UVIS Rings Spectroscopy Atlas

The UVIS FUV and EUV channels have 64 X 1024 pixels spatial and spectral pixels each, respectively. For this document a “pixel” refers to the projection of a single pixel onto the ring plane. Due to the motion of the spacecraft during an integration period the projection of the pixel onto the ring plane may vary in location both radially and azimuthally, resulting in a “smeared” projected pixel. An observation typically consists of multiple integration periods, where each set of 64 X 1024 pixels of data constitute a single data record. For example an observation with 10 data records consists of 64 X 1024 X 10 pixels of data. Some observations were designed where the spectra were binned. For example spectral binning equal to 2 with 10 data records results in 64 X 512 X 10 separate pixels of data. The figures containing an axis or axes in units of Rs are in units of the dynamical radius of Saturn, which is 60330 km.

Incidence, emission, and phase angles range from 0°-180°, with 0° normal to the ring plane in the Saturn North Pole direction.

Top left: Projection of each smeared pixel for all data records in ring plane looking down on Saturn North pole with Sun to the left. The color code is rainbow from IDL color palette 13 and is normalized with violet and red corresponding to the lowest and highest count rates, respectively.

Top center: Example of the movement of a single projected pixel from start to finish of the integration period.

Middle left: Distance of the spacecraft from the ring plane for each projected pixel for all data records plotted against the radial location of the center of the projected pixel at the middle of the integration period.

Middle center: Maximum projected smeared pixel size for all data records plotted against the radial location of the projected pixel at the middle of the integration period.

Middle right: Phase, incidence, and emission angles for each pixel for all data records at the middle of the integration period.

Bottom left: Total raw counts from 175.2 – 189.8 nm for each pixel for all data records.

Bottom center: Location of spacecraft throughout an observation looking down on Saturn North Pole with the Sun to the left.

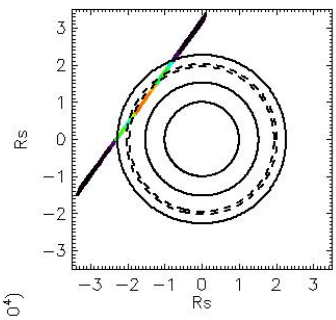
Bottom right: Location of spacecraft throughout an observation looking in the equatorial plane with the Sun to the left.

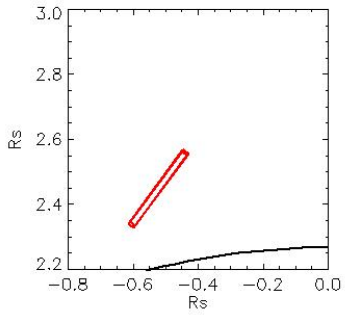
Observation Name:
UVIS_006RB_COMP001_CIRS_1

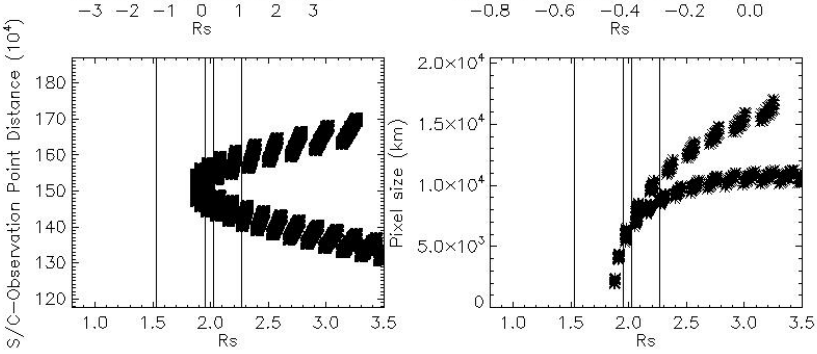
Observation Date:
2005_102_07_38_04

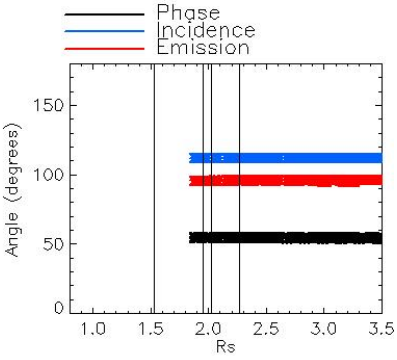
Observation Duration:
15840 S

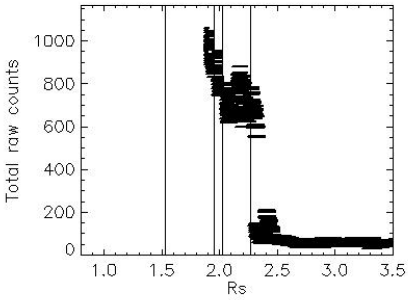
Integration time = 480 S

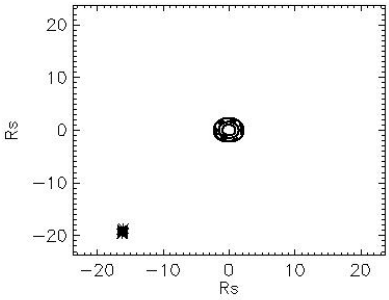


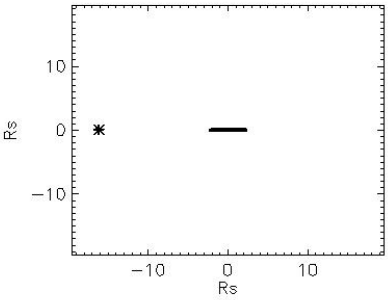


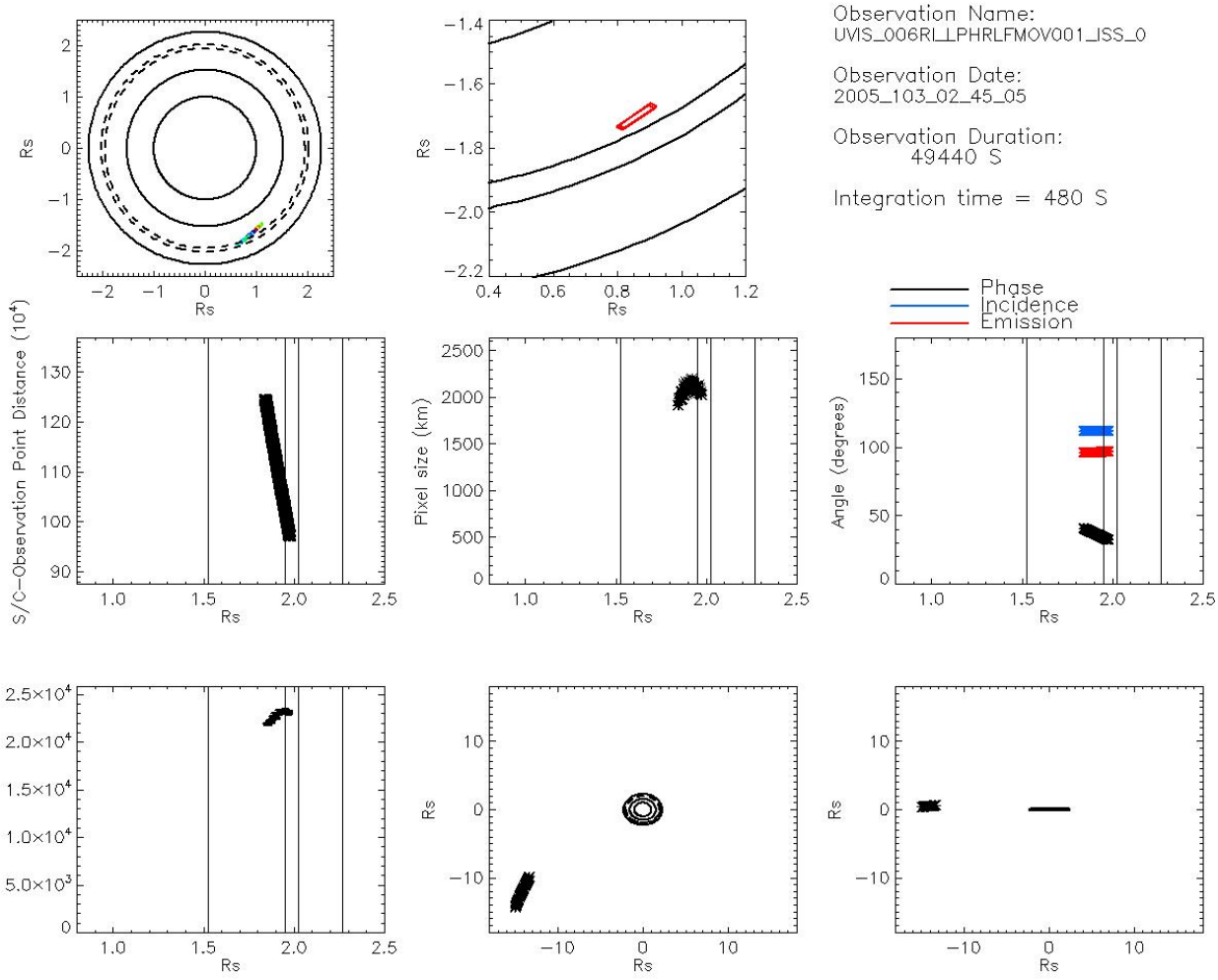


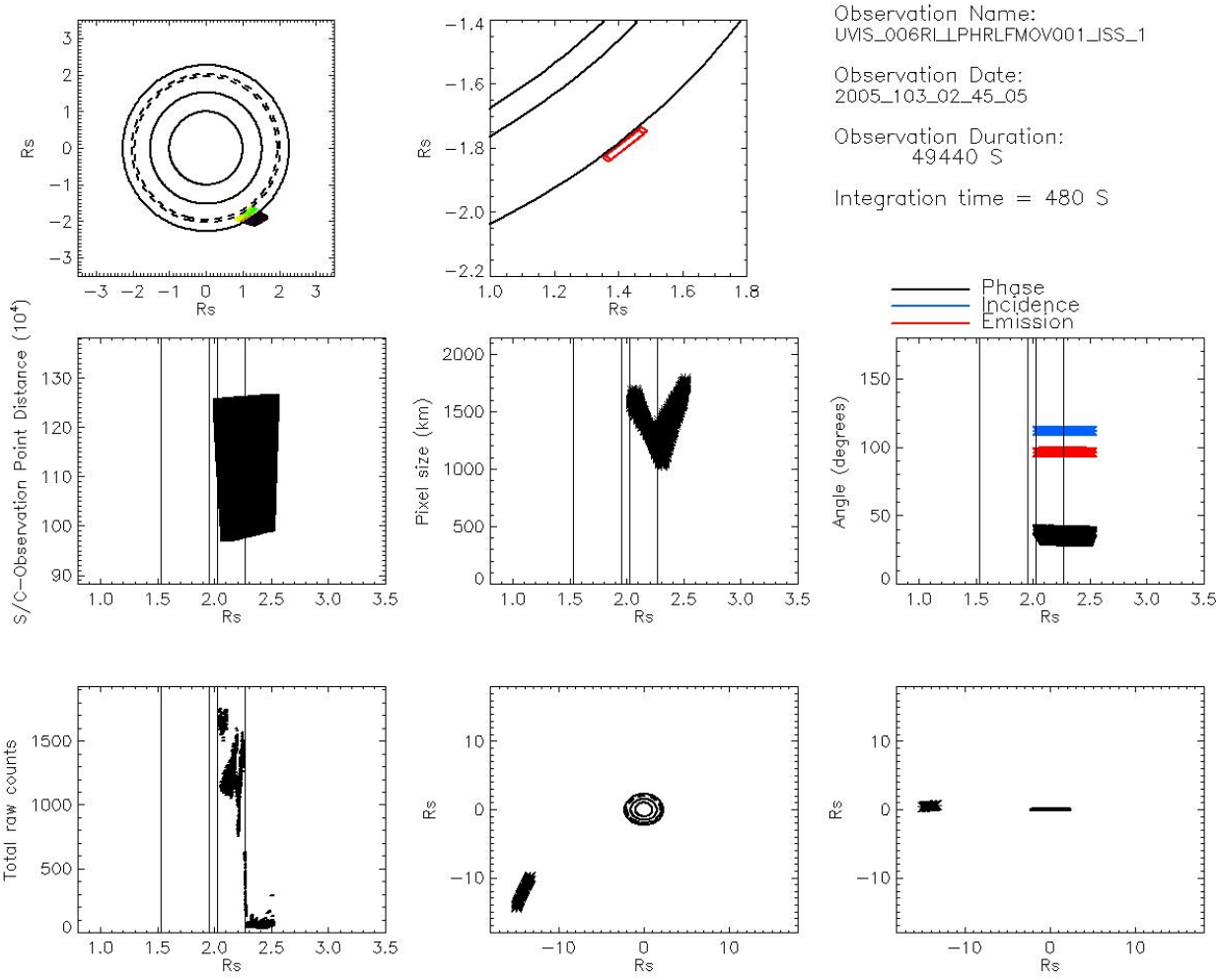









Observation Name:
UVIS_006RI_LPHRLFMOV001_ISS_0
Observation Date:
2005_103_02_45_05
Observation Duration:
49440 S
Integration time = 480 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts

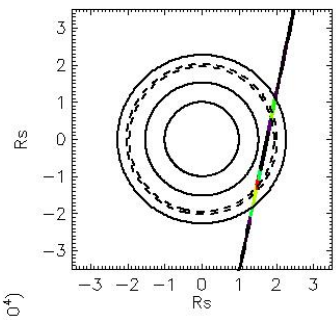

Observation Name:
UVIS_006RI_LPHRLFMOV001_ISS_1
Observation Date:
2005_103_02_45_05
Observation Duration:
49440 S
Integration time = 480 S
Phase
Incidence
Emission
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs

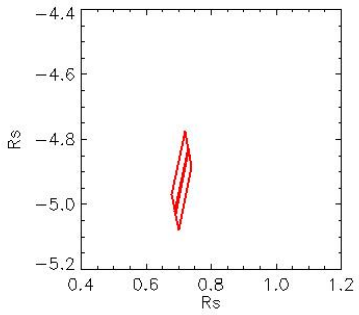
Observation Name:
UVIS_006RI_FMONITOR001_CIRS

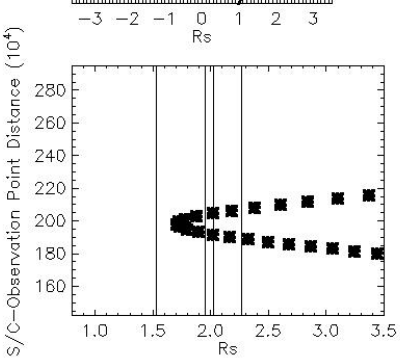
Observation Date:
2005_109_06_49_34

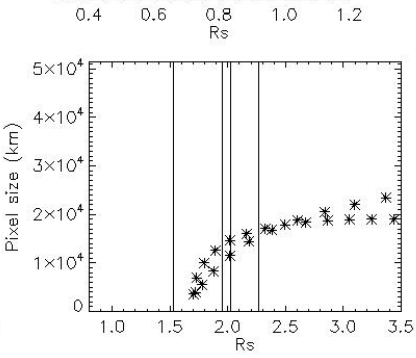
Observation Duration:
600 S

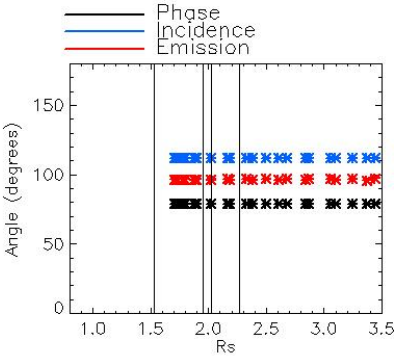
Integration time = 600 S

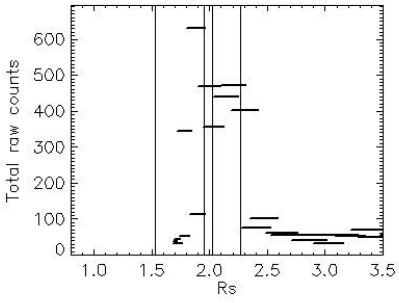


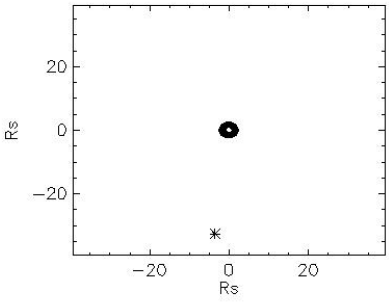


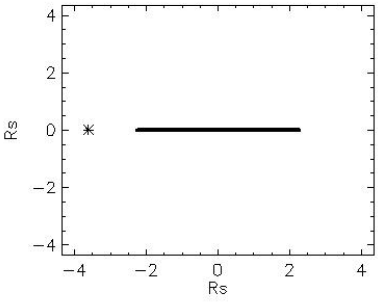


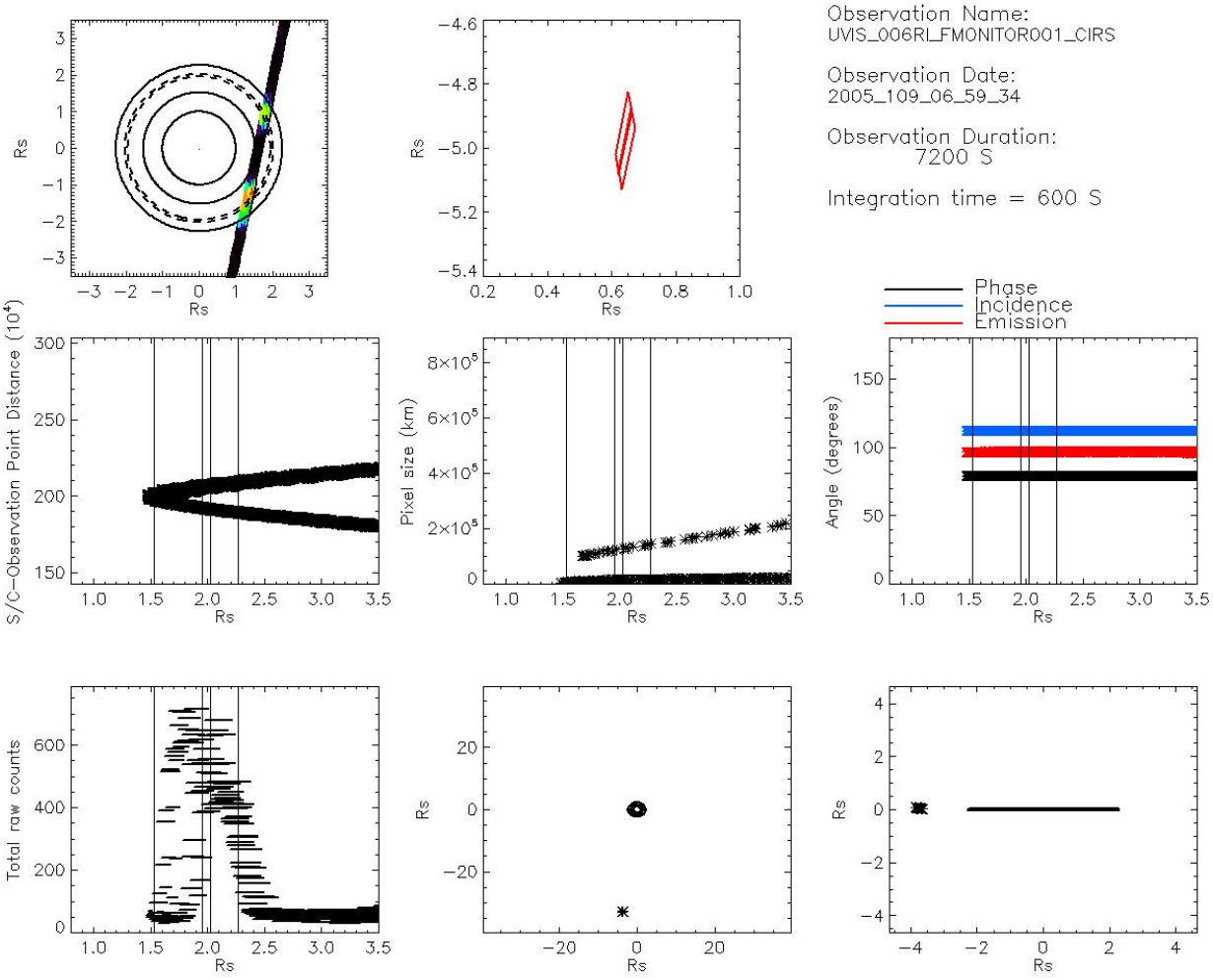










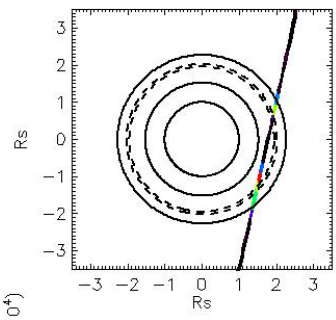

Observation Name:
UVIS_006RI_FMONITOR001_CIRS
Observation Date:
2005_109_06_59_34
Observation Duration:
7200 S
Integration time = 600 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts

