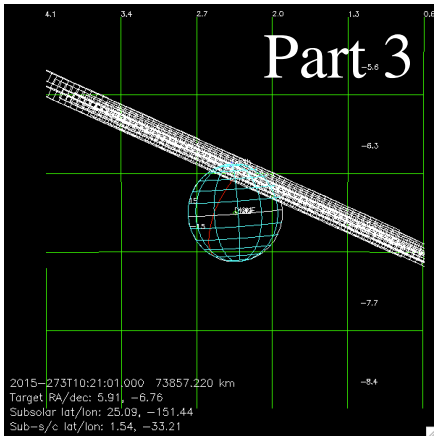
Longitude=45°W

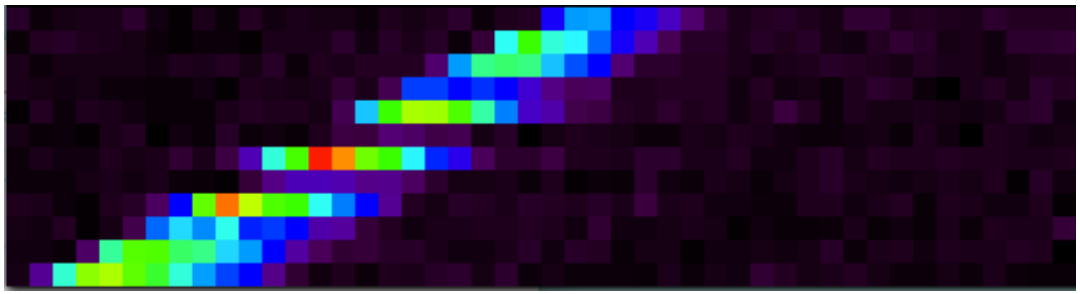
Latitude=2°N

Phase=100°

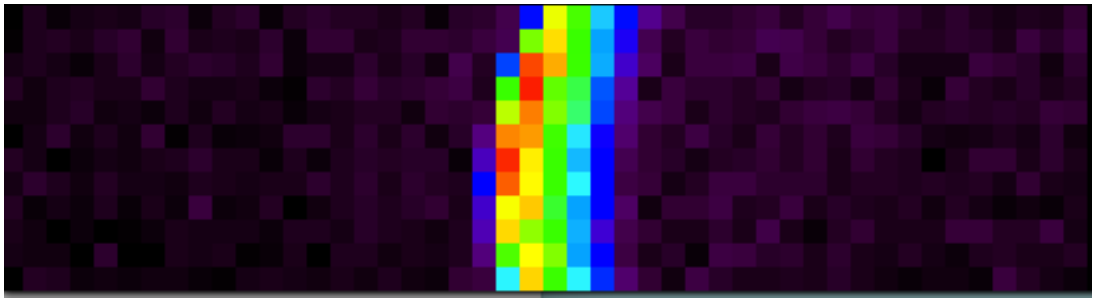




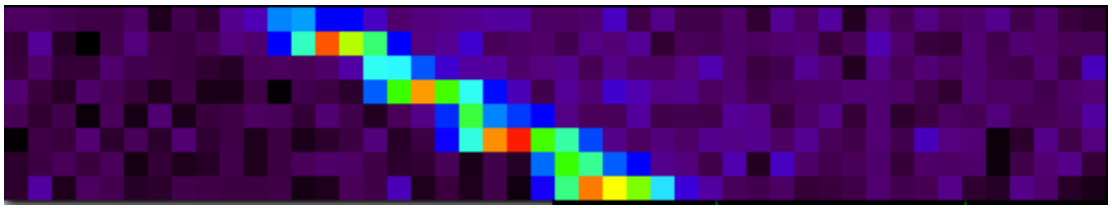




Part 1



Part 2



Part 3

223DI_ICYLON001_CIRS

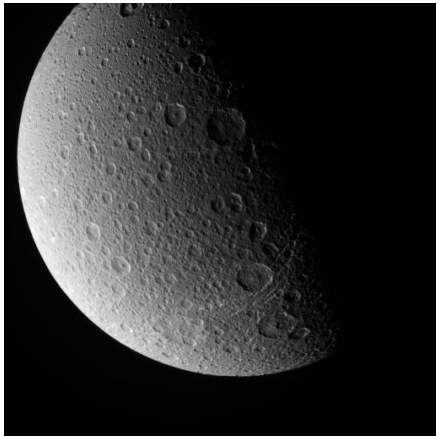
2015-287T01:23

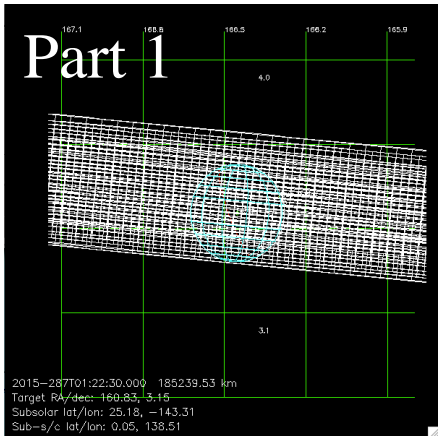
Altitude=57,137 km

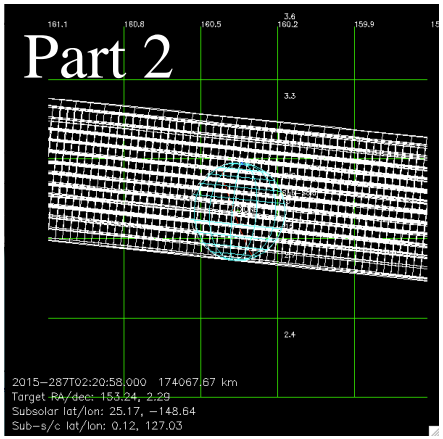
Longitude=18°W

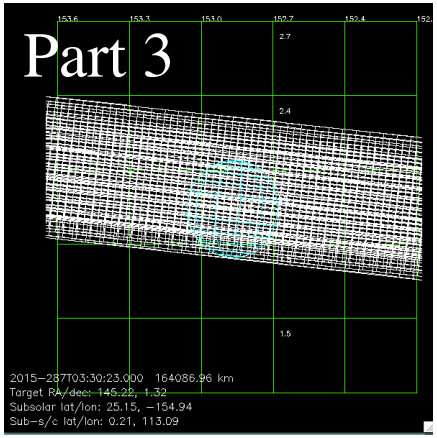
Latitude=0°N

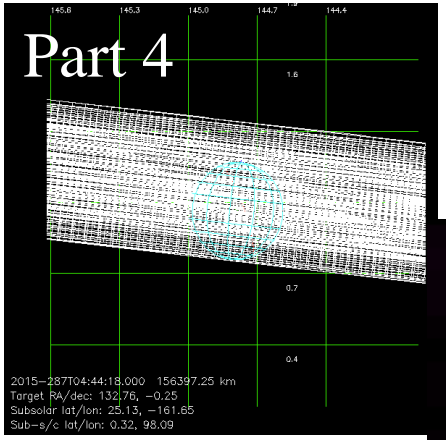
Phase=5.6°