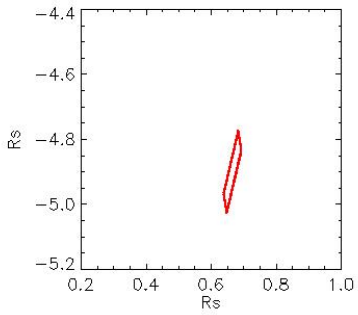
Observation Name:
UVIS_006RI_FMONITOR001_CIRS

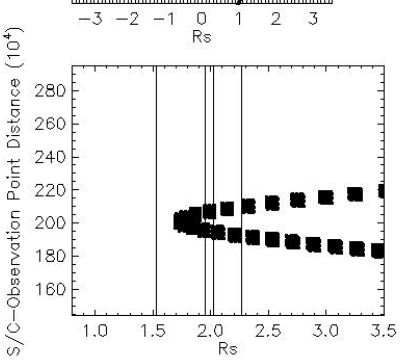
Observation Date:
2005_109_09_16_34

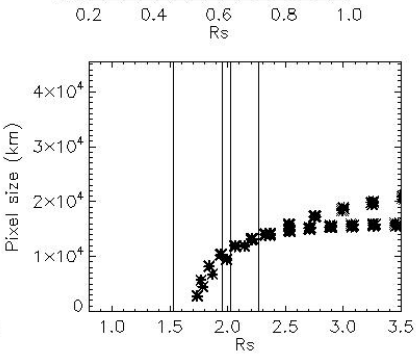
Observation Duration:
7800 S

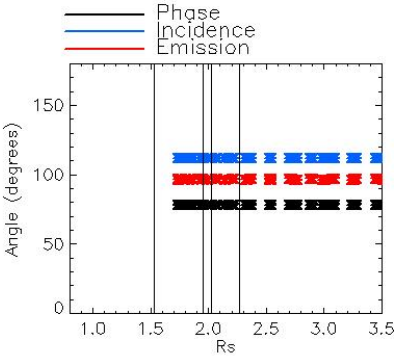
Integration time = 600 S

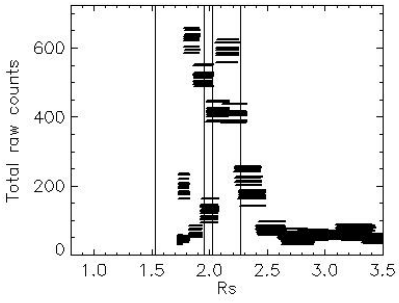


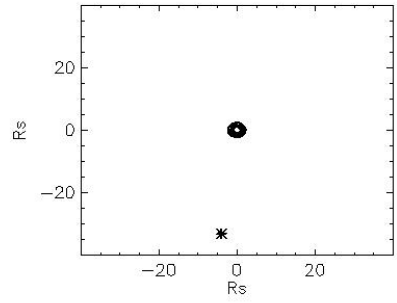


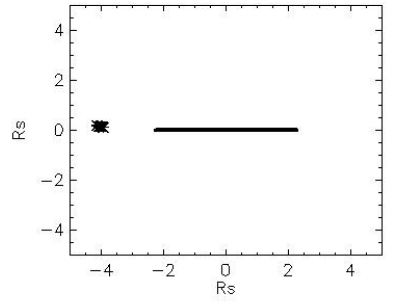


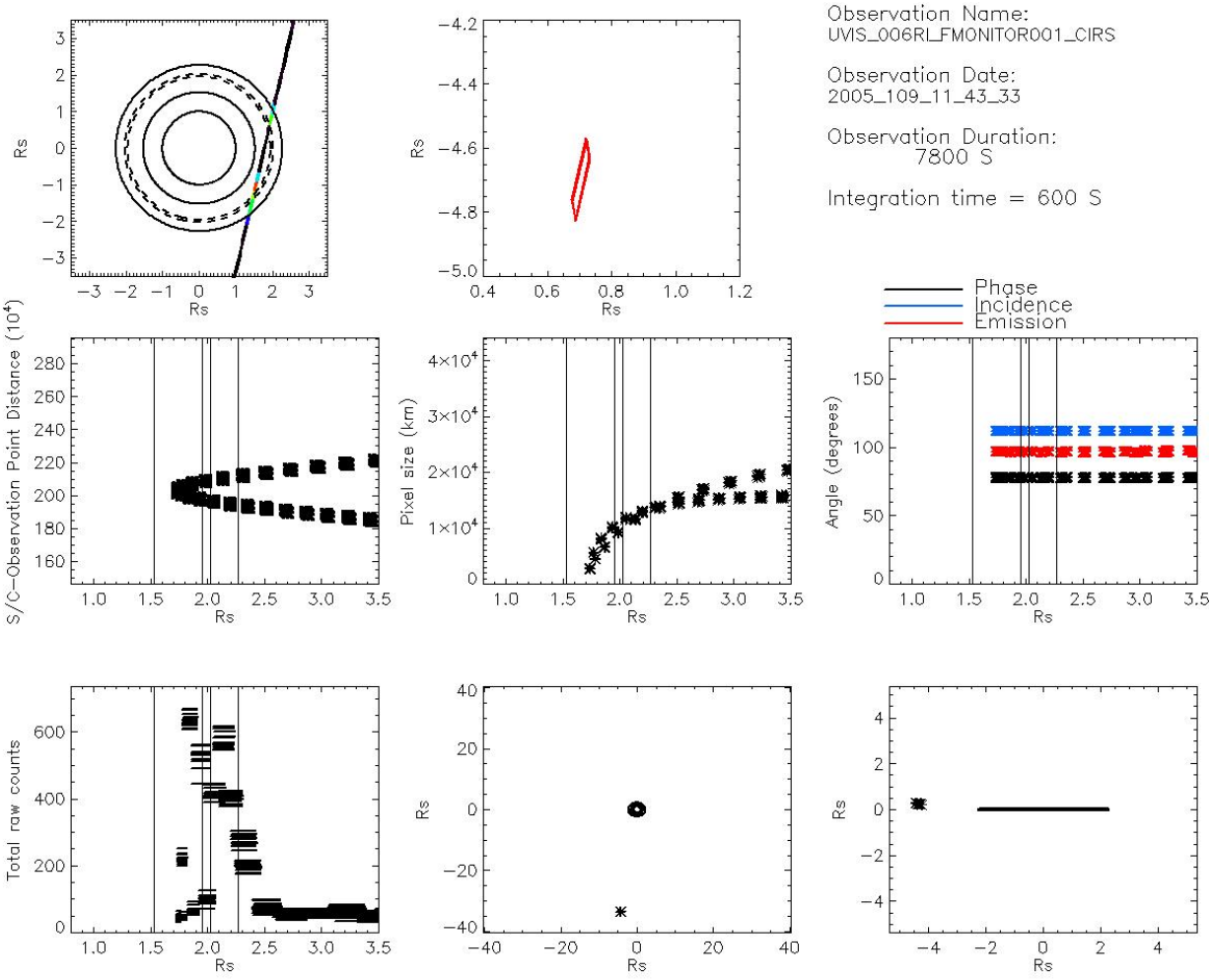










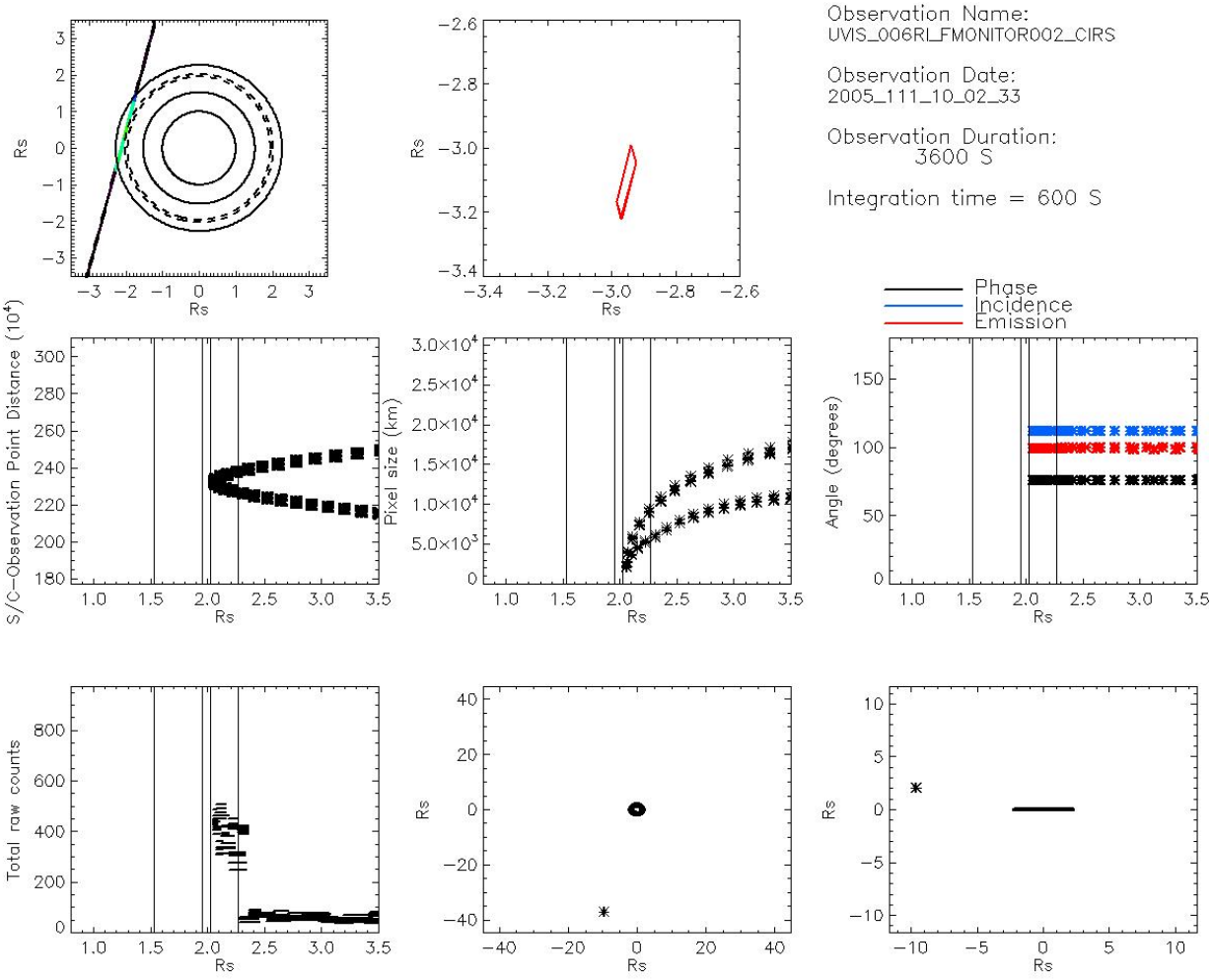

Observation Name:
UVIS_006RI_FMONITOR001_CIRS
Observation Date:
2005_109_11_43_33
Observation Duration:
7800 S
Integration time = 600 S
Phase
Incidence
Emission
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs

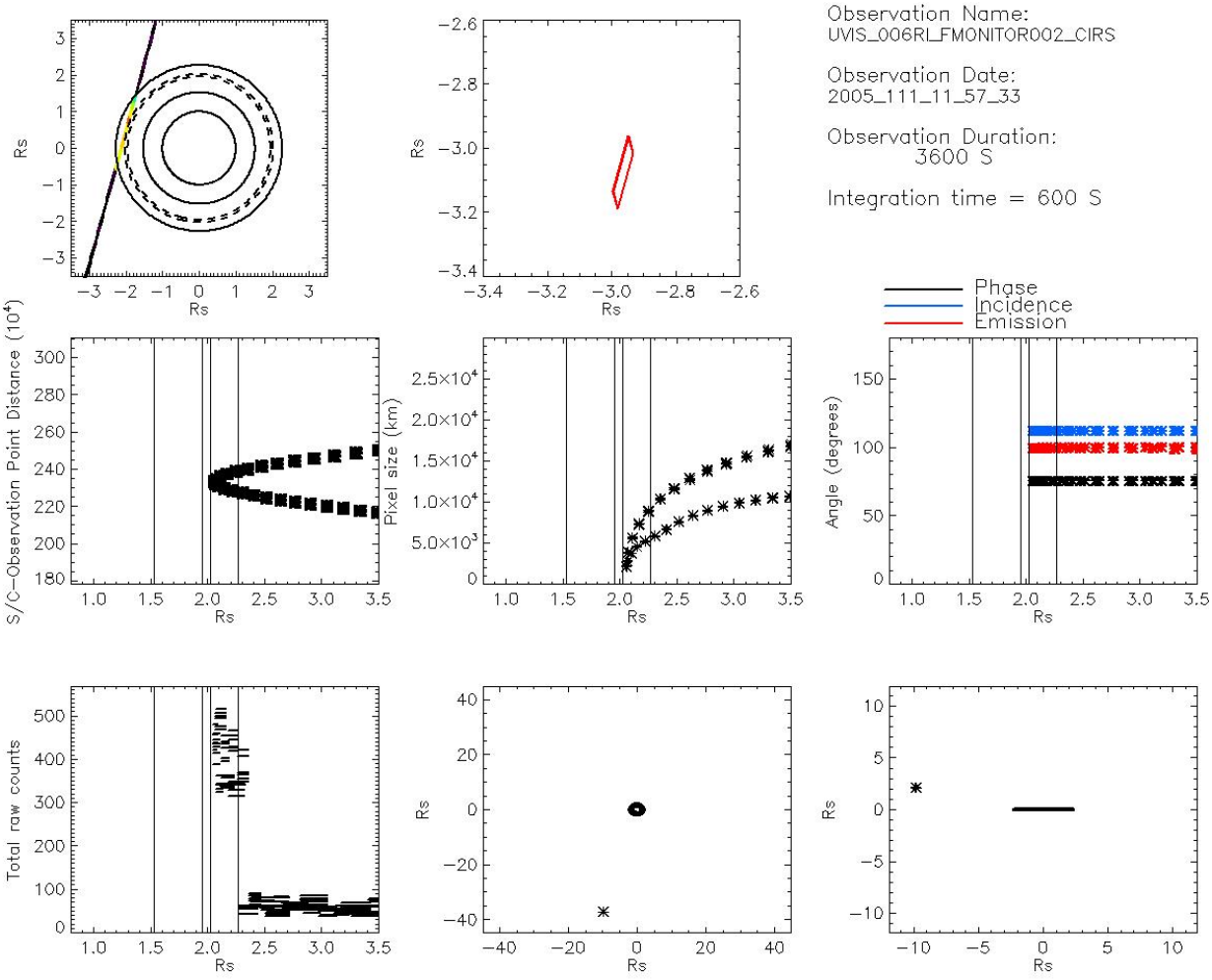
Observation Name:
UVIS_006RI_FMONITOR002_CIRS

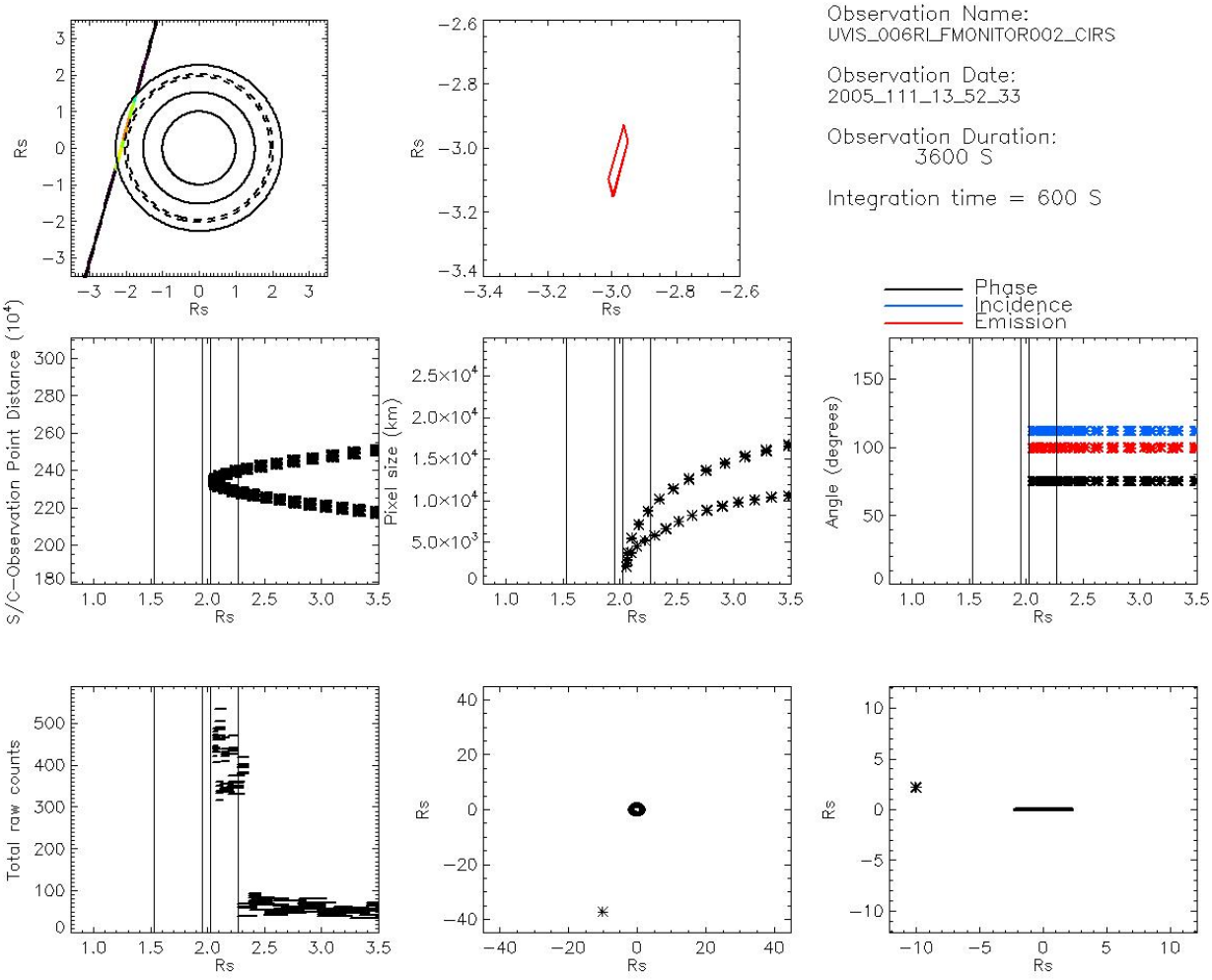
Observation Date:
2005_111_10_02_33

Observation Duration:
3600 S

Integration time = 600 S




Observation Name:
UVIS_006RI_FMONITOR002_CIRS
Observation Date:
2005_111_11_57_33
Observation Duration:
3600 S
Integration time = 600 S
Phase
Incidence
Emission
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs

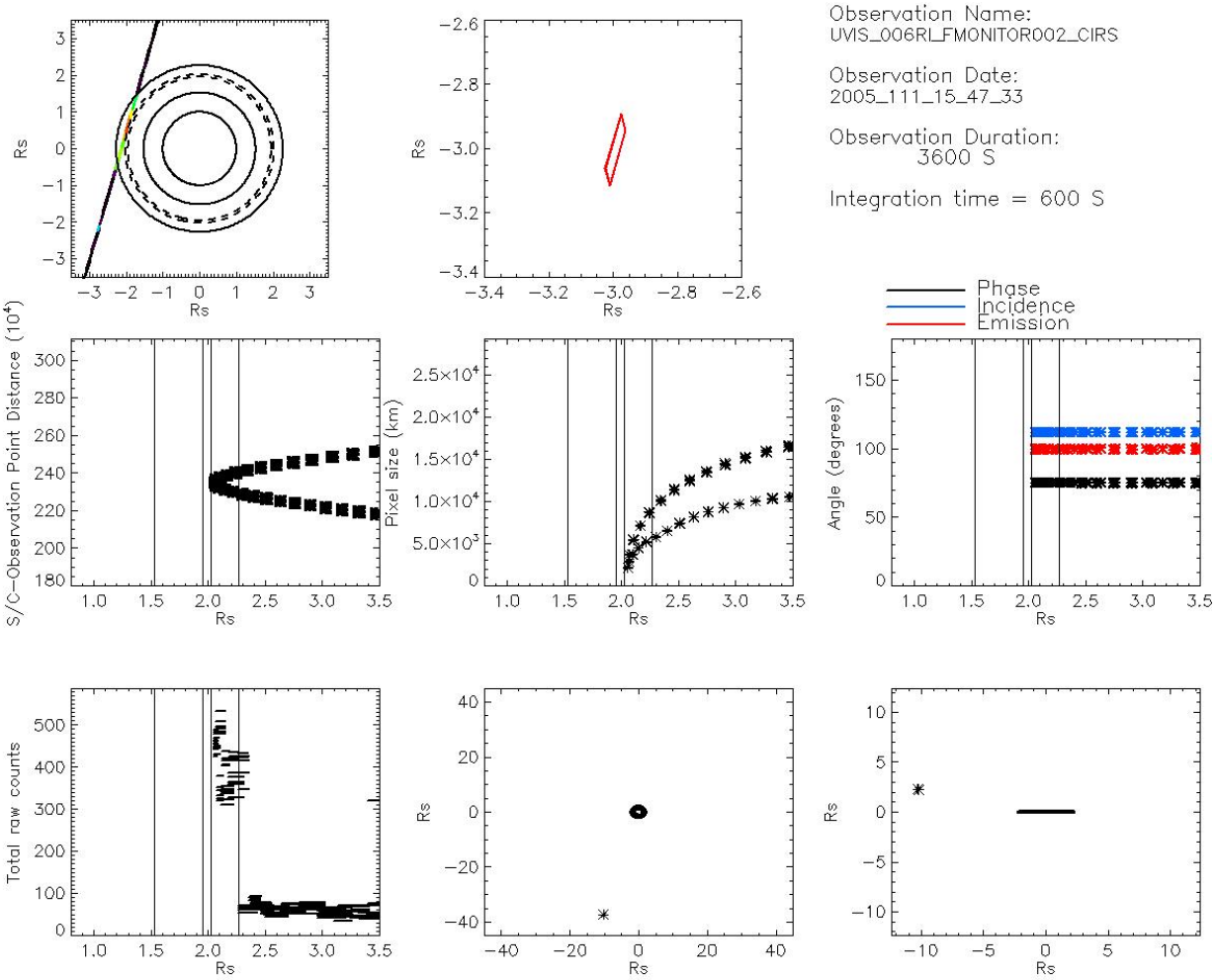

Observation Name:
UVIS_006RI_FMONITOR002_CIRS
Observation Date:
2005_111_13_52_33
Observation Duration:
3600 S
Integration time = 600 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts

Observation Name:
UVIS_006RI_FMONITOR002_CIRS

Observation Date:
2005_111_15_47_33

Observation Duration:
3600 S

Integration time = 600 S

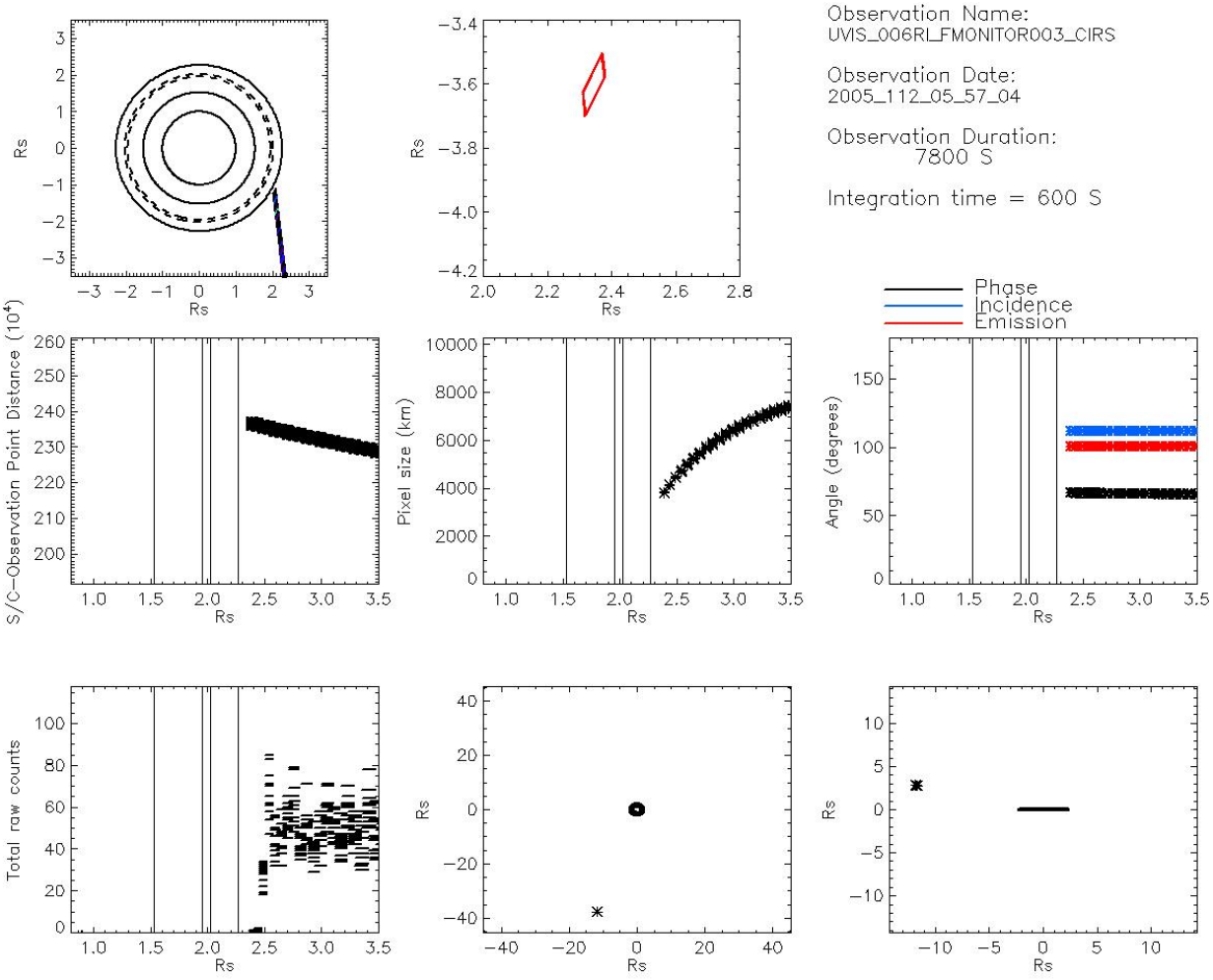


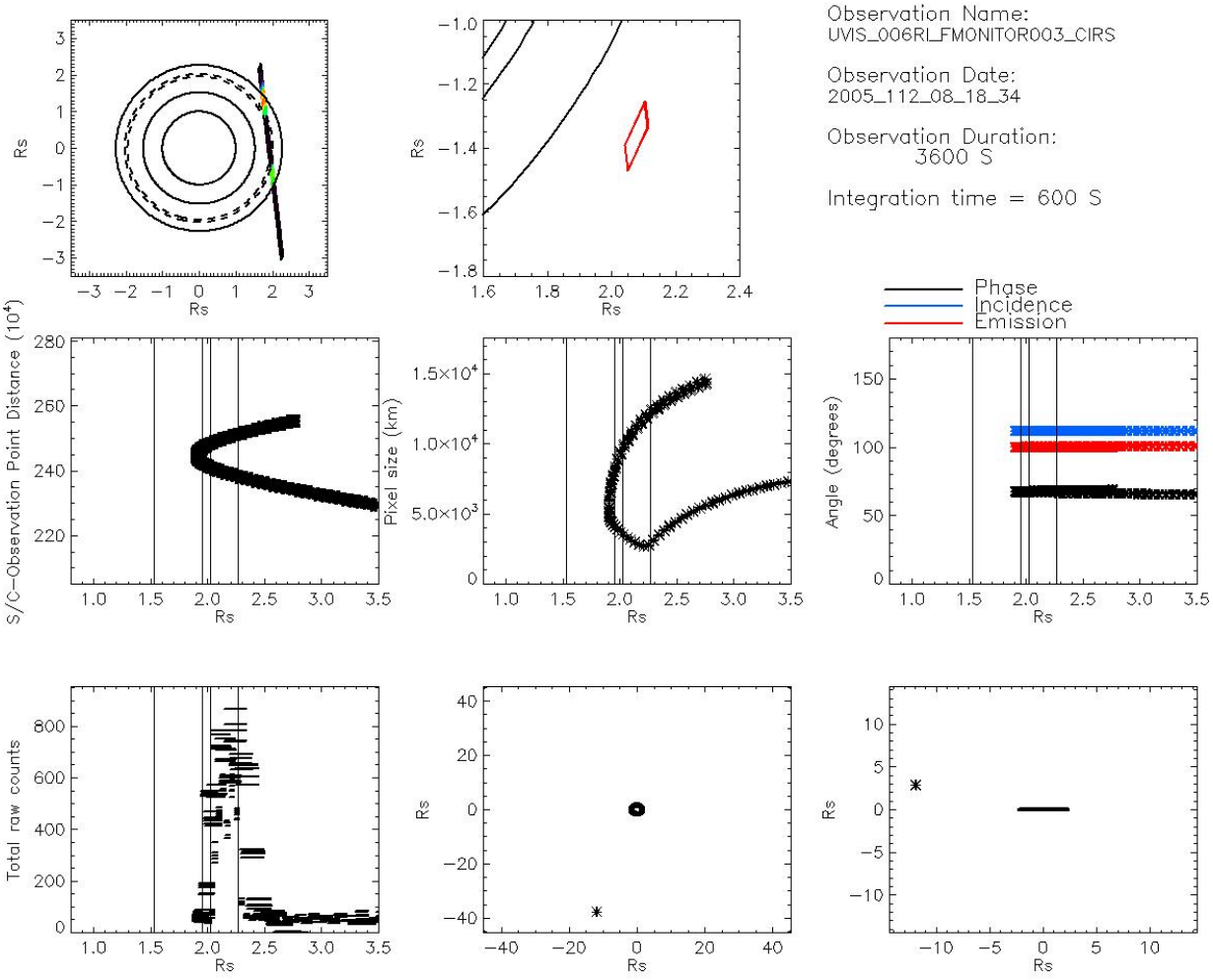
Observation Name:
UVIS_006RI_FMONITOR003_CIRS

Observation Date:
2005_112_05_57_04

Observation Duration:
7800 S

Integration time = 600 S



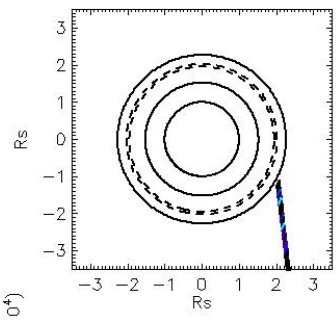

Observation Name:
UVIS_006RI_FMONITOR003_CIRS
Observation Date:
2005_112_08_18_34
Observation Duration:
3600 S
Integration time = 600 S
Phase
Incidence
Emission
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs

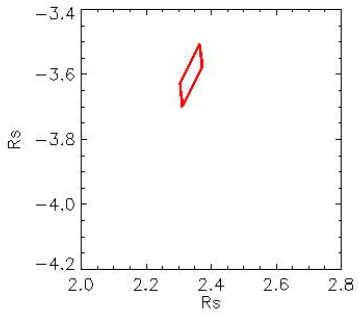
Observation Name:
UVIS_006RI_FMONITOR003_CIRS

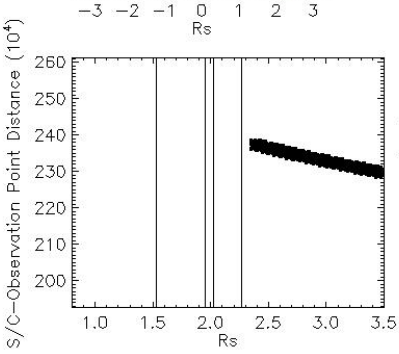
Observation Date:
2005_112_09_23_19

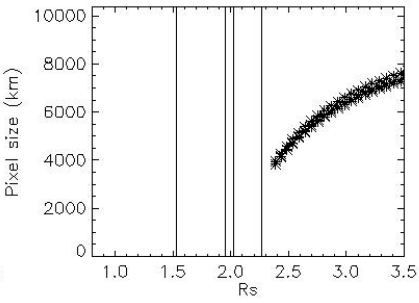
Observation Duration:
1800 S

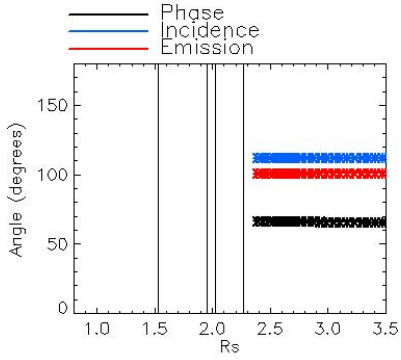
Integration time = 600 S

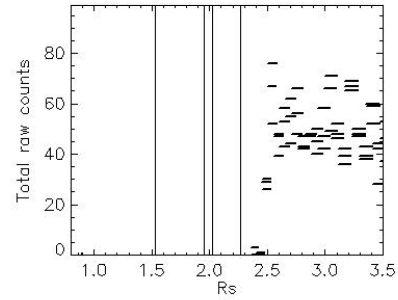


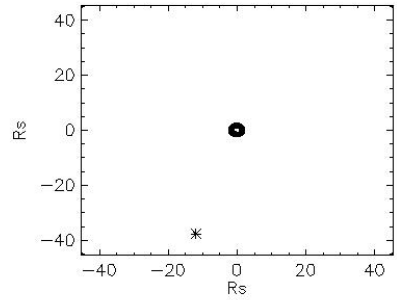


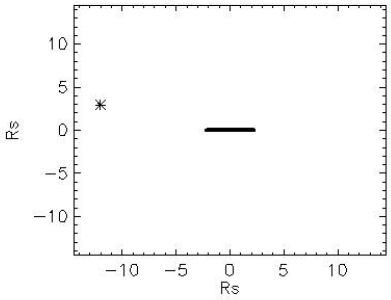


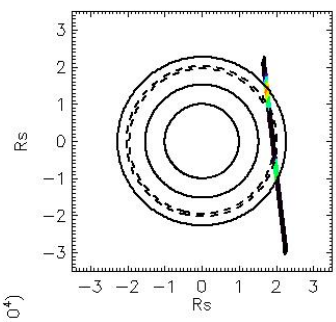


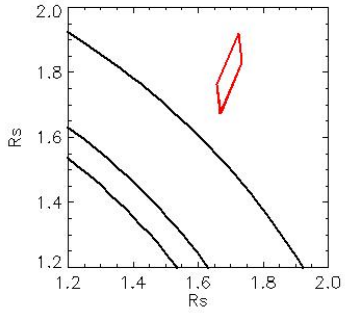










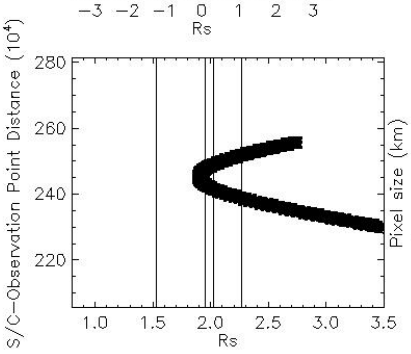


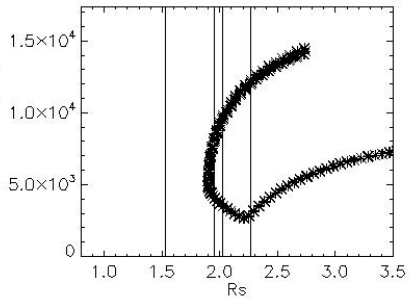
Observation Name:
UVIS_006RI_FMONITOR003_CIRS

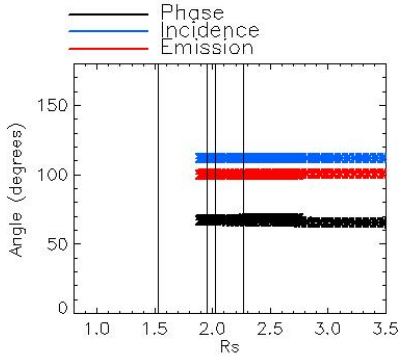
Observation Date:
2005_112_10_13_34

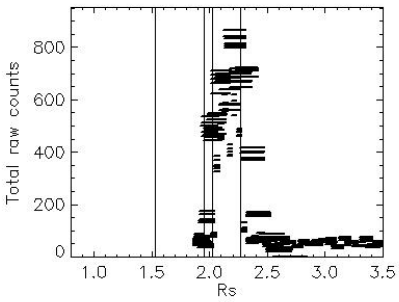
Observation Duration:
3600 S

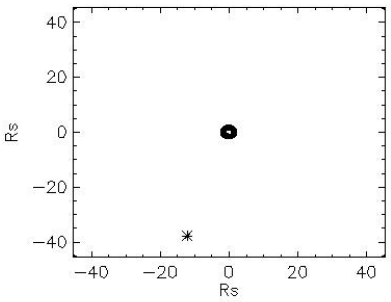
Integration time = 600 S

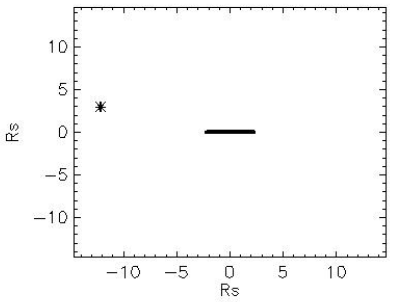


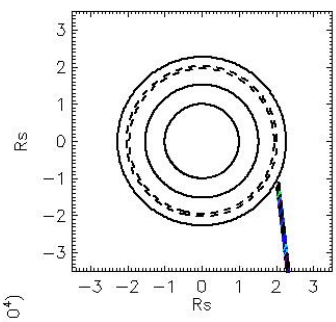


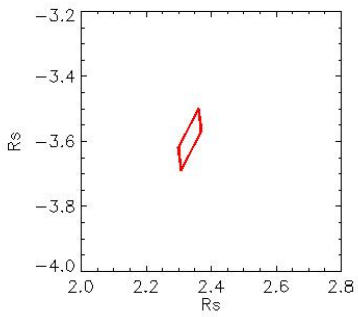










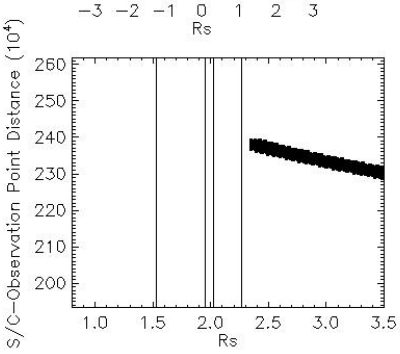


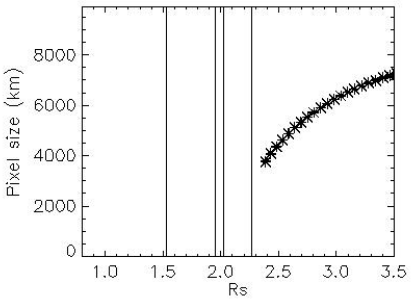
Observation Name:
UVIS_006RI_FMONITOR003_CIRS