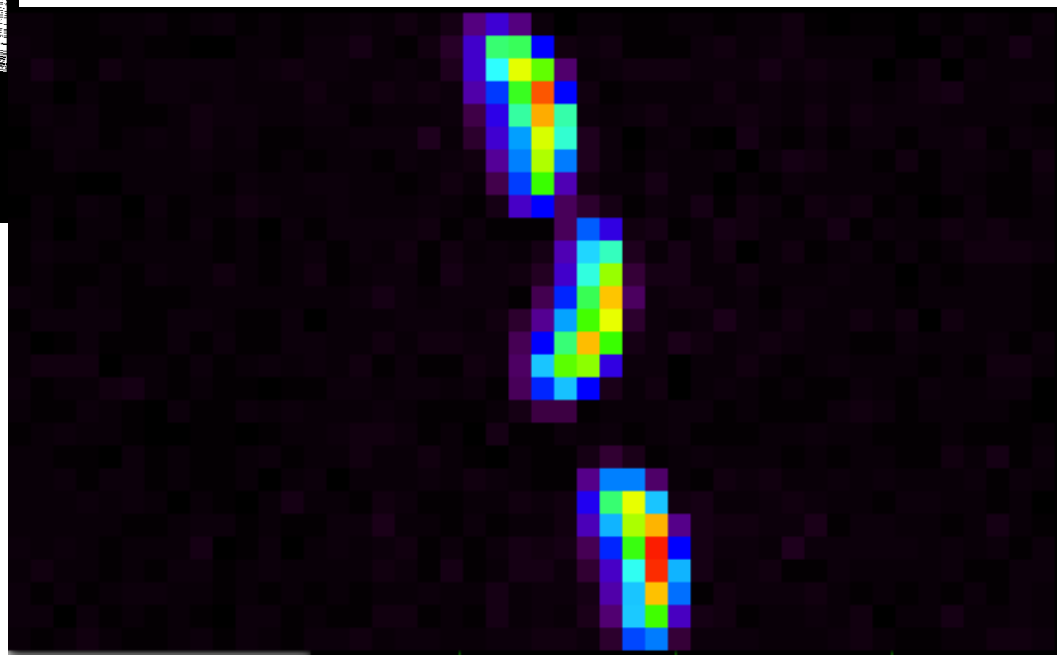




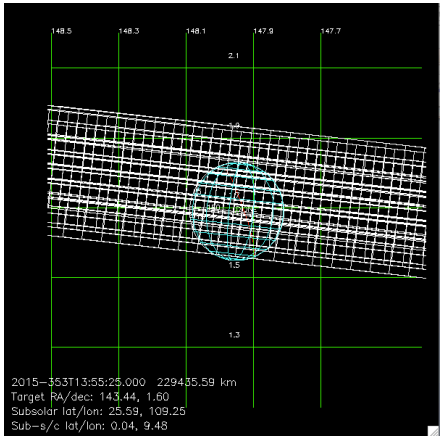




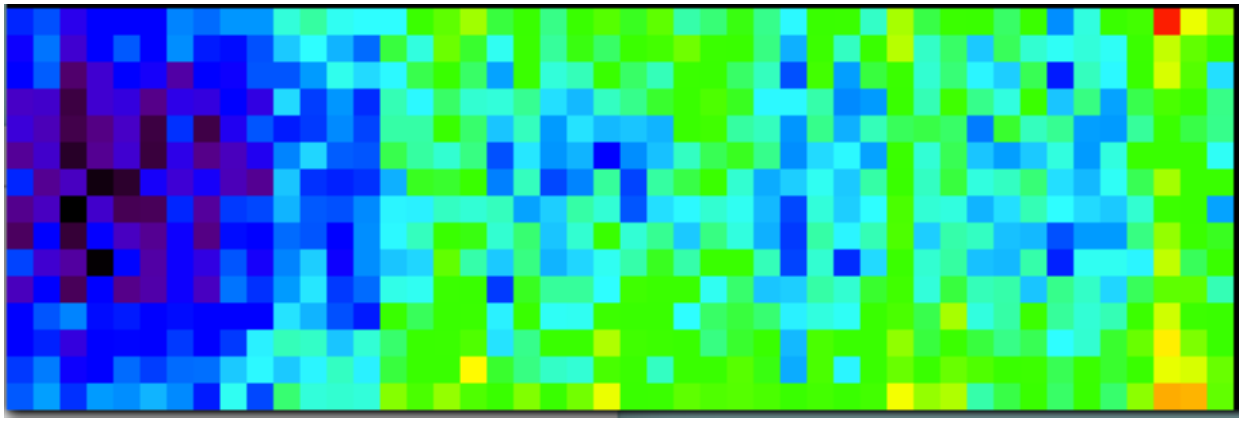
Part 1



228DI_ICYLON001_CIRS
2015-353T13:56
Alt=224,729 km
Longitude=354°W
Latitude=0°N
Phase=100.6°

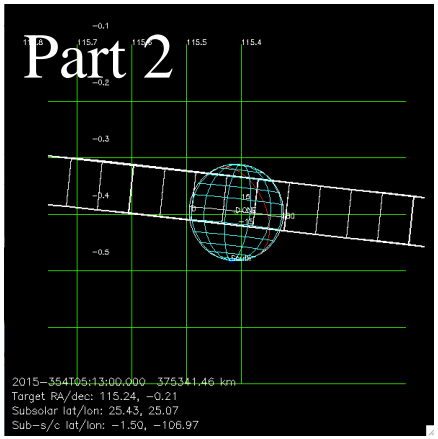


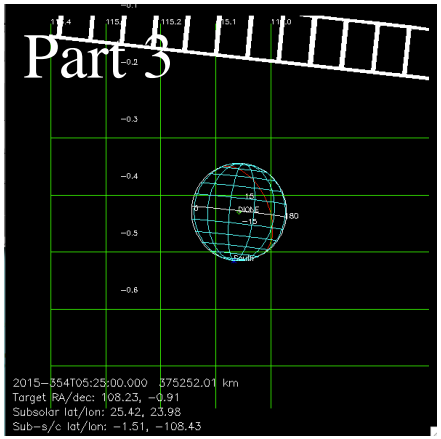
Rings are in slit …

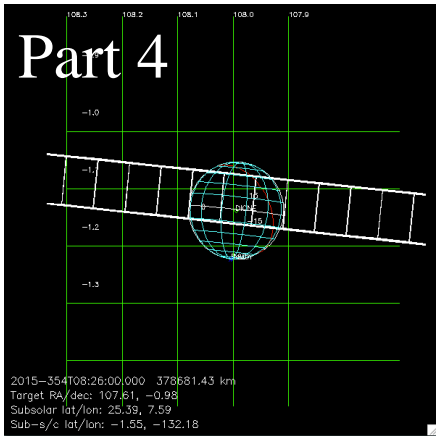


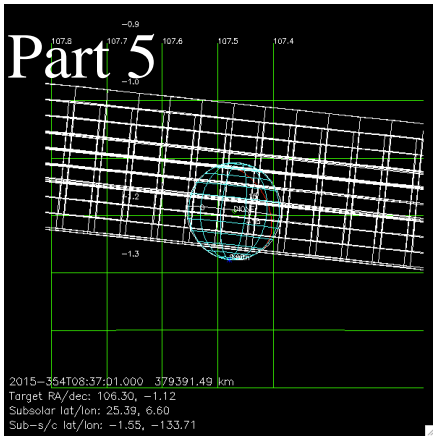
6 parts

228DI_ICYLON002_CIRS
2015-354T04:50
Altitude=374,757 km
Longitude=107°W
Latitude=1.5°S
Phase=128°