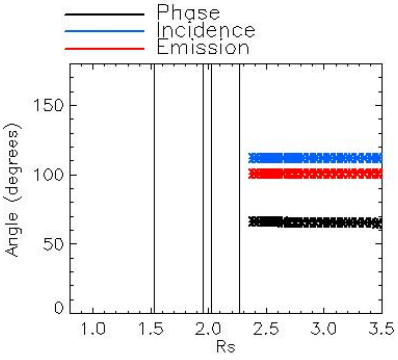
Observation Date:
2005_112_11_18_19

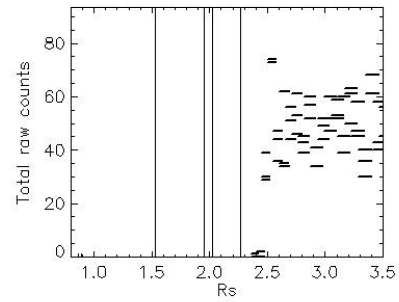
Observation Duration:
1800 S

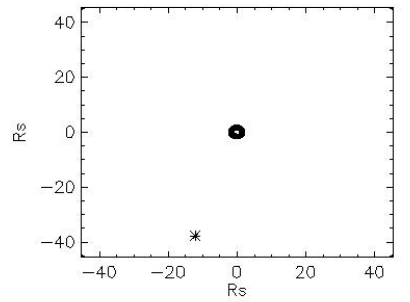
Integration time = 600 S

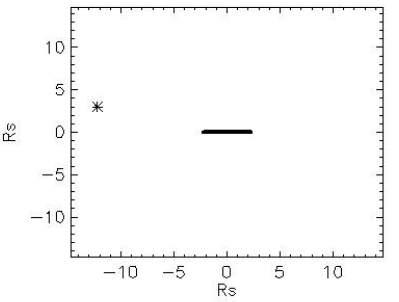


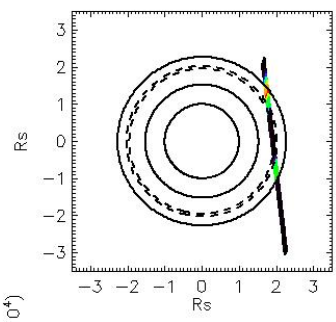


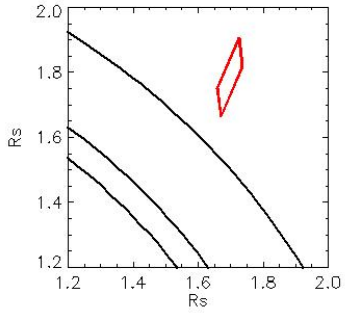










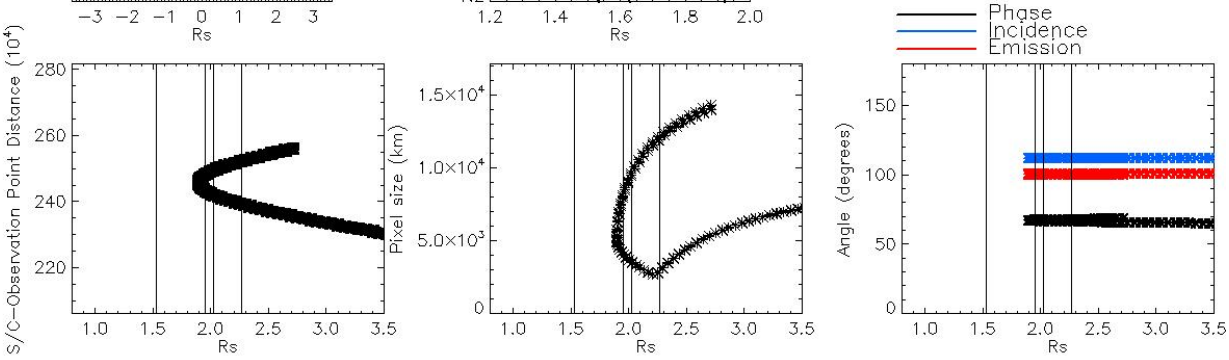


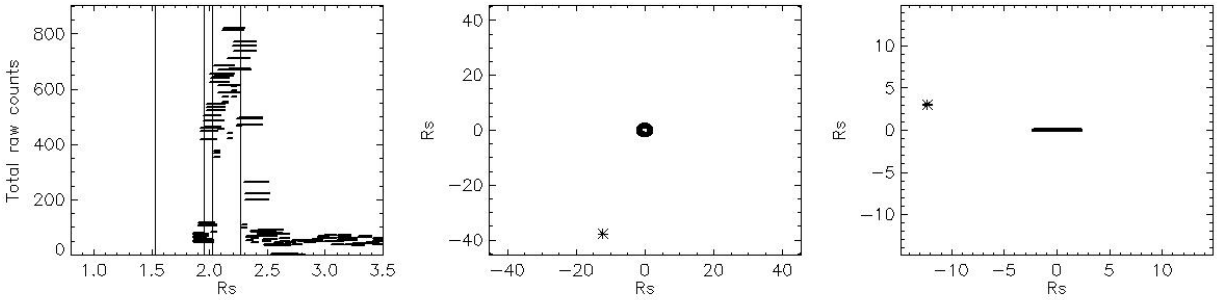
Observation Name:
UVIS_006RI_FMONITOR003_CIRS

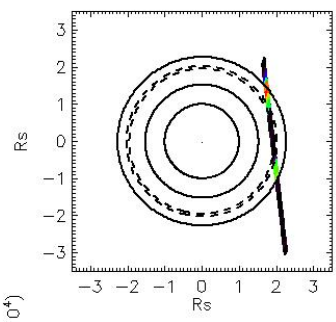
Observation Date:
2005_112_12_08_34

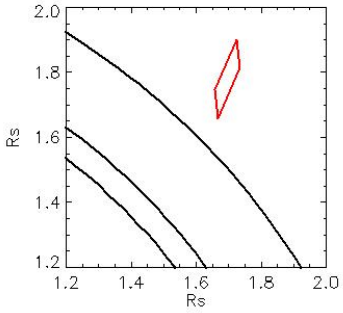
Observation Duration:
1800 S

Integration time = 600 S







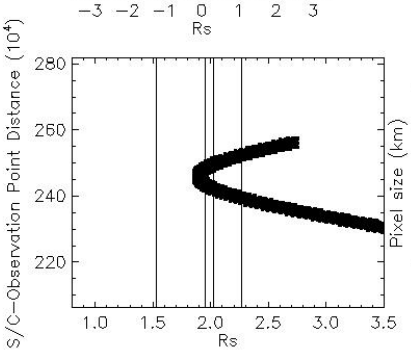


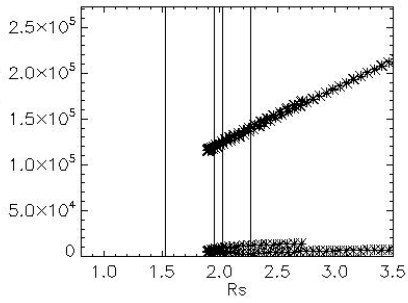
Observation Name:
UVIS_006RI_FMONITOR003_CIRS

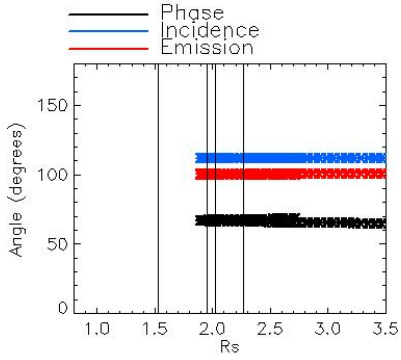
Observation Date:
2005_112_12_38_34

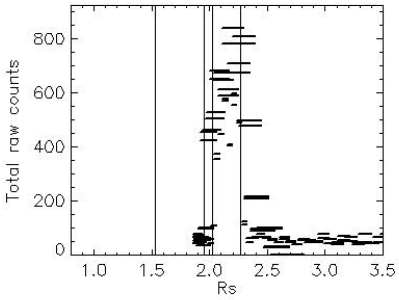
Observation Duration:
1800 S

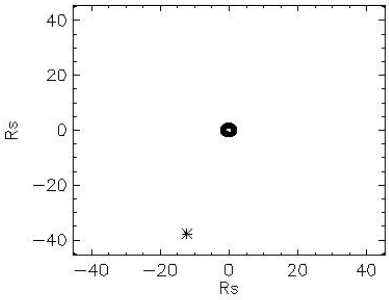
Integration time = 600 S

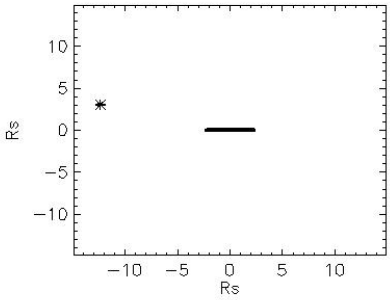


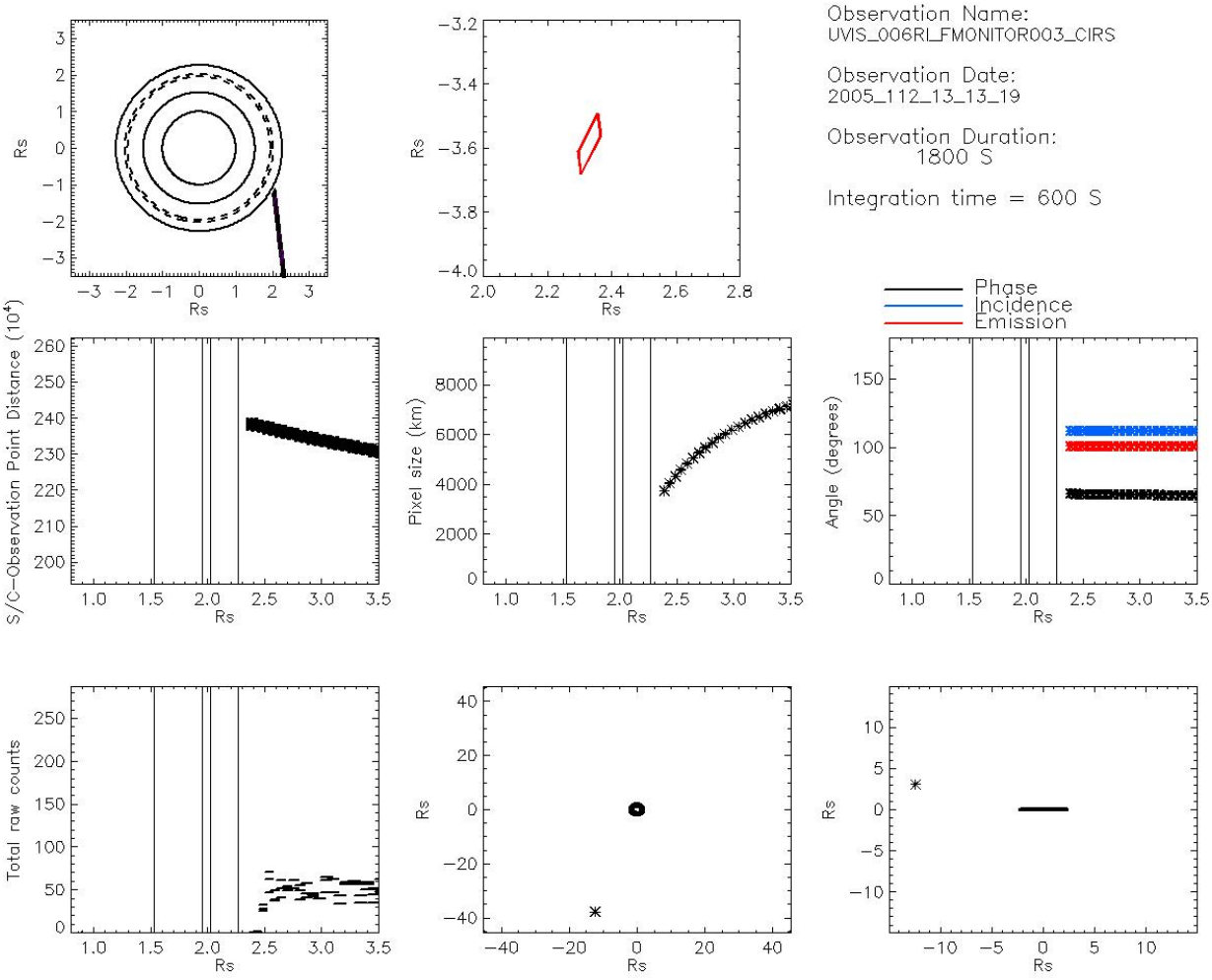


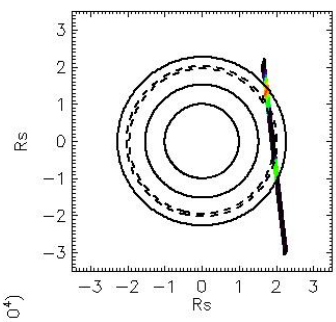


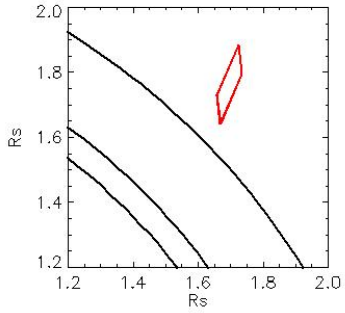







Observation Name:
UVIS_006RI_FMONITOR003_CIRS
Observation Date:
2005_112_13_13_19
Observation Duration:
1800 S
Integration time = 600 S
Phase
Incidence
Emission
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs



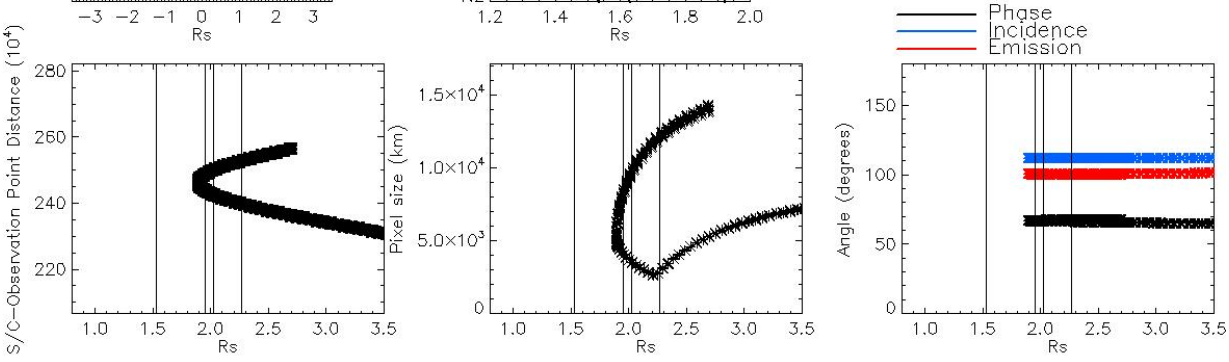


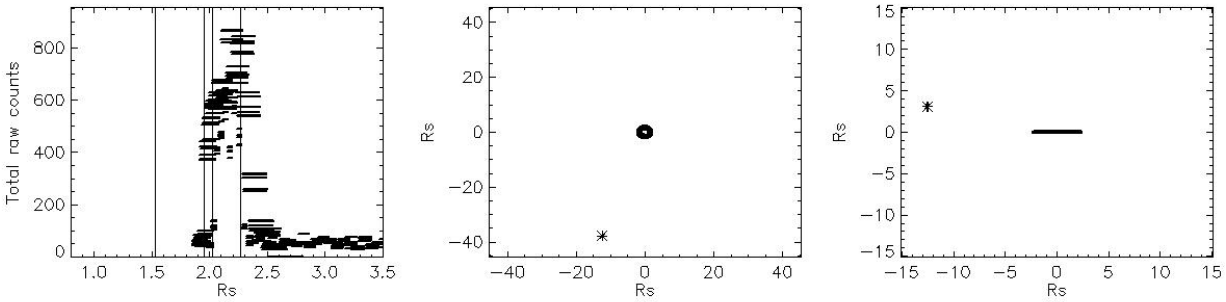
Observation Name:
UVIS_006RI_FMONITOR003_CIRS

Observation Date:
2005_112_14_03_34

Observation Duration:
3600 S

Integration time = 600 S



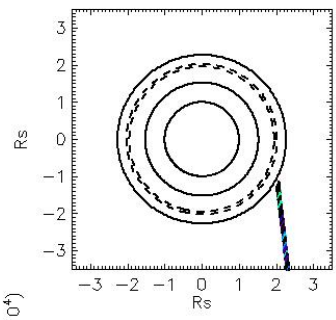


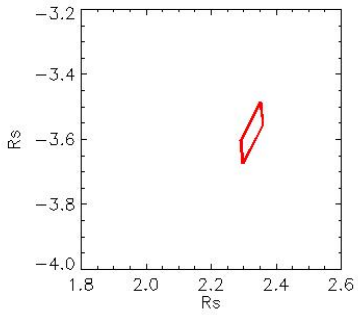
Observation Name:
UVIS_006RI_FMONITOR003_CIRS