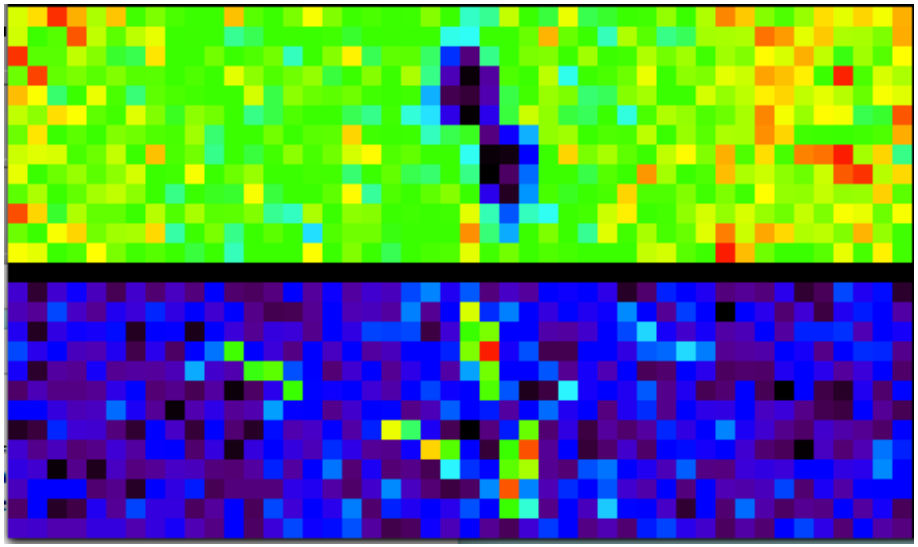




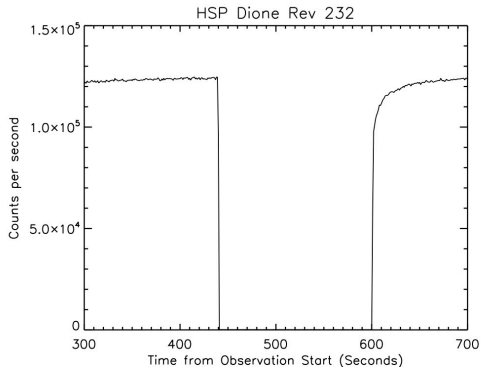
Part 5

Ly-a

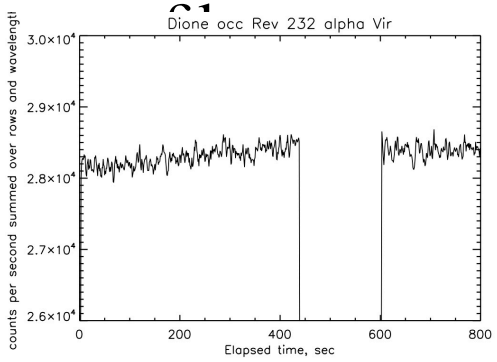
Long waves

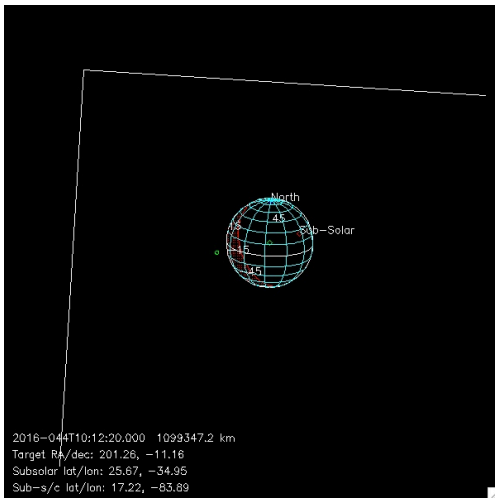


UVIS_232DI_ICYEXO001_PRIME
2016-044T10:05
Ingress lat/lon: -9.2 / 171.1
Egress lat/lon: 37.4 / 340.5
Star: Alpha Virginis



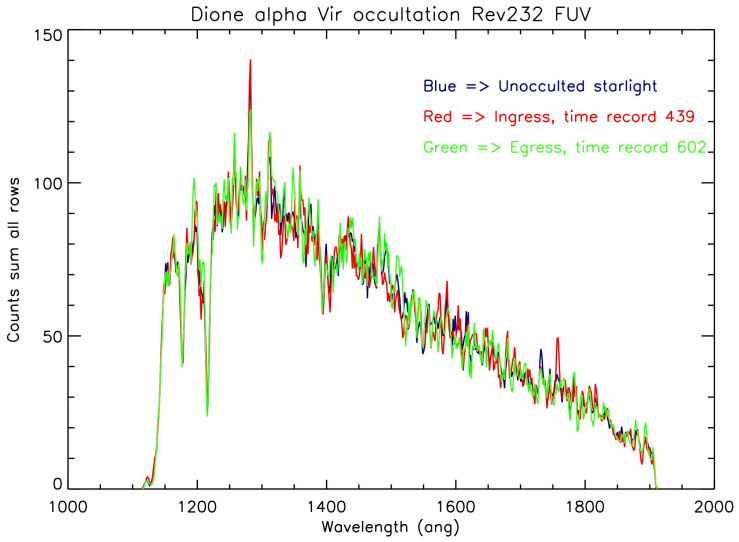
HSP and FUV

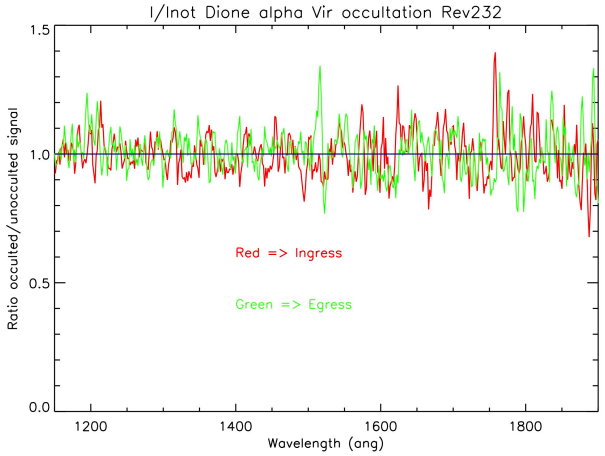




Ingress

Spectra of I, I_0 (counts per integration period vs wavelength)





Spectrum of I/I_0

UVIS_233DI_ICYEXO001_PRIME
2016-068T02:26
Ingress lat/lon: 22.1 / 54.8
Egress lat/lon: -4.3 / 229.0
Star: Alpha Virginis

An issue with the Deep Space Network resulted in the loss of the downlink of this data.