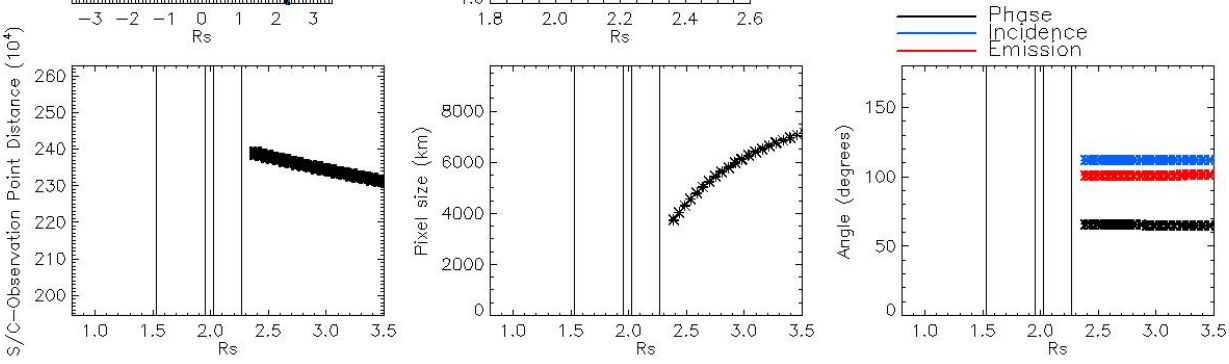
Observation Date:
2005_112_15_08_19

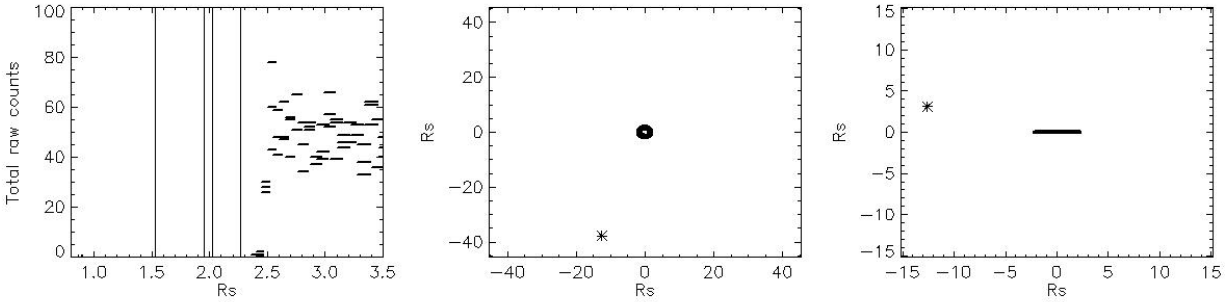
Observation Duration:
1800 S

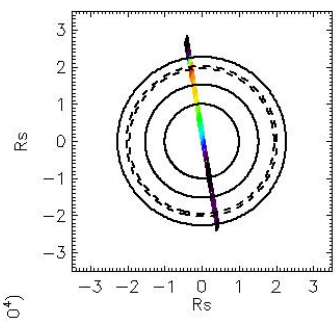
Integration time = 600 S

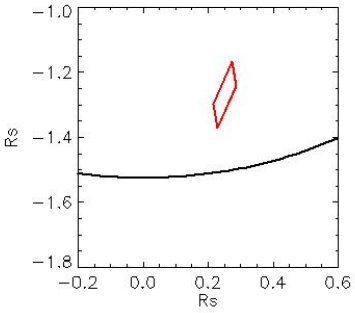










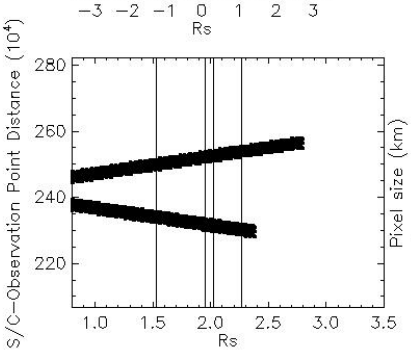


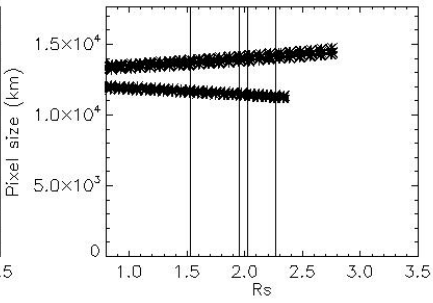
Observation Name:
UVIS_006RI_FMONITOR003_CIRS

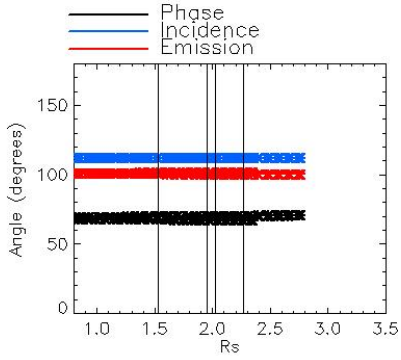
Observation Date:
2005_112_15_53_04

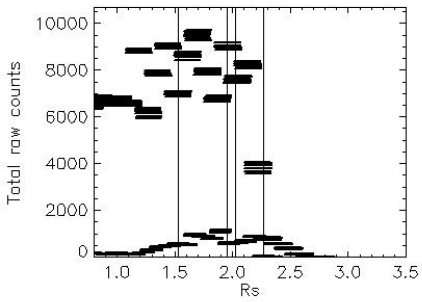
Observation Duration:
6000 S

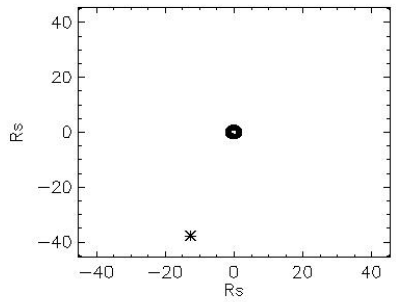
Integration time = 600 S

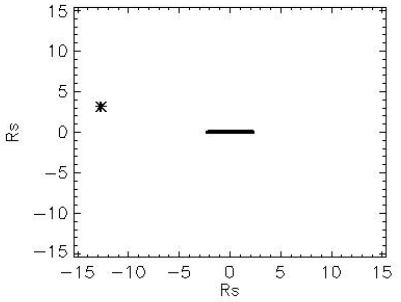










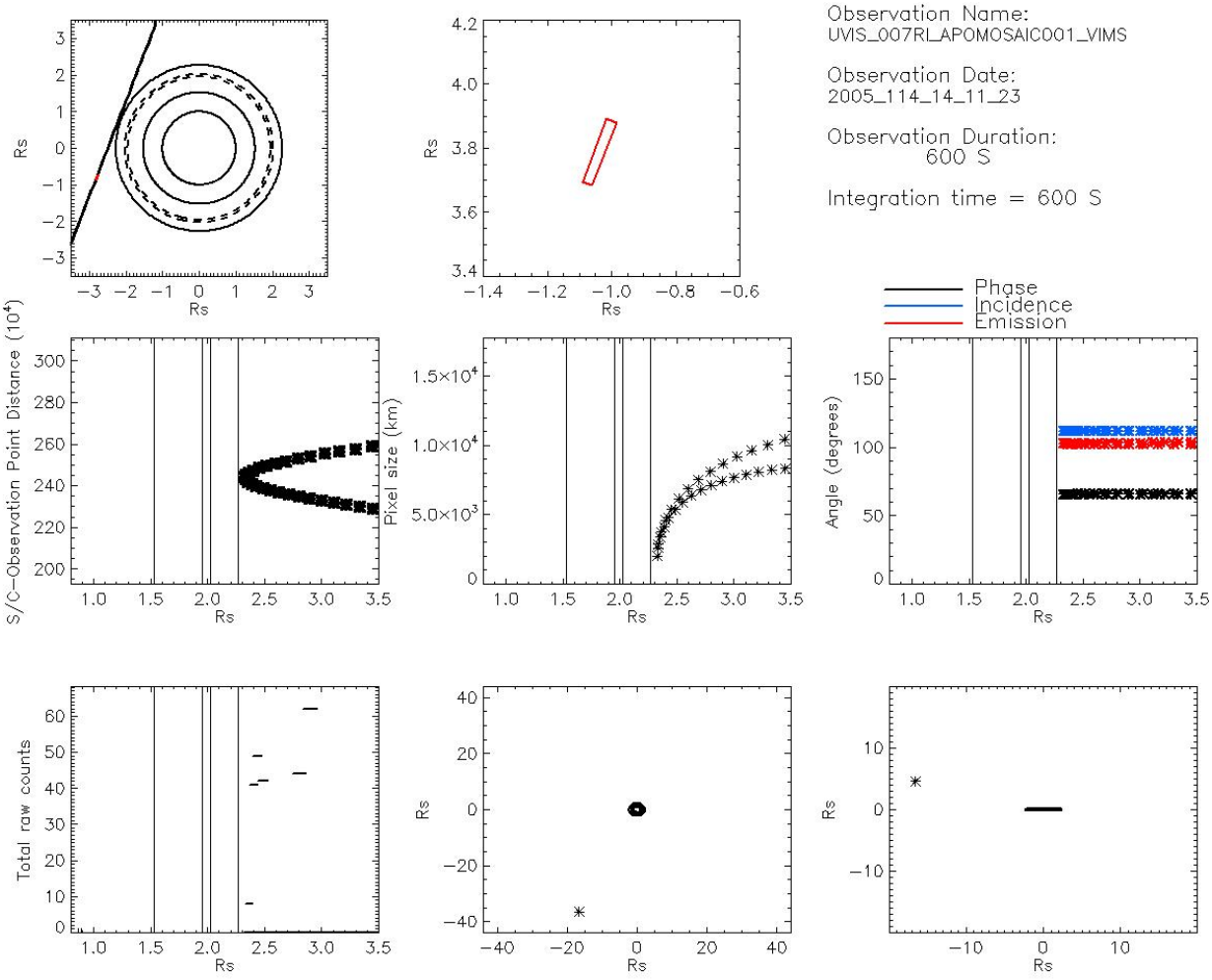


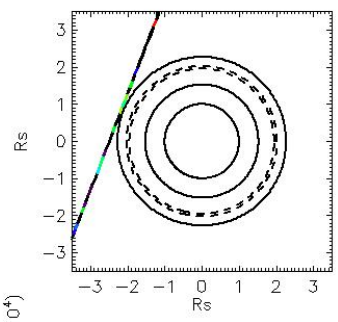
Observation Name:
UVIS_007RI_APOMOSAIC001_VIMS

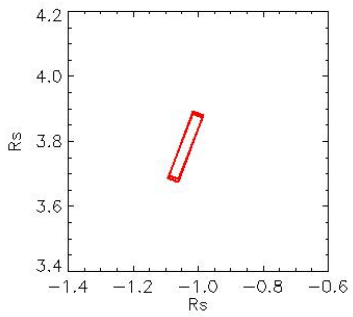
Observation Date:
2005_114_14_11_23

Observation Duration:
600 S

Integration time = 600 S





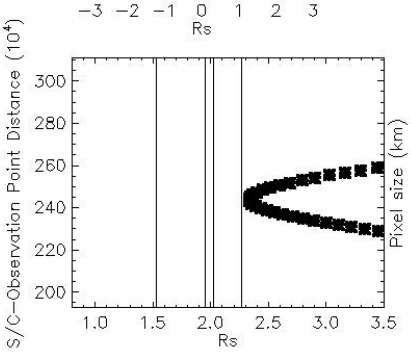


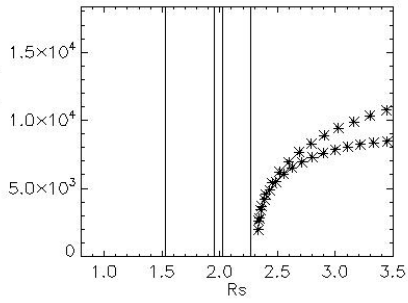
Observation Name:
UVIS_007RI_APOMOSAIC001_VIMS

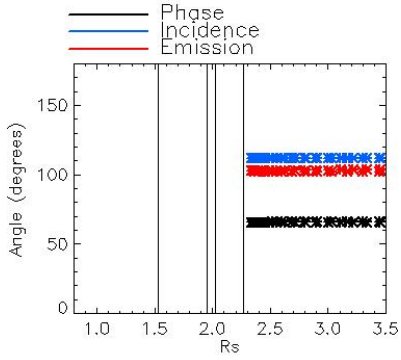
Observation Date:
2005_114_14_21_23

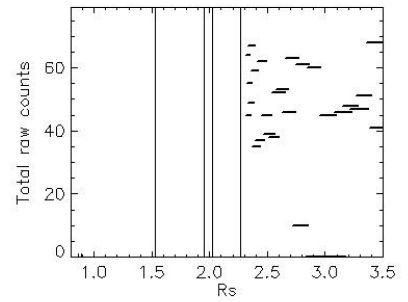
Observation Duration:
600 S

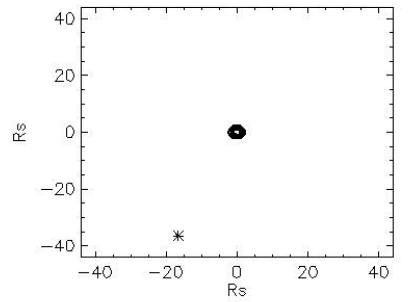
Integration time = 600 S

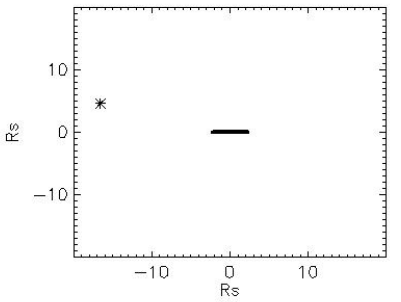


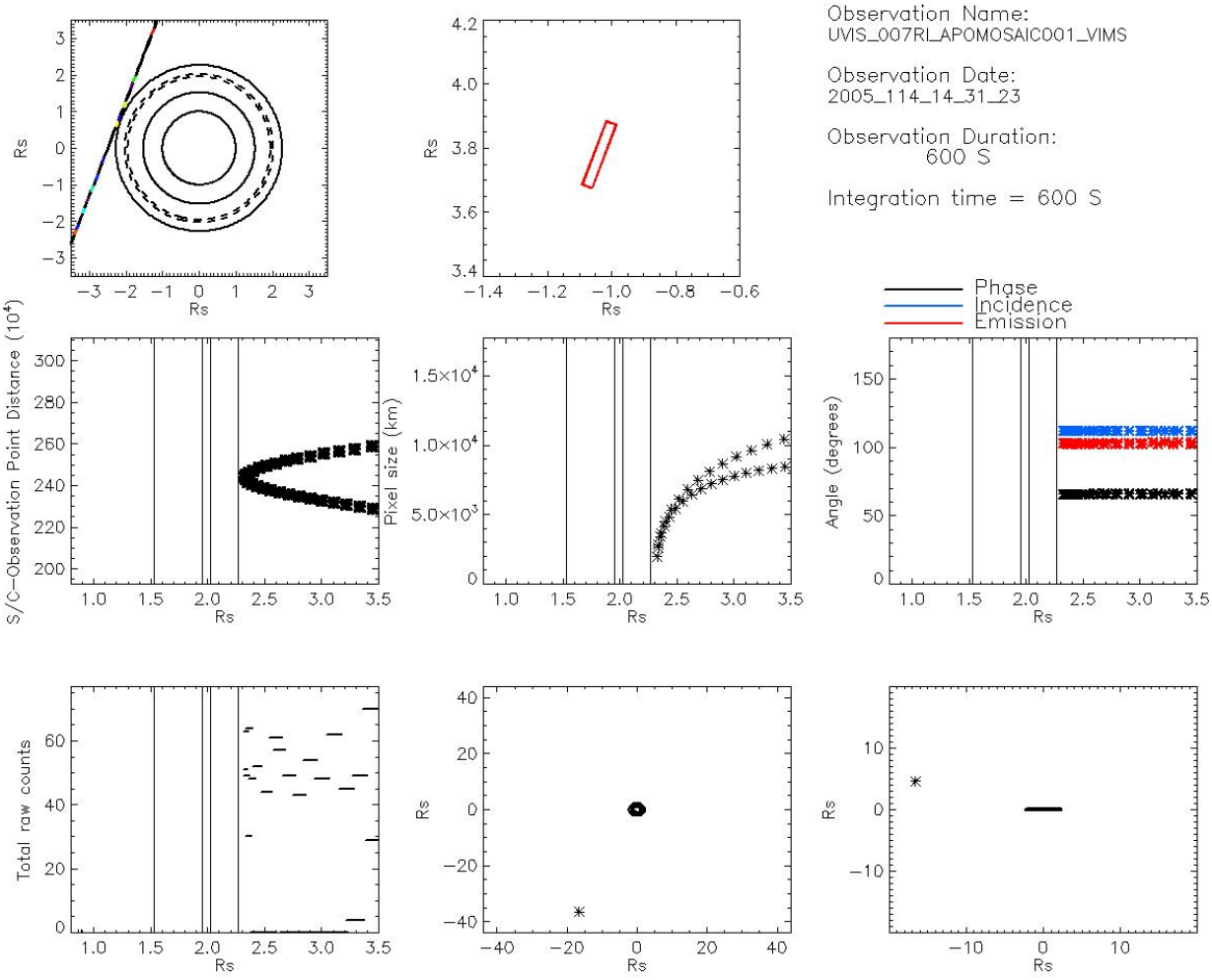










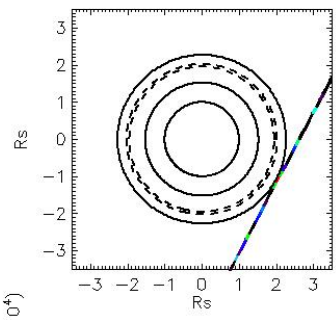

Observation Name:
UVIS_007RI_APOMOSAIC001_VIMS
Observation Date:
2005_114_14_31_23
Observation Duration:
600 S
Integration time = 600 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts

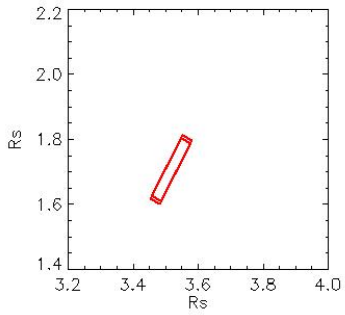
Observation Name:
UVIS_007RI_APOMOSAIC001_VIMS

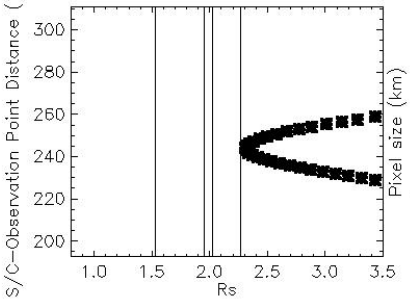
Observation Date:
2005_114_14_52_05

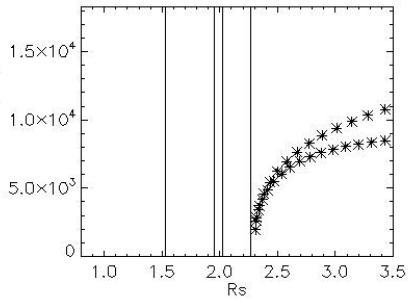
Observation Duration:
600 S

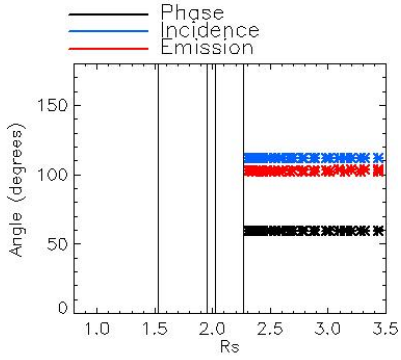
Integration time = 600 S

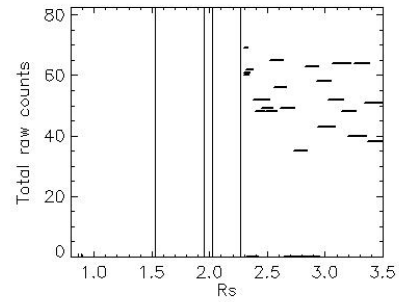


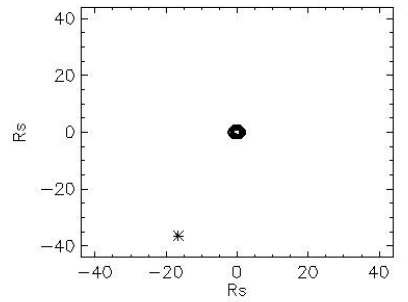


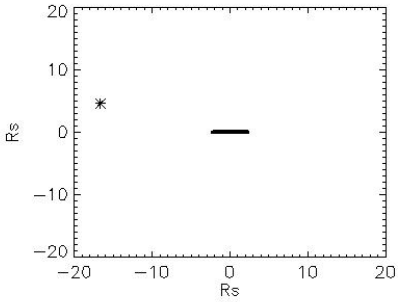


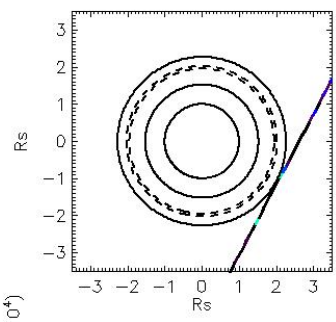


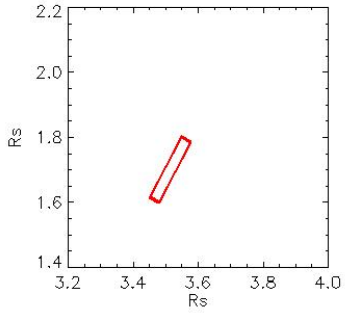










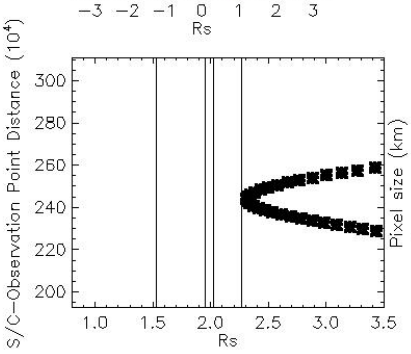


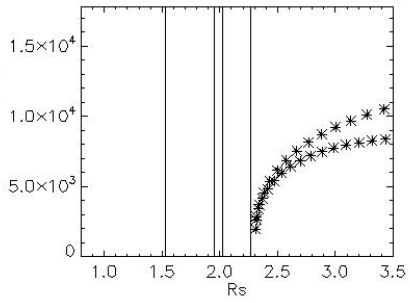
Observation Name:
UVIS_007RI_APOMOSAIC001_VIMS