236DI_LOPHASE001_PIE

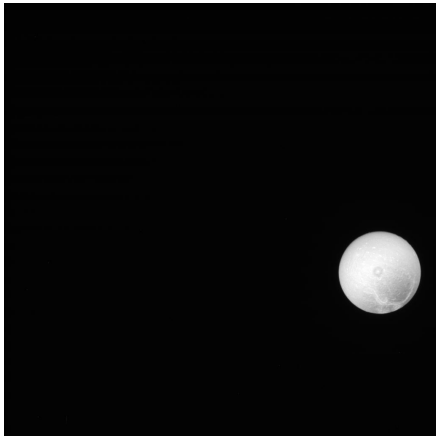
2016-155T00:08

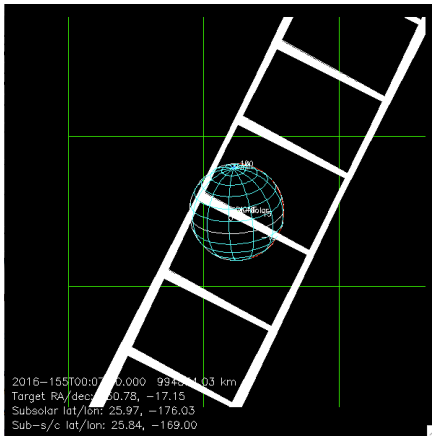
Alt=952,137 km

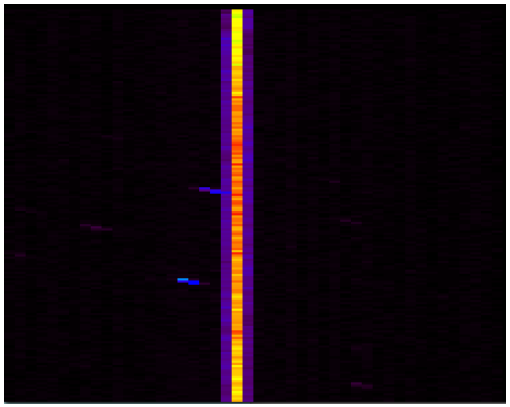
Longitude=189°W

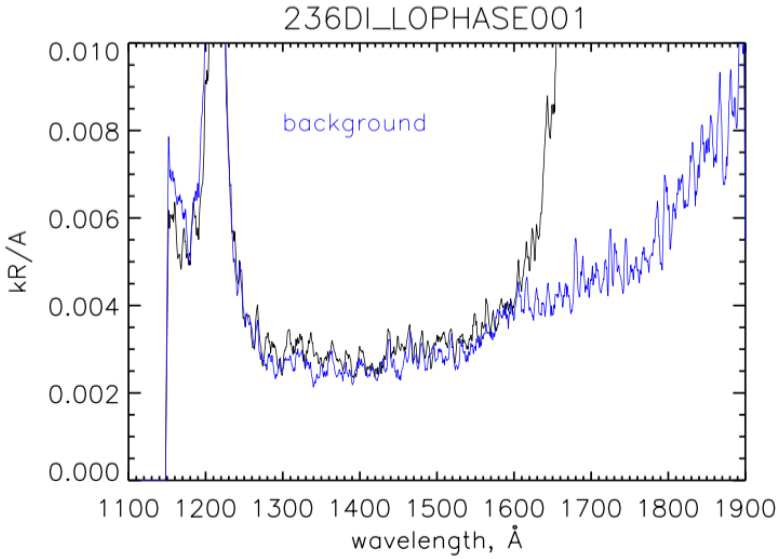
Latitude=24.5°N

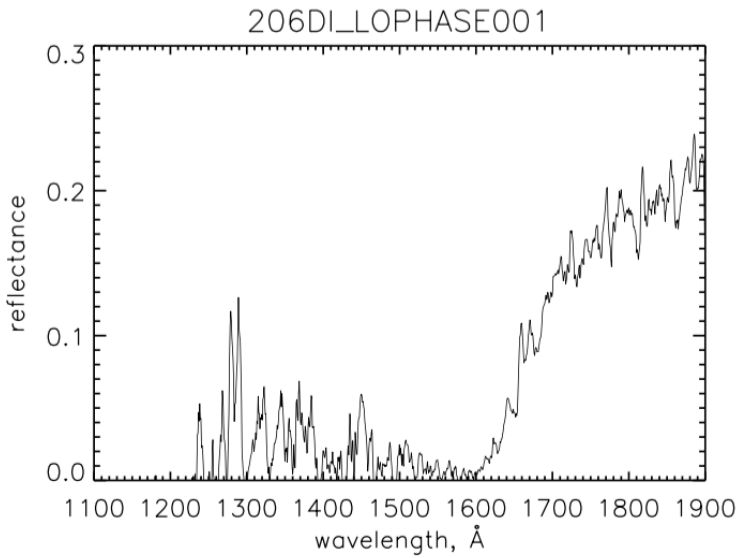
Phase=3.7°



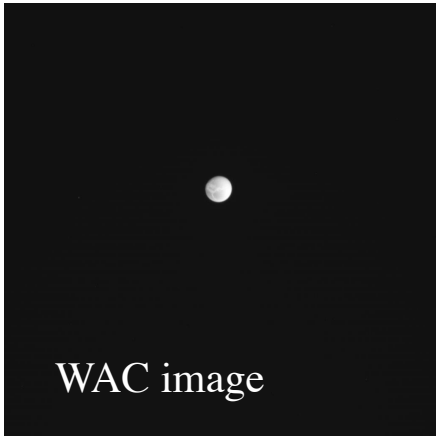


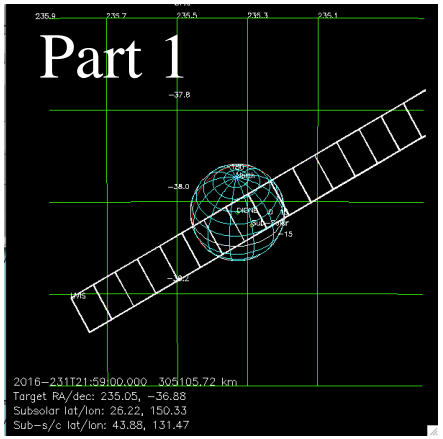


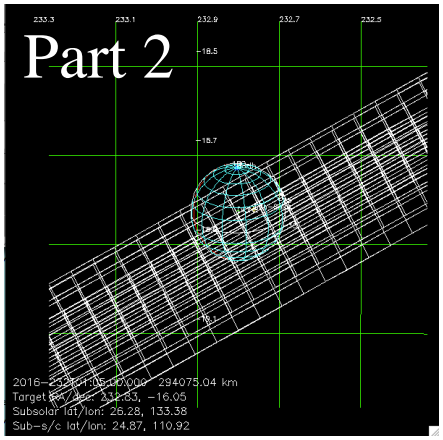


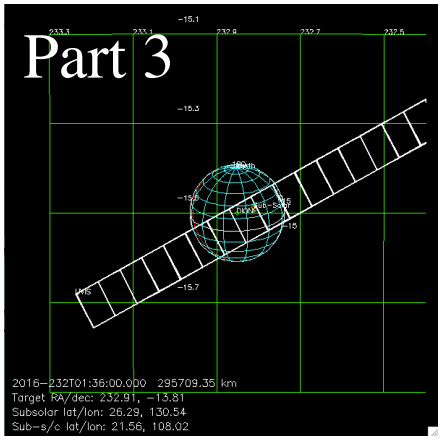


240DI_ICYLON001_CIRS
2016-231T22:00
Alt=303,786
Longitude=229°W
Latitude=43°N
Phase=23°

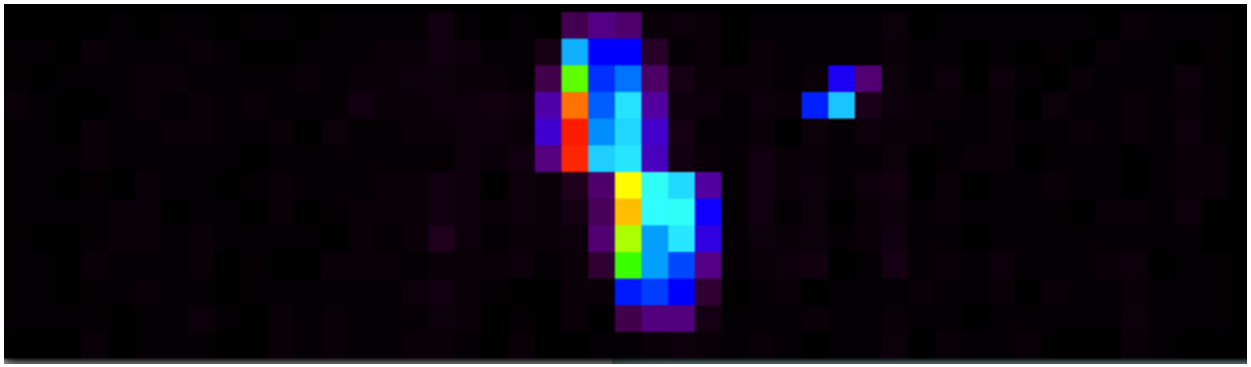




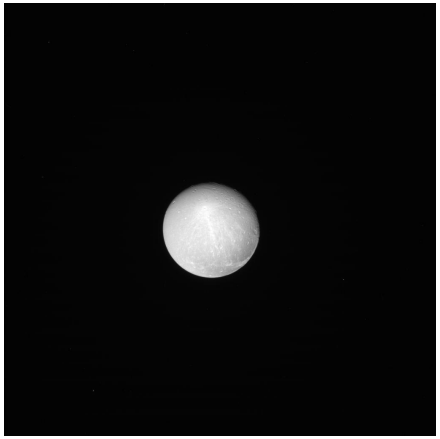


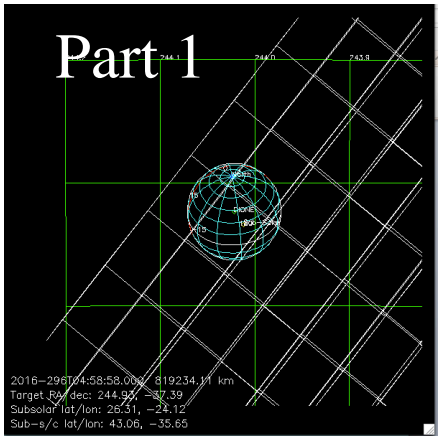


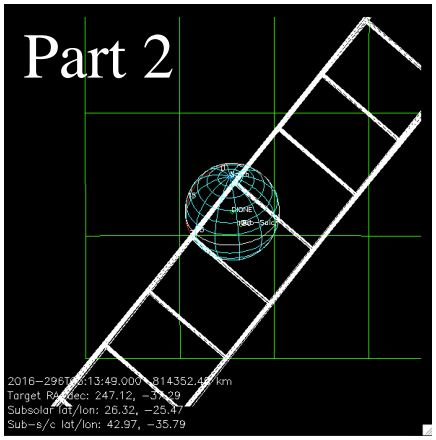
Part 2

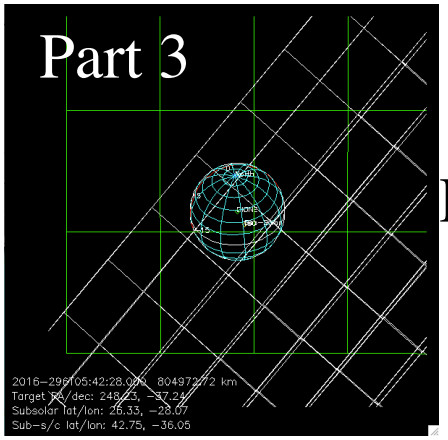


246DI_ICYLON001_ISS
2016-296T04:59
Alt=816,699 km
Longitude=36°W
Latitude=43°N
Phase=19°

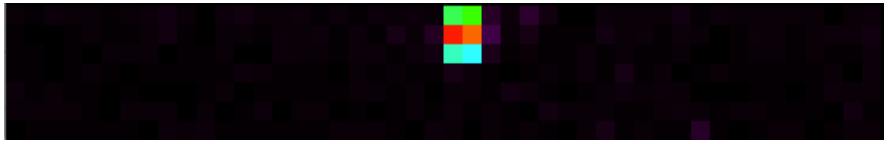








Part 3

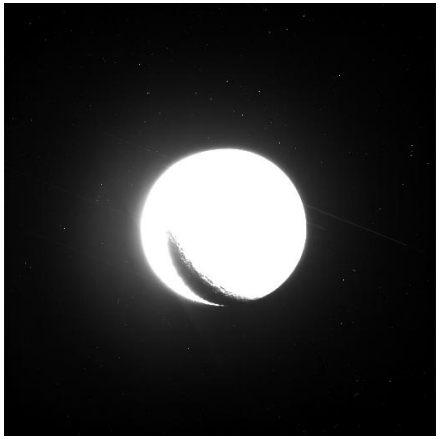


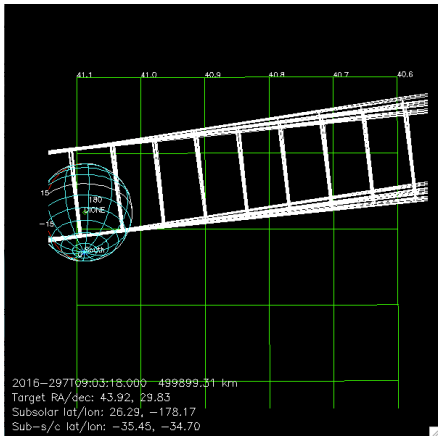
Part 2

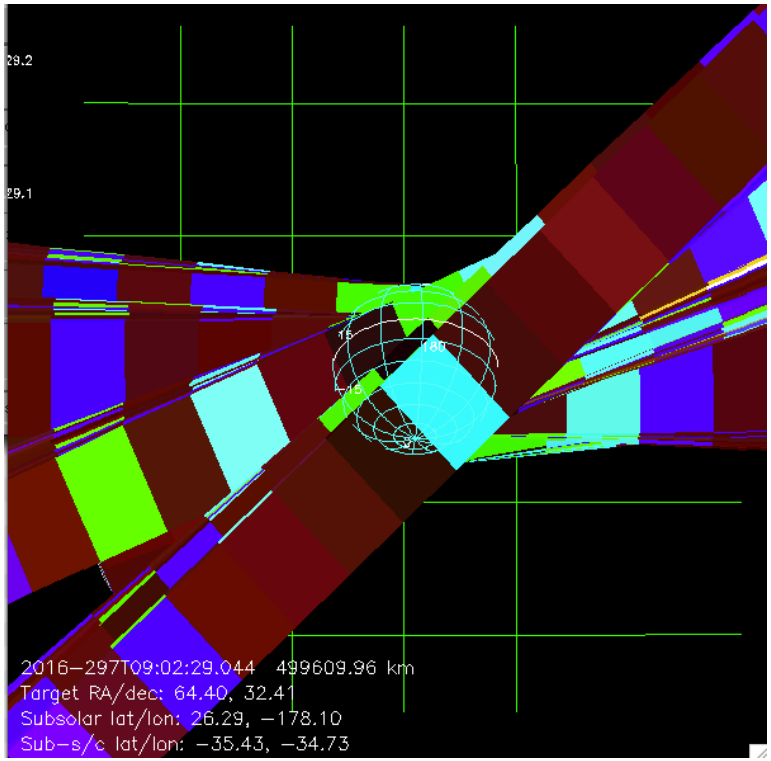
Part 1

9-part

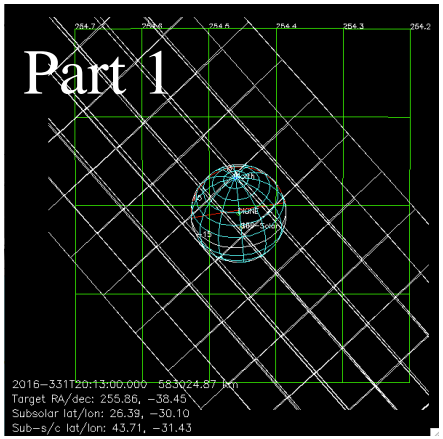
246DI_ICYLON002_ISS
2016-297T09:02
Alt=503,282 km
Longitude=34°W
Latitude=36°S
Phase=149°