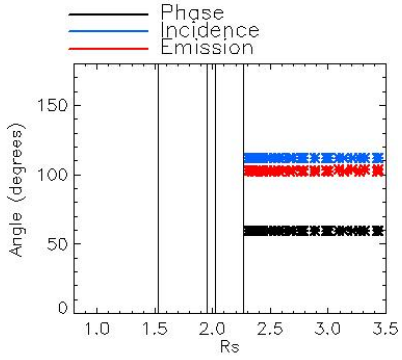
Observation Date:
2005_114_15_02_05

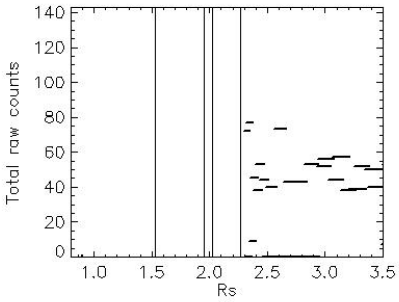
Observation Duration:
600 S

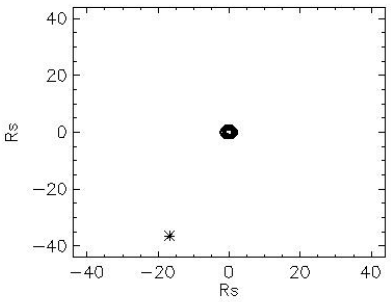
Integration time = 600 S

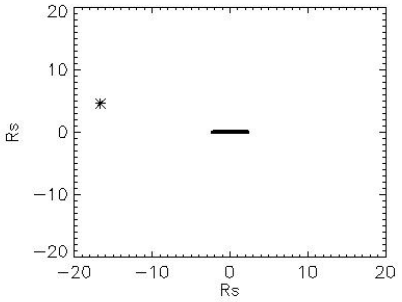


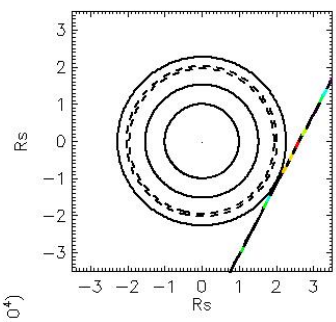


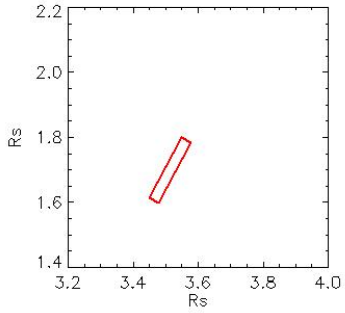










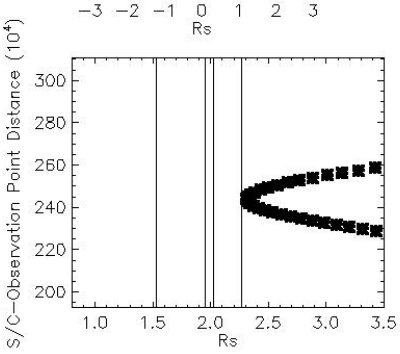


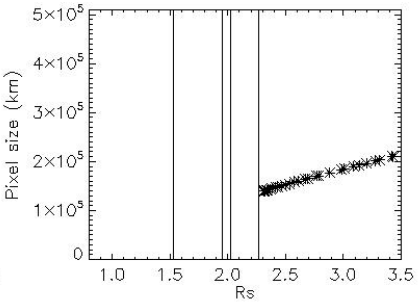
Observation Name:
UVIS_007RI_APOMOSAIC001_VIMS

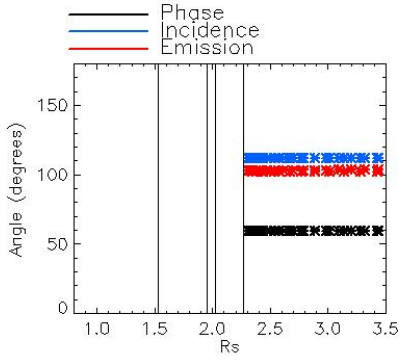
Observation Date:
2005_114_15_12_05

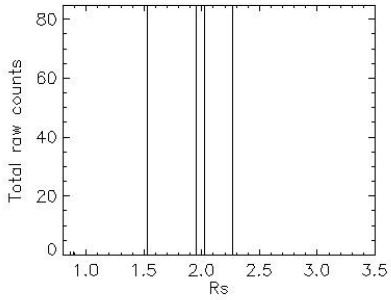
Observation Duration:
600 S

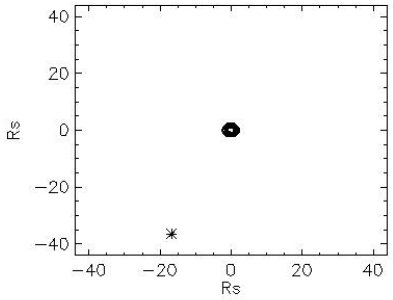
Integration time = 600 S

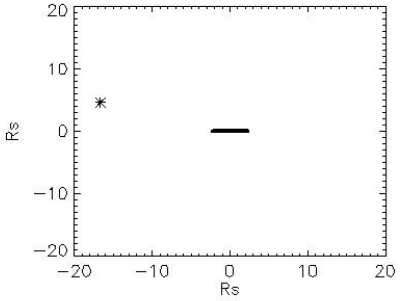










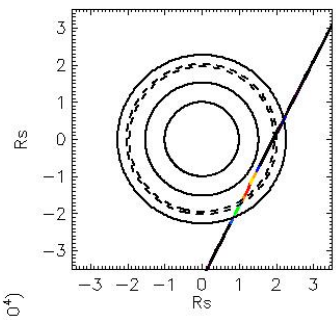


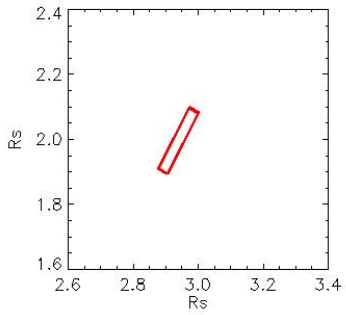
Observation Name:
UVIS_007RI_APOMOSAIC001_VIMS

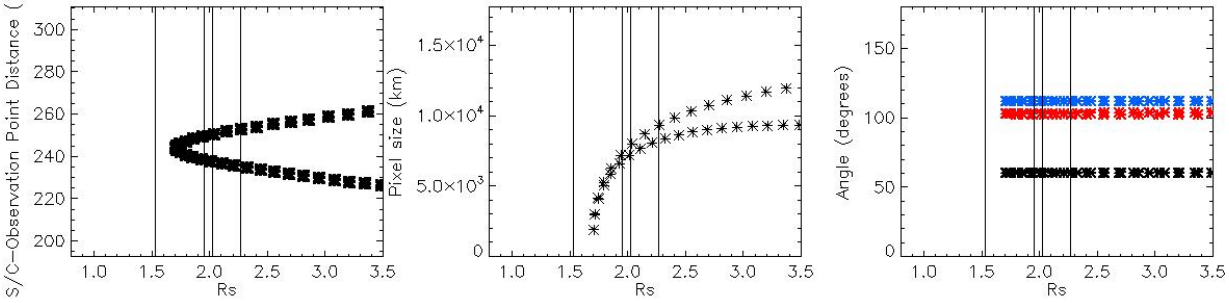
Observation Date:
2005_114_15_28_07

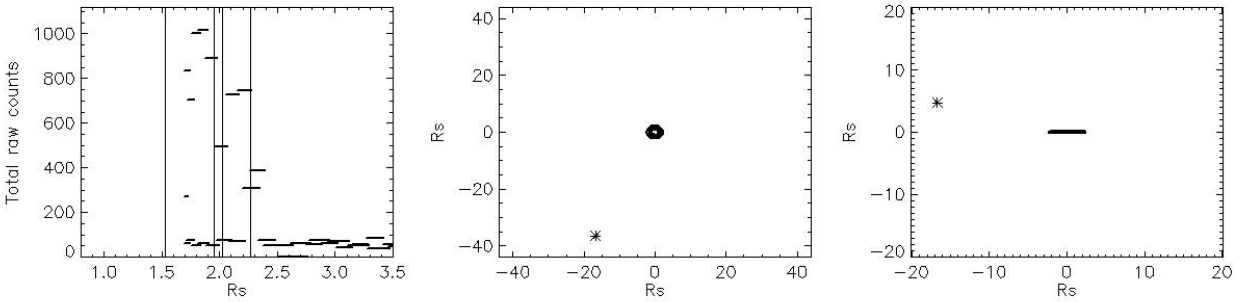
Observation Duration:
600 S

Integration time = 600 S







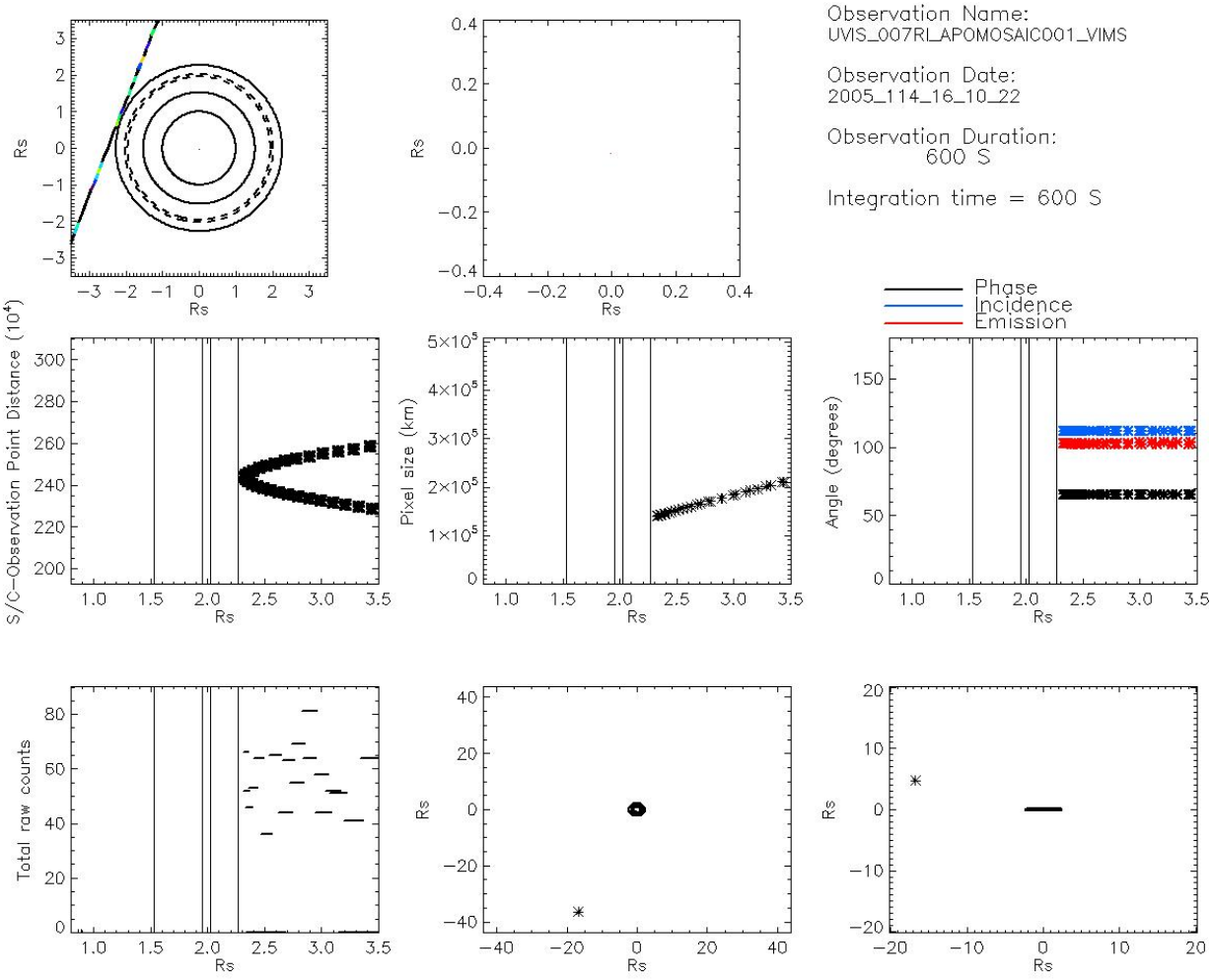


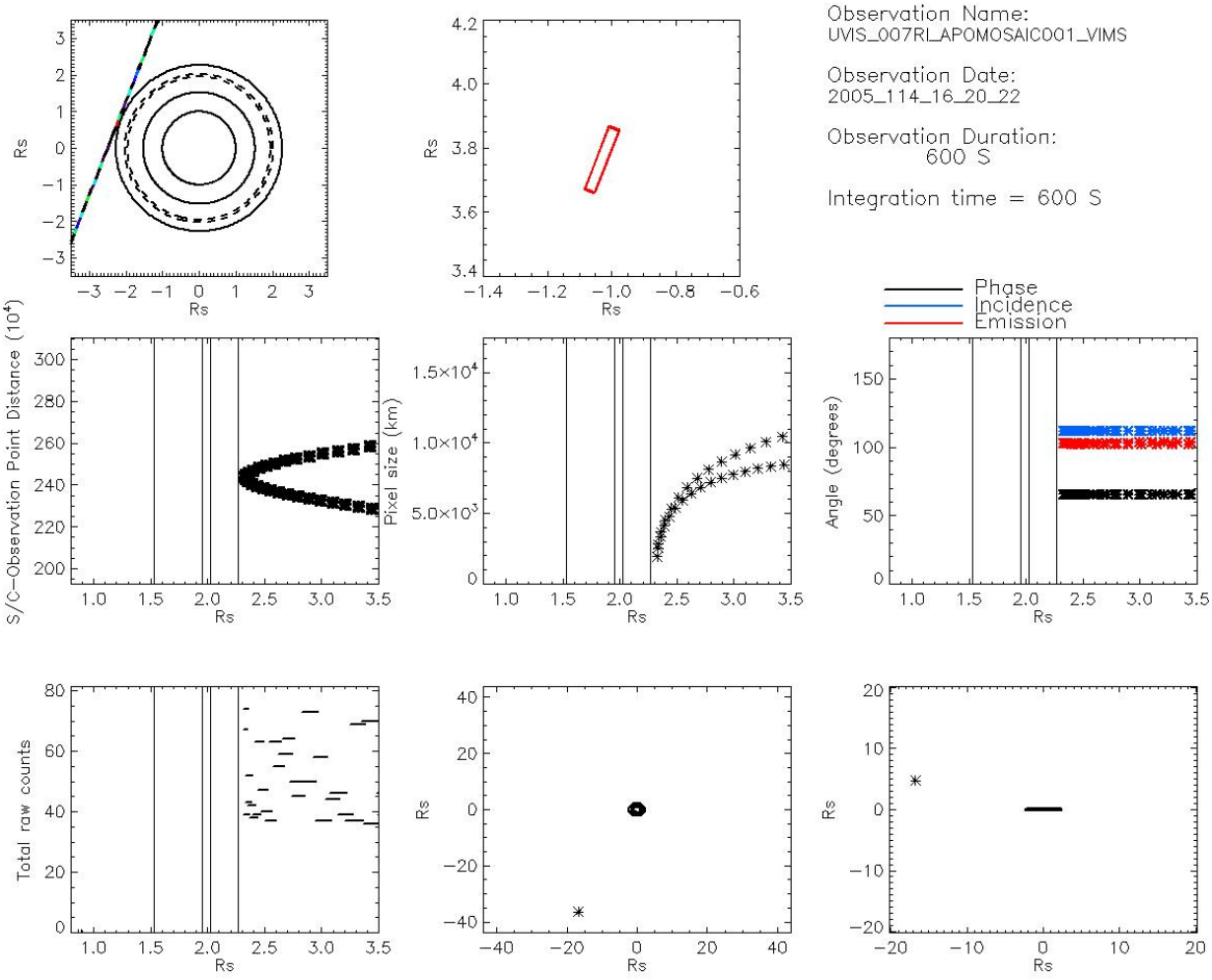
Observation Name:
UVIS_007RI_APOMOSAIC001_VIMS