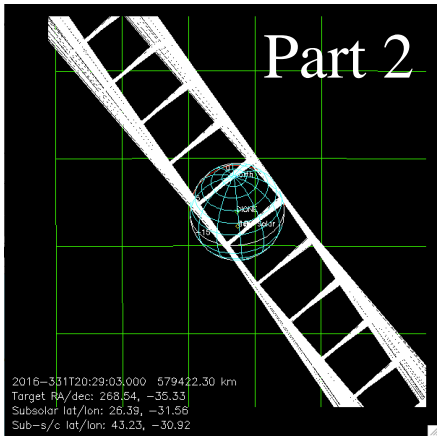






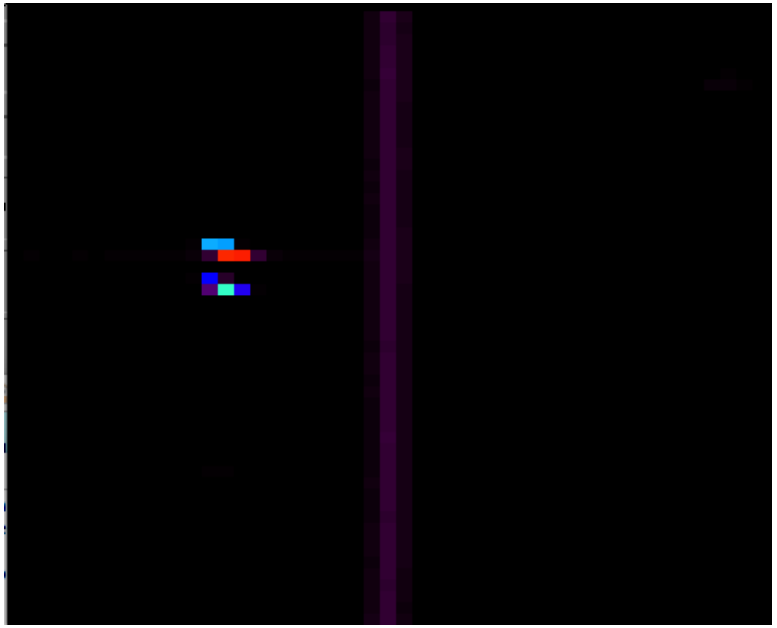
250DI_ICYLON001_PRIME
2016-331T20:14
Alt=581,106
Longitude=31°W
Latitude=44°N
Phase=17.2°





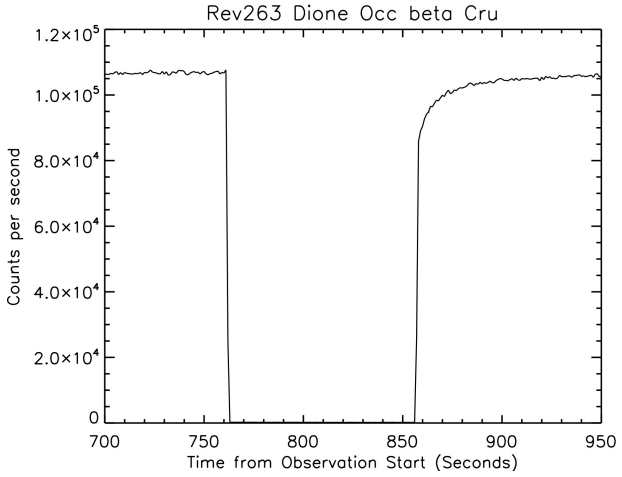
Part 1

Part 2

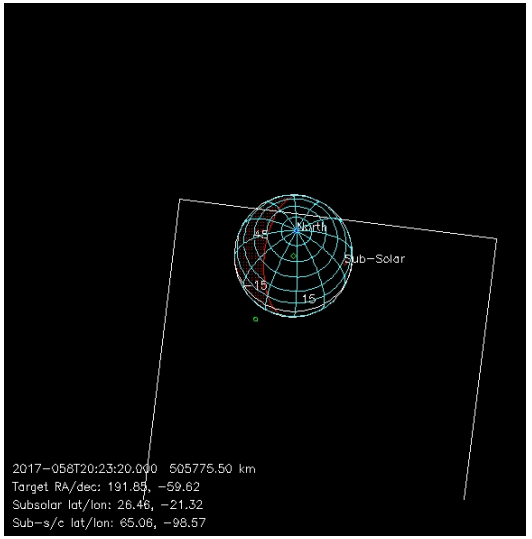


(another object is in the UVIS slit)

HSP profile

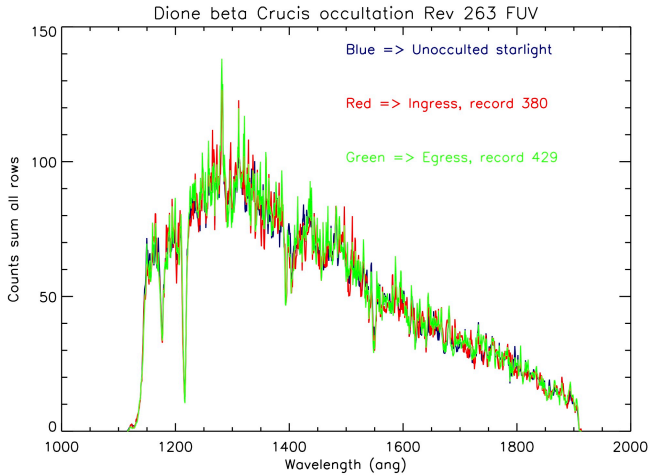


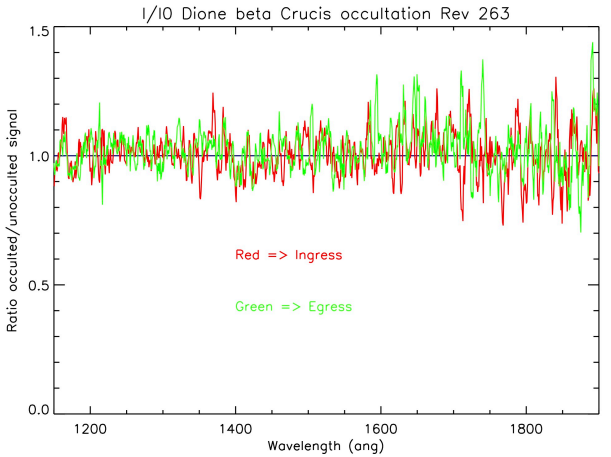
UVIS_263DI_ICYEXO001_PIE
2017-058T20:10
Ingress lat/lon: -22.8 / 122.6
Egress lat/lon: 17.7 / 324.9
Star: Beta Crucis



Ingress

Spectra of I, I_0 (counts per integration period vs wavelength)