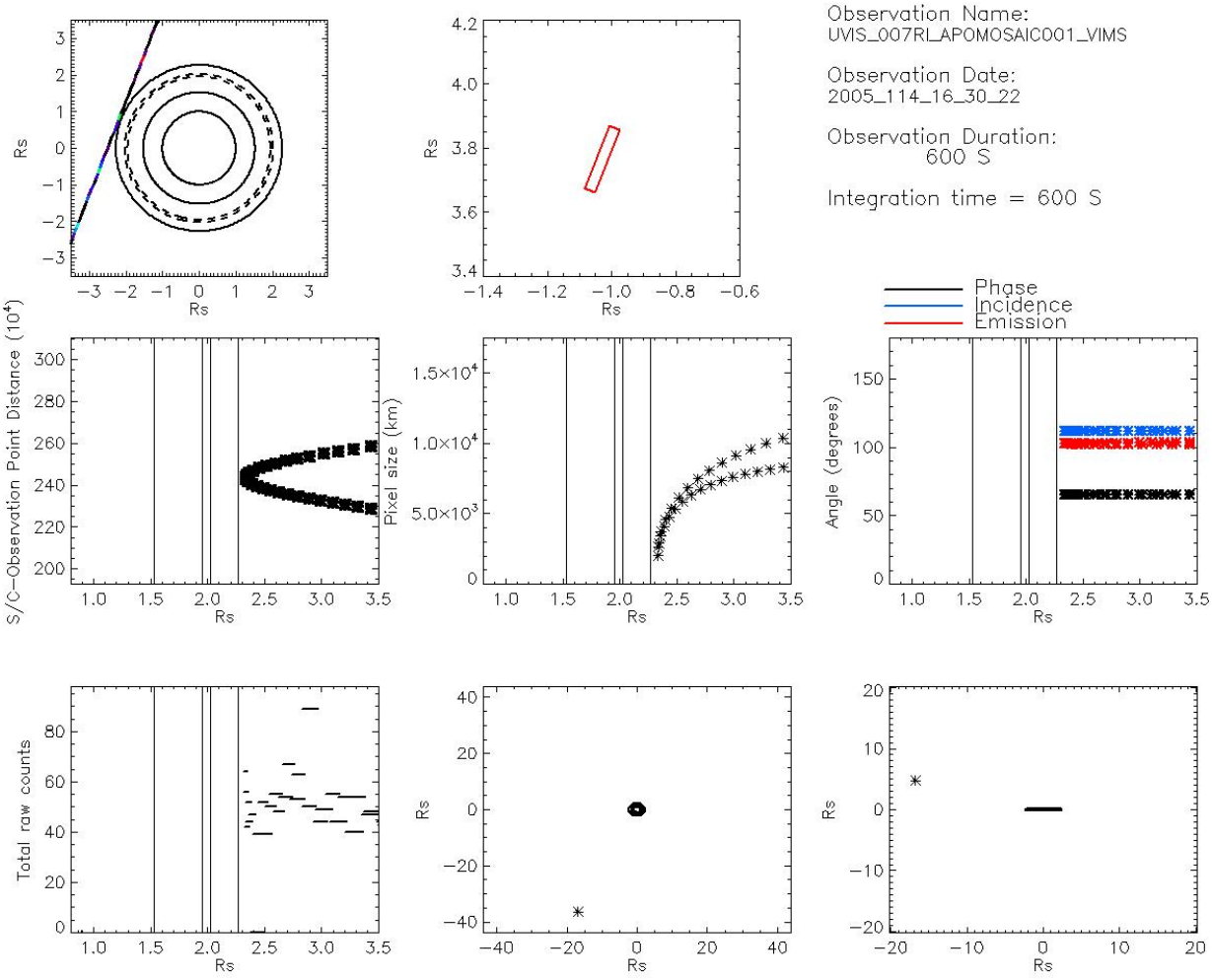
Observation Date:
2005_114_16_10_22

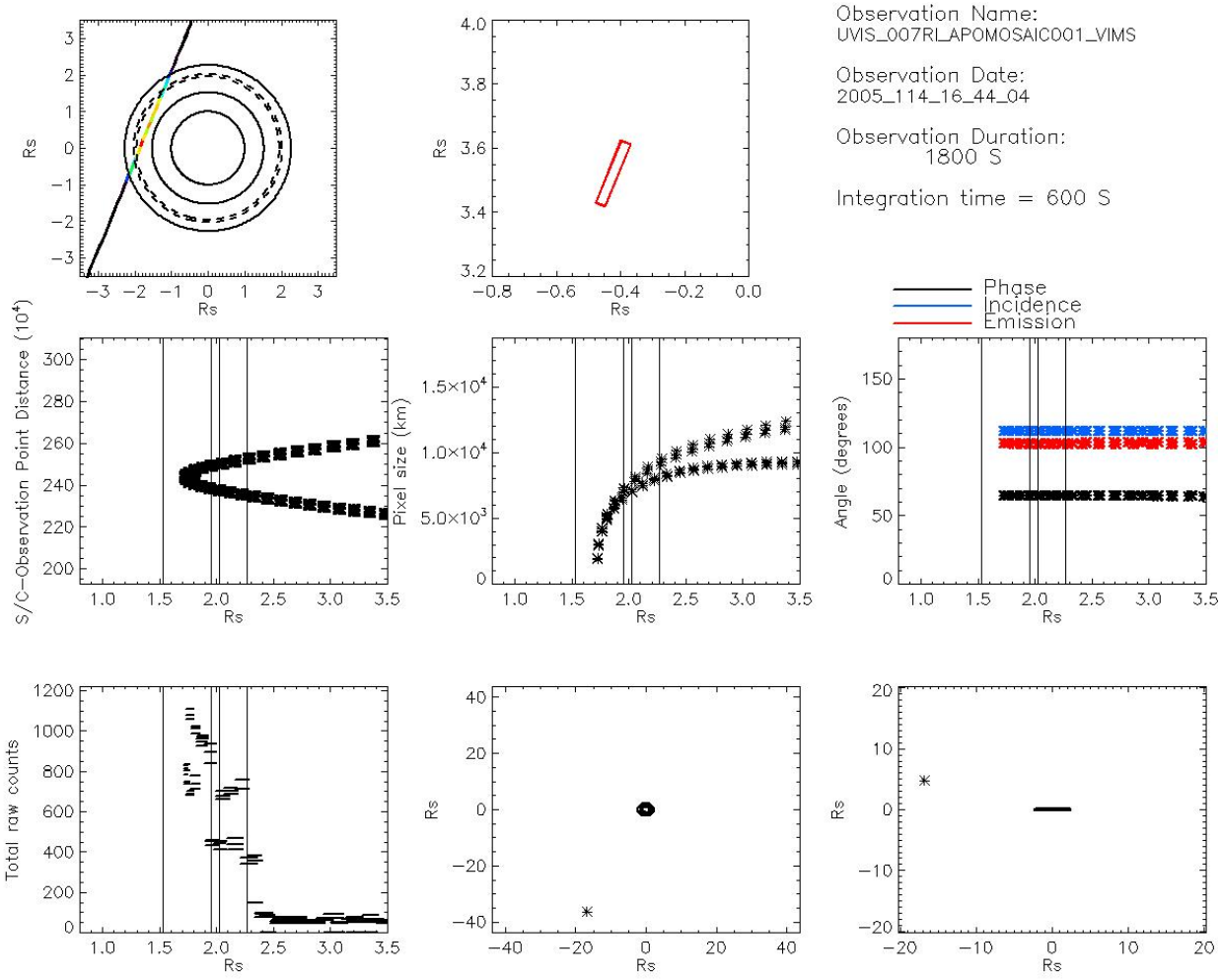
Observation Duration:
600 S

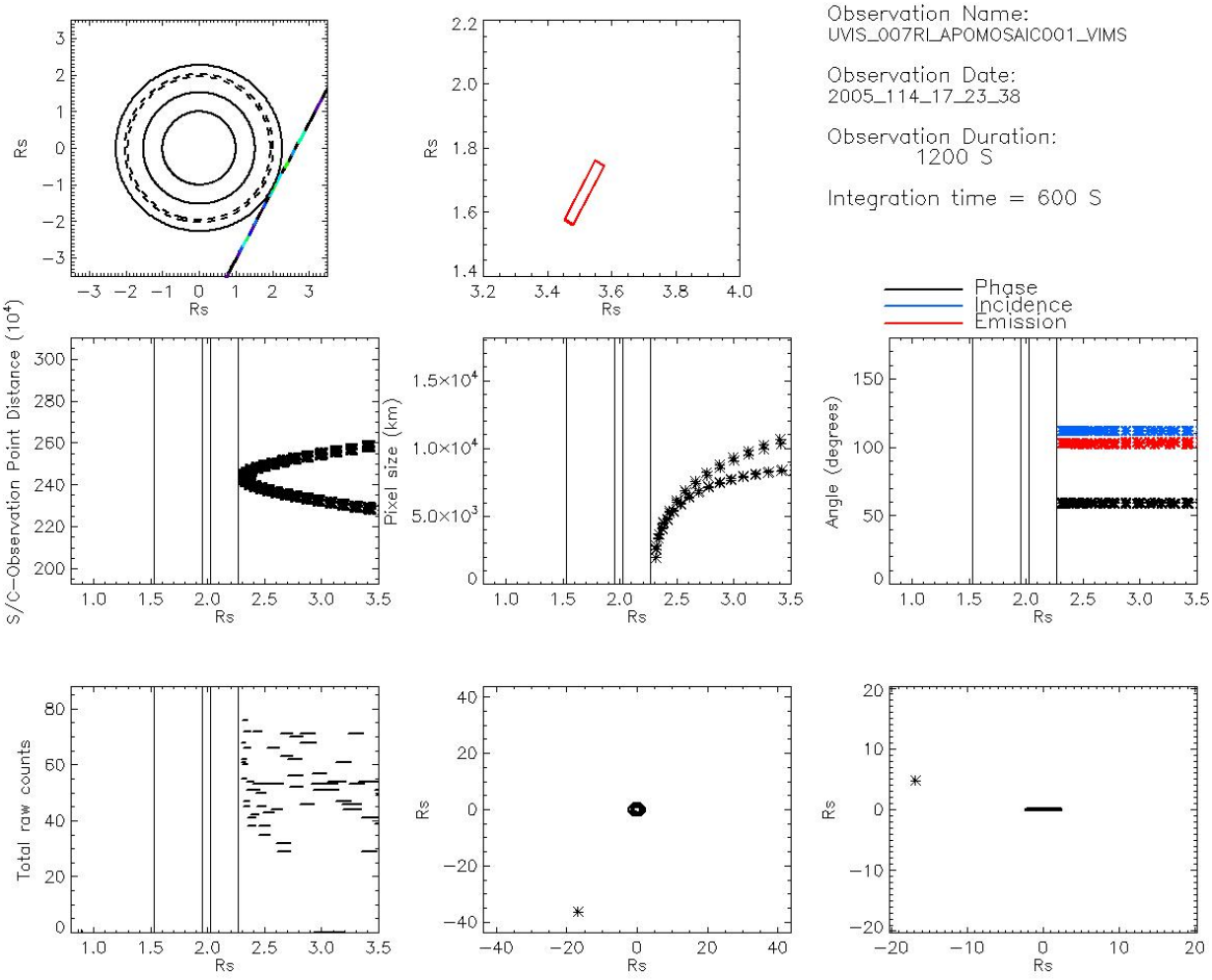
Integration time = 600 S




Observation Name:
UVIS_007RI_APOMOSAIC001_VIMS
Observation Date:
2005_114_16_20_22
Observation Duration:
600 S
Integration time = 600 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts


Observation Name:
UVIS_007RI_APOMOSAIC001_VIMS
Observation Date:
2005_114_16_30_22
Observation Duration:
600 S
Integration time = 600 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts


Observation Name:
UVIS_007RI_APOMOSAIC001_VIMS
Observation Date:
2005_114_16_44_04
Observation Duration:
1800 S
Integration time = 600 S
Phase
Incidence
Emission
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs

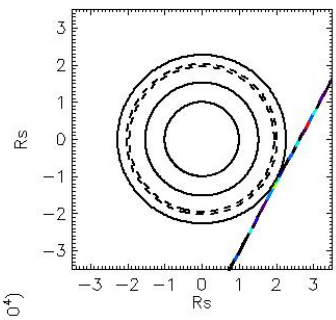

Observation Name:
UVIS_007RI_APOMOSAIC001_VIMS
Observation Date:
2005_114_17_23_38
Observation Duration:
1200 S
Integration time = 600 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts

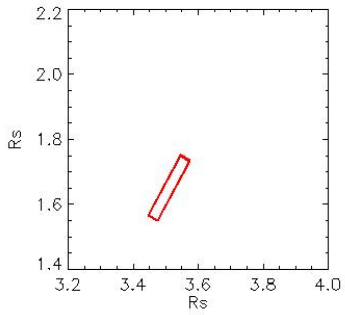
Observation Name:
UVIS_007RI_APOMOSAIC001_VIMS

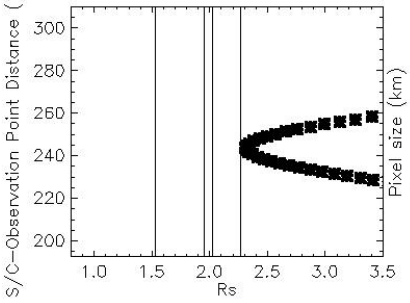
Observation Date:
2005_114_17_43_38

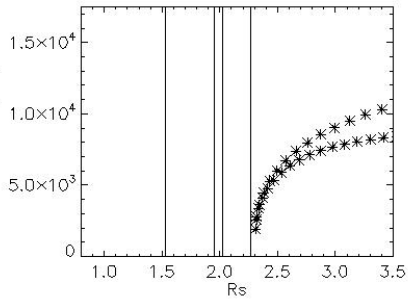
Observation Duration:
600 S

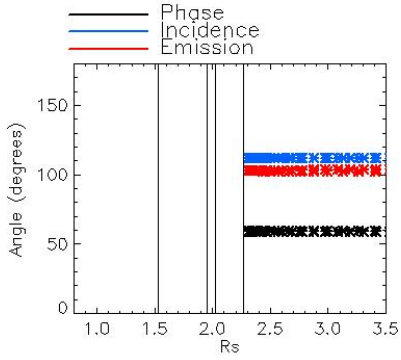
Integration time = 600 S

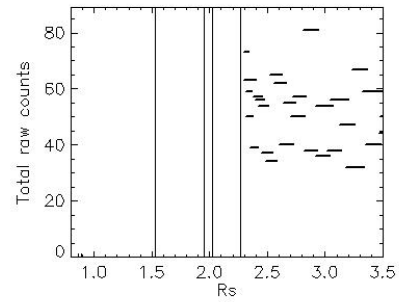


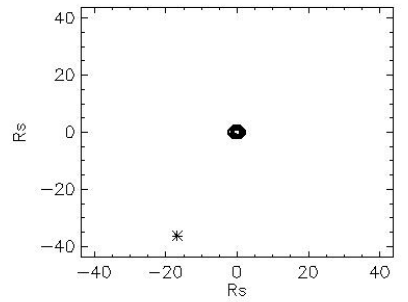


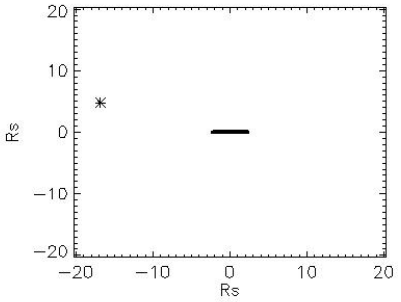


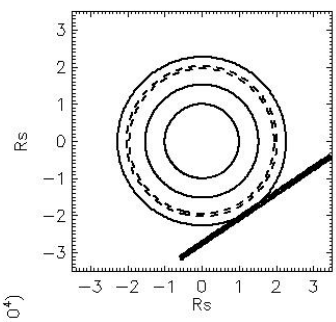


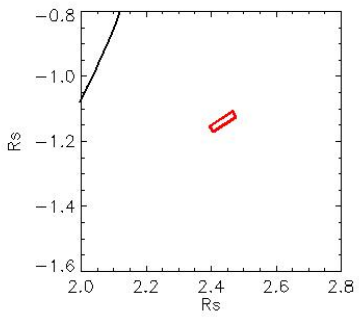










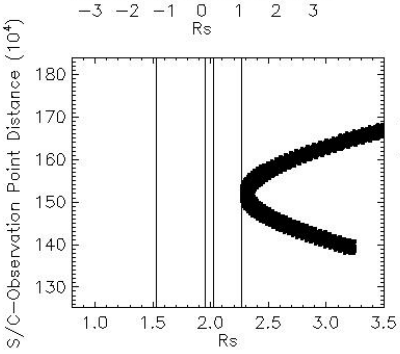


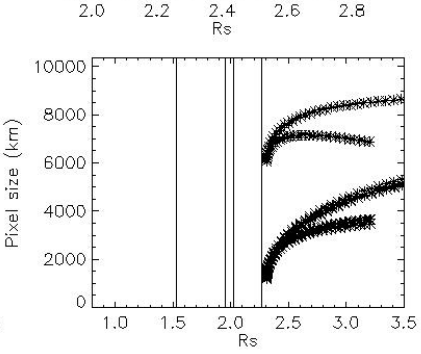
Observation Name:
UVIS_007RI_LATPHASE001_VIMS

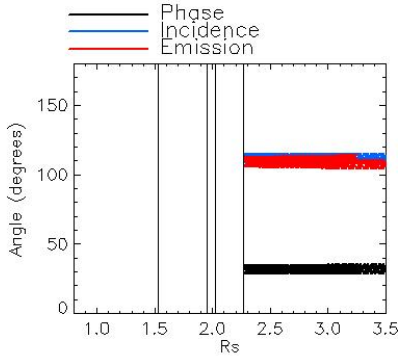
Observation Date:
2005_120_09_44_07

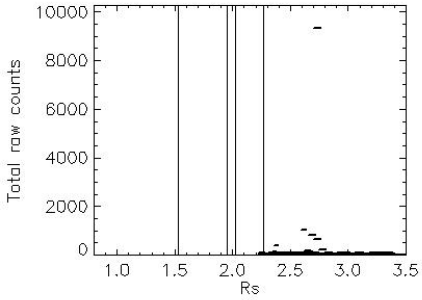
Observation Duration:
2048 S

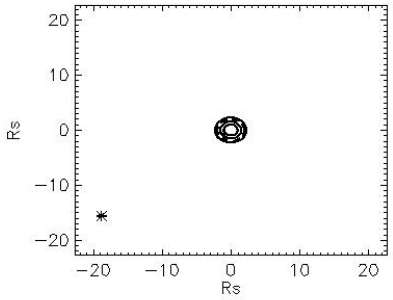
Integration time = 512 S

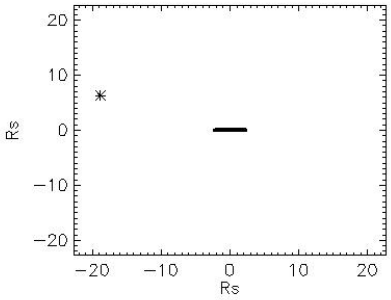


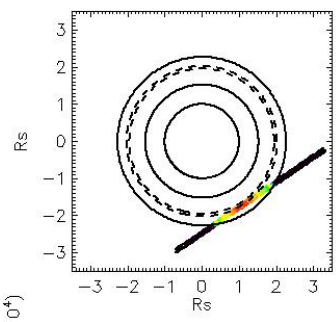


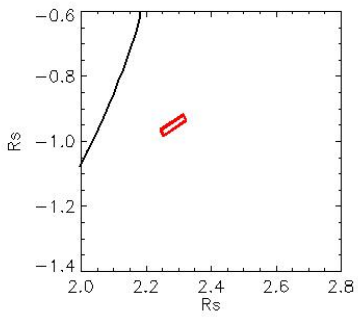










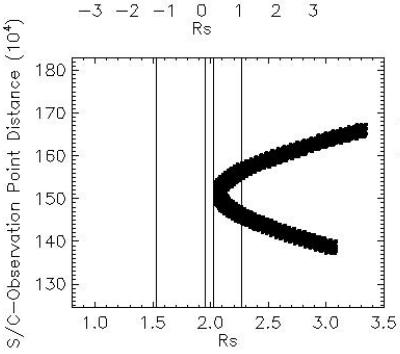


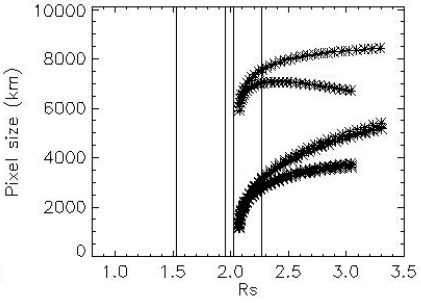
Observation Name:
UVIS_007RI_LATPHASE001_VIMS