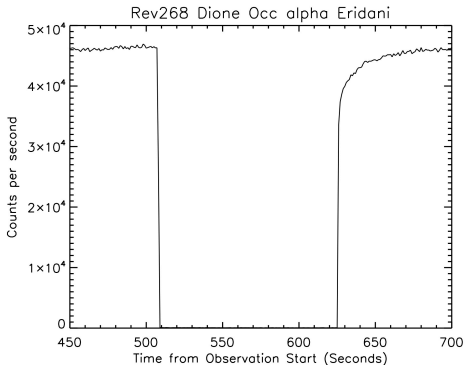


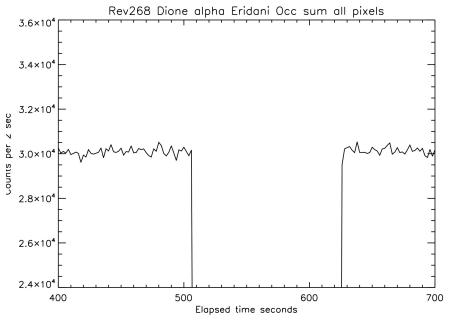


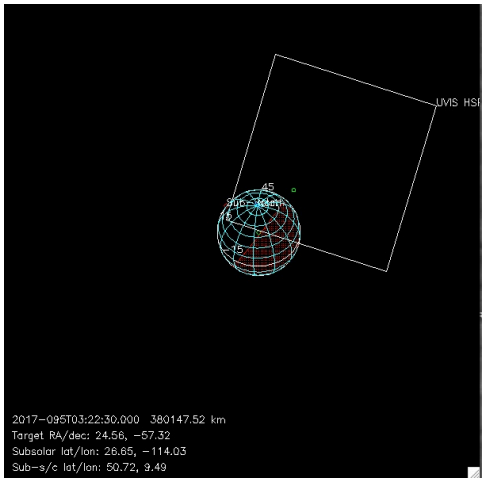
Spectrum of I/ I_0

UVIS_268DI_ICYEXO001_PIE
2017-095T03:14
Ingress lat/lon: 20.9 / 232.3
Egress lat/lon: -29.8 / 306.1
Star: Alpha Eridani

HSP and FUV profiles

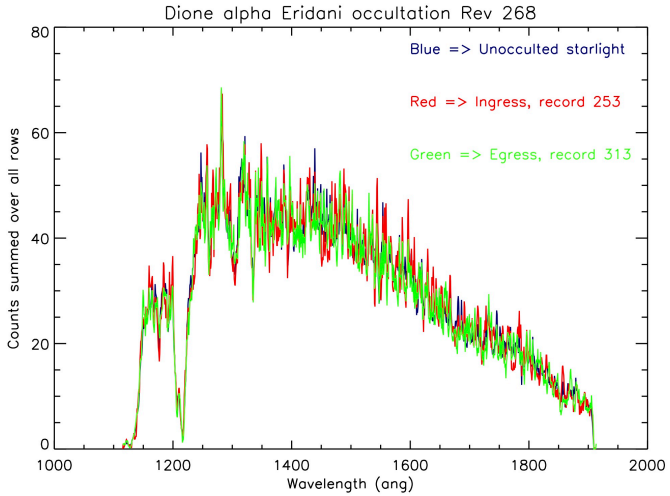


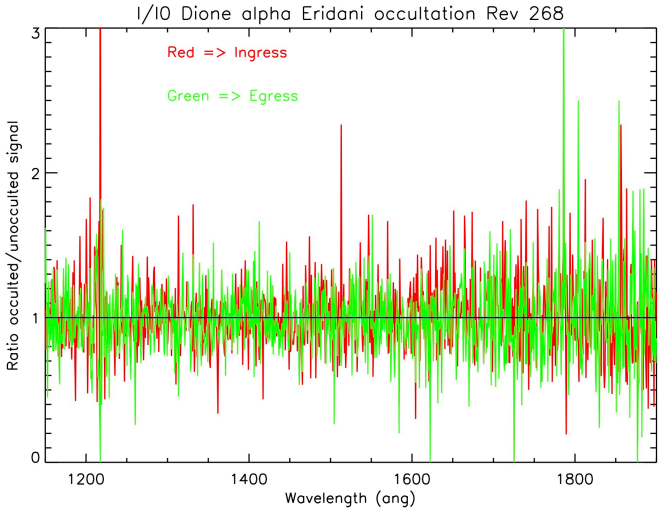




Ingress

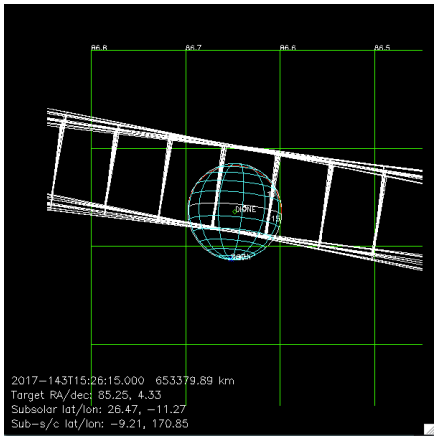
Spectra of I, I_0 (counts per integration period vs wavelength)





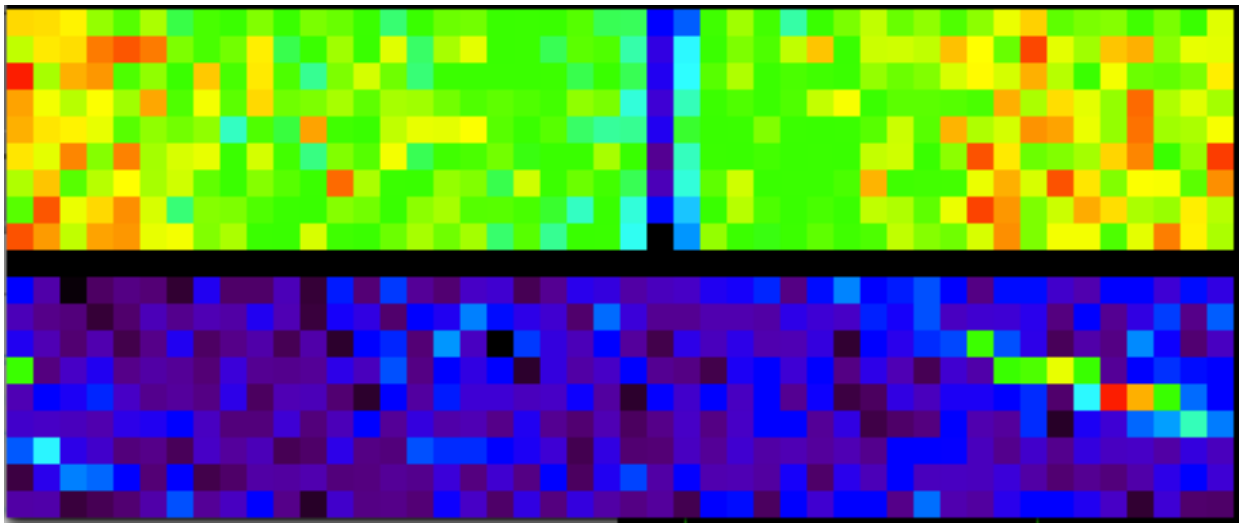
Spectrum of I/ I_0

275DI_ICYLON001_VIMS
2017-143T15:28
Alt=657,837 km
Longitude=191°W
Latitude=9°S
Phase=162°

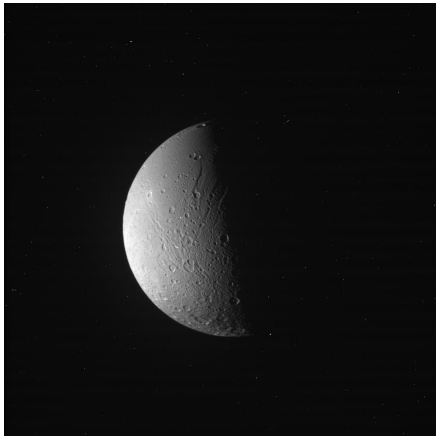


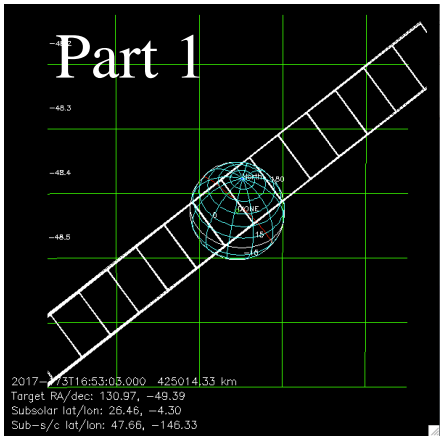
Ly-a

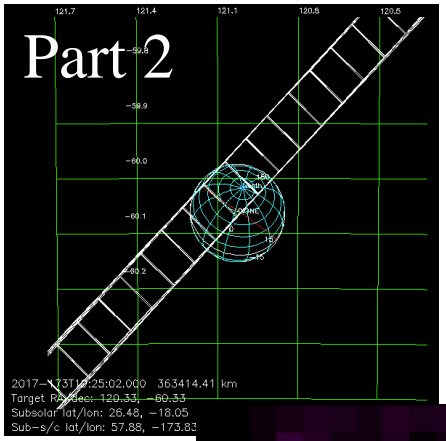
Long waves

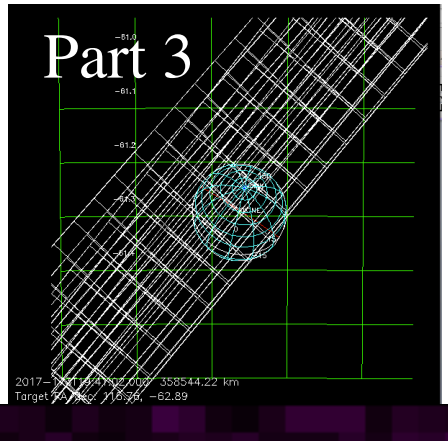


280DI_ICYLON001_CIRS
2017-173T16:54
Alt=420,574 km
Longitude=148°W
Latitude=48°N
Phase=98°

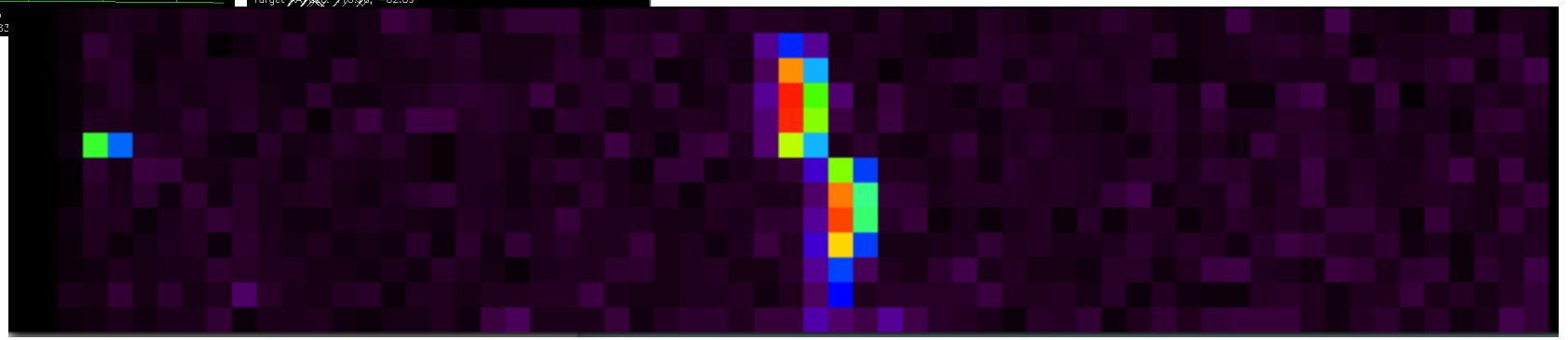








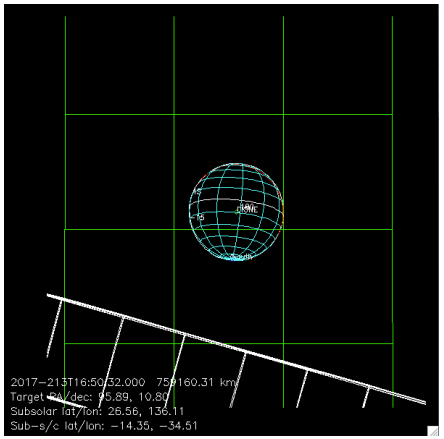
Part 3

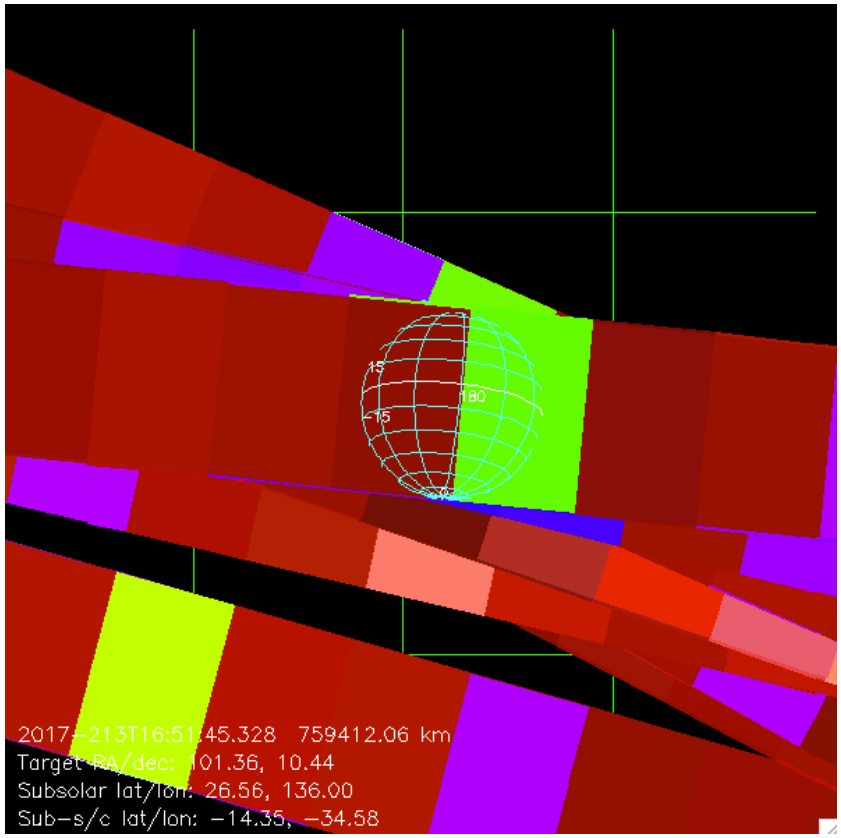


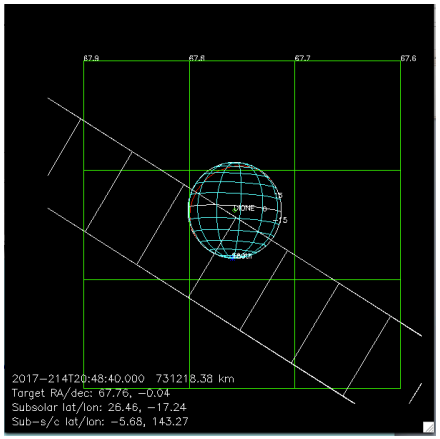
Part 2

16-part

286DI_ICYPLU001_ISS
2017-213T16:52
Alt=759,511
Longitude=35°W
Latitude=14°S
Phase=165°







286DI_ICYPLU002_ISS
2017-214T20:49
Alt=730,656 km
Longitude=217°W
Latitude=6°S
Phase=152°

Low SNR