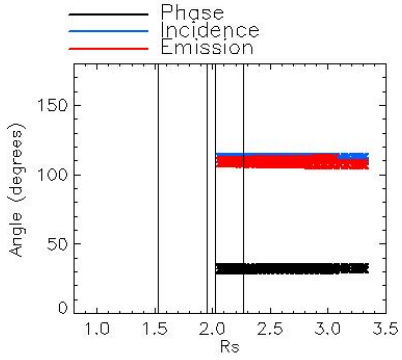
Observation Date:
2005_120_10_19_32

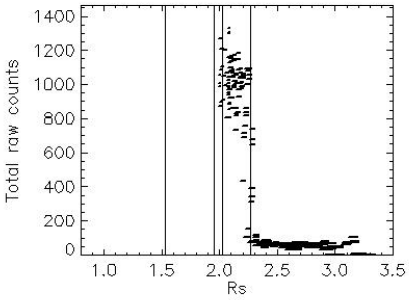
Observation Duration:
2048 S

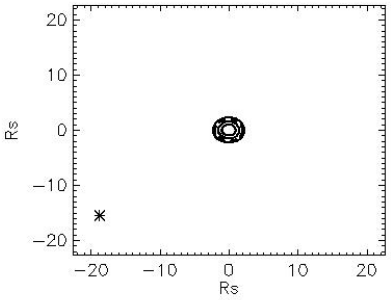
Integration time = 512 S

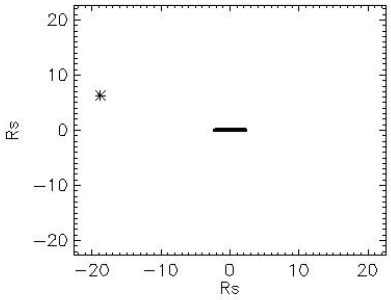


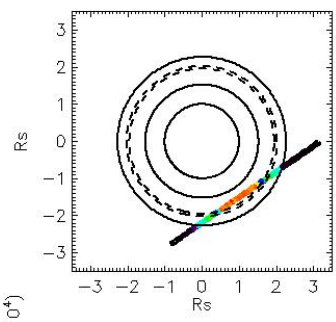


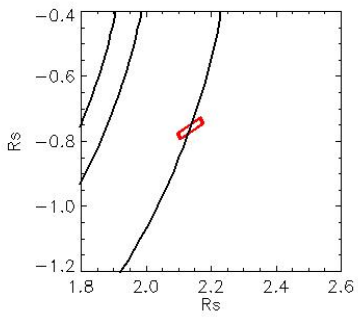










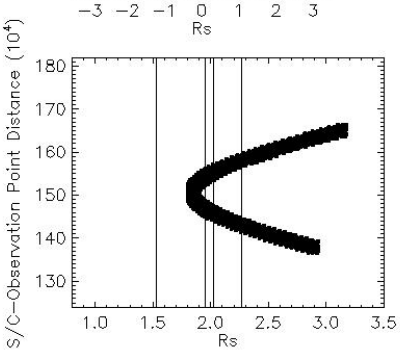


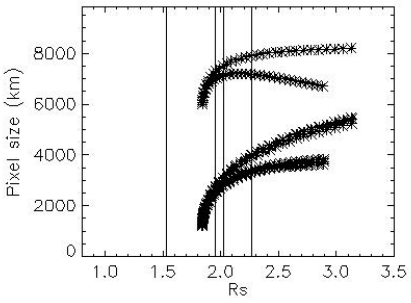
Observation Name:
UVIS_007RI_LATPHASE001_VIMS

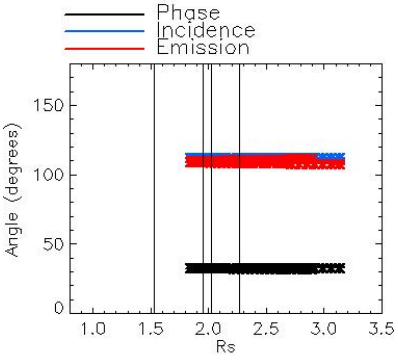
Observation Date:
2005_120_10_54_58

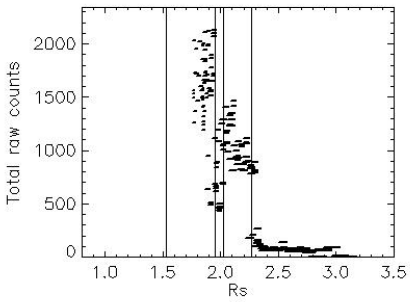
Observation Duration:
2048 S

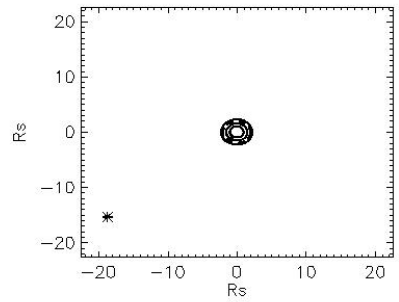
Integration time = 512 S

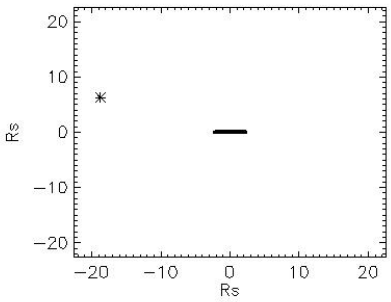


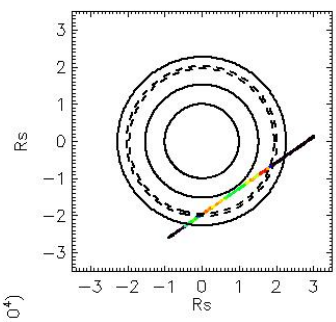


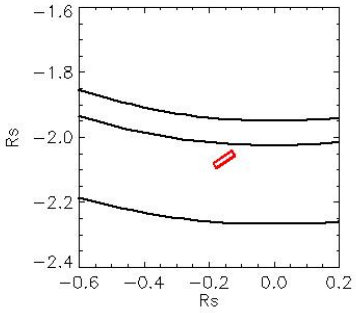










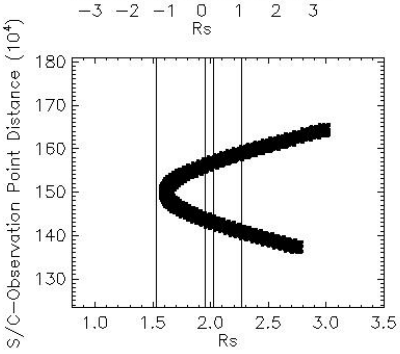


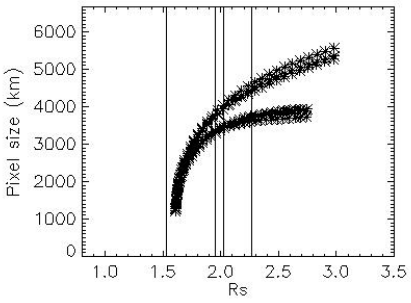
Observation Name:
UVIS_007RI_LATPHASE001_VIMS

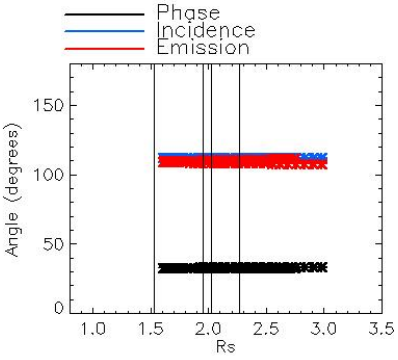
Observation Date:
2005_120_11_30_24

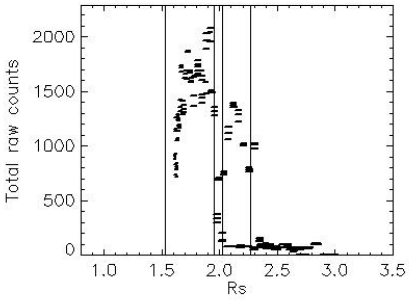
Observation Duration:
1536 S

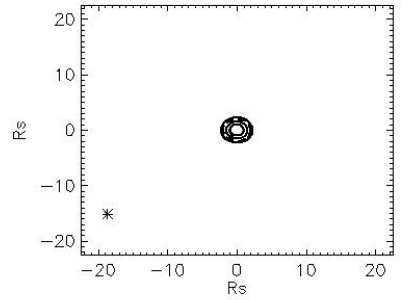
Integration time = 512 S

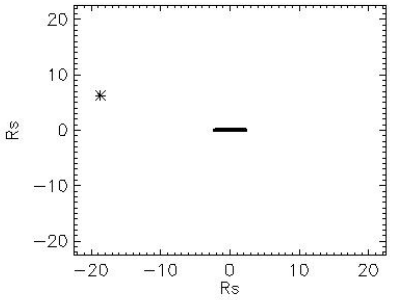










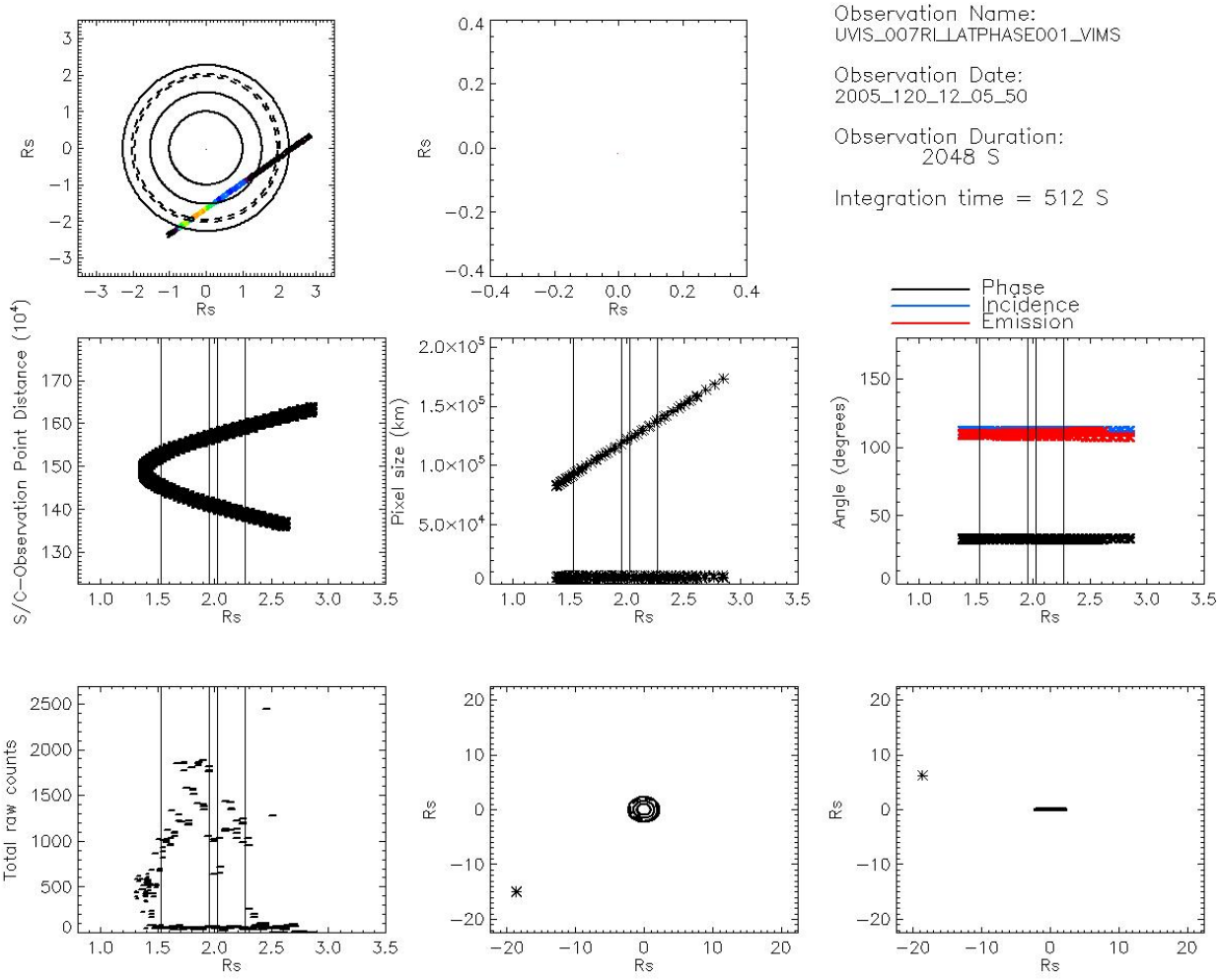


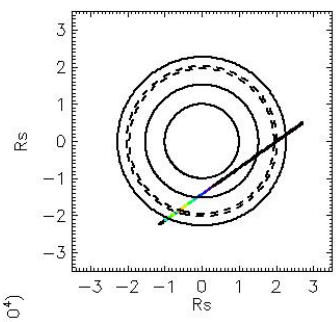
Observation Name:
UVIS_007RI_LATPHASE001_VIMS

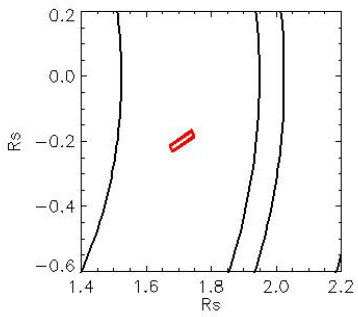
Observation Date:
2005_120_12_05_50

Observation Duration:
2048 S

Integration time = 512 S





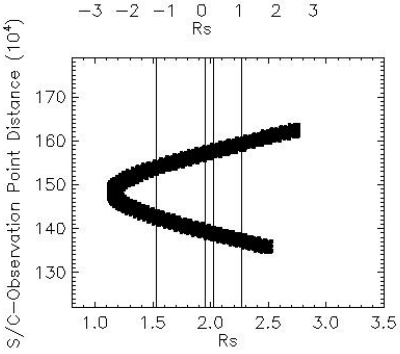


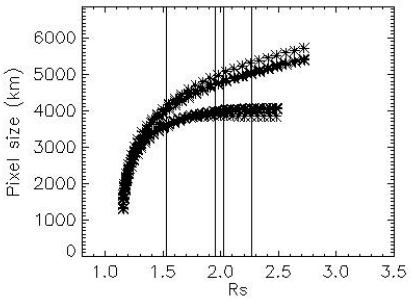
Observation Name:
UVIS_007RI_LATPHASE001_VIMS

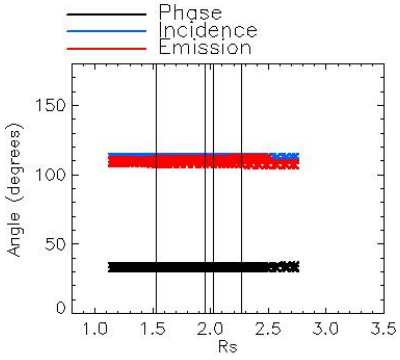
Observation Date:
2005_120_12_41_16

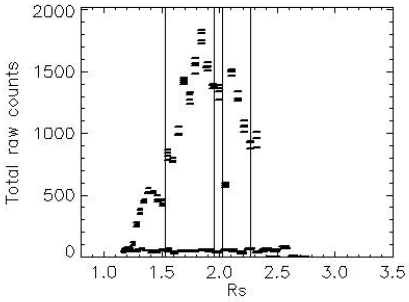
Observation Duration:
2048 S

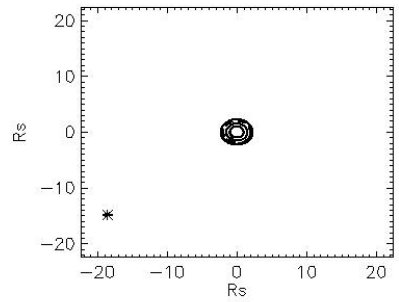
Integration time = 512 S

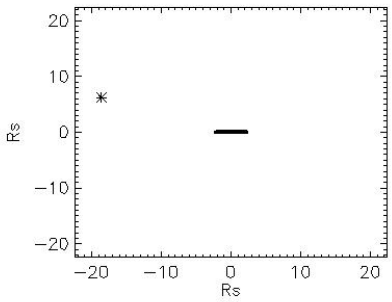


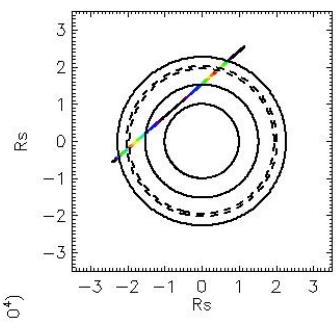


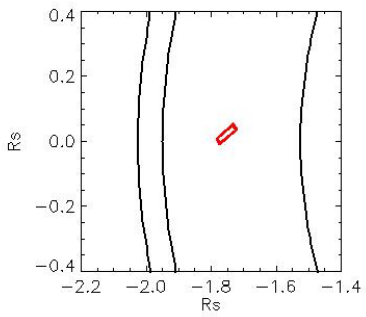










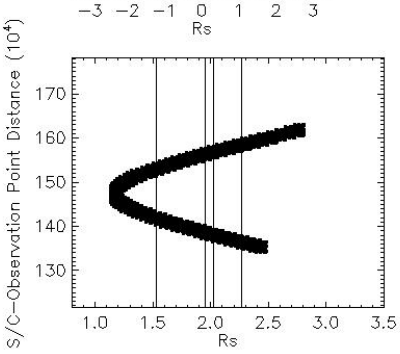


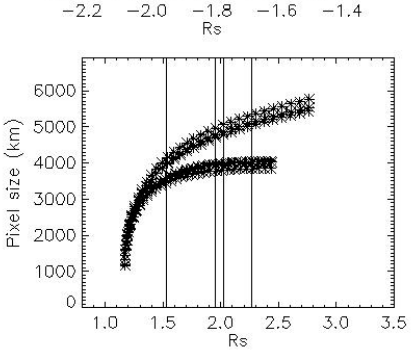
Observation Name:
UVIS_007RI_LATPHASE001_VIMS

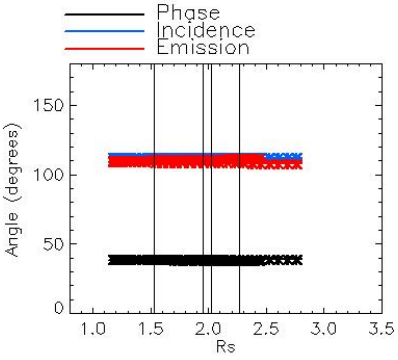
Observation Date:
2005_120_13_21_51

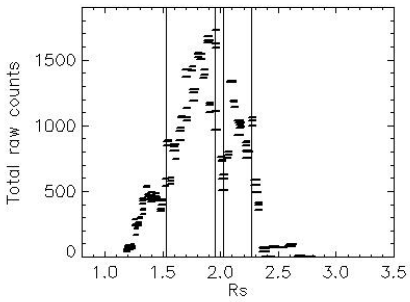
Observation Duration:
1536 S

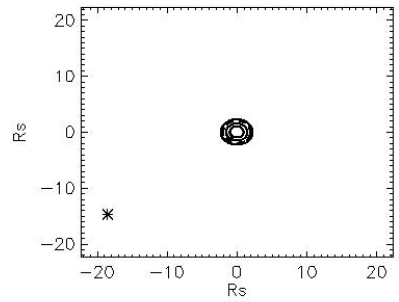
Integration time = 512 S

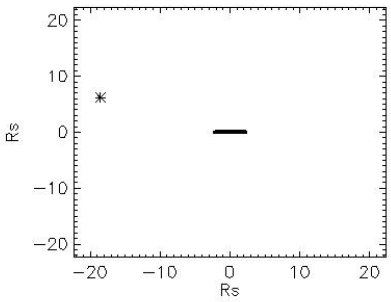


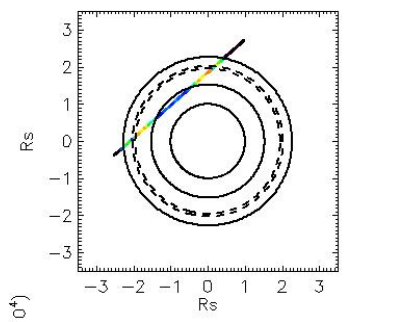


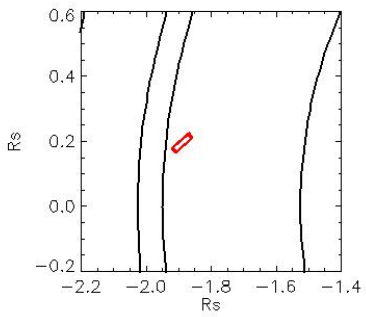










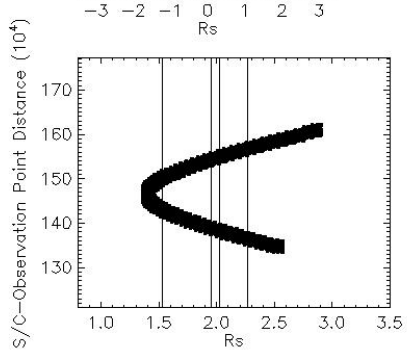


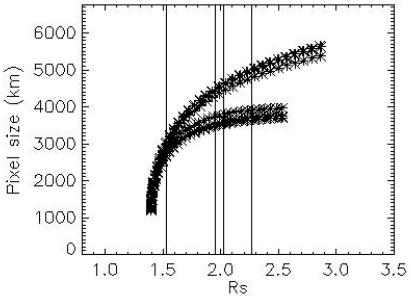
Observation Name:
UVIS_007RI_LATPHASE001_VIMS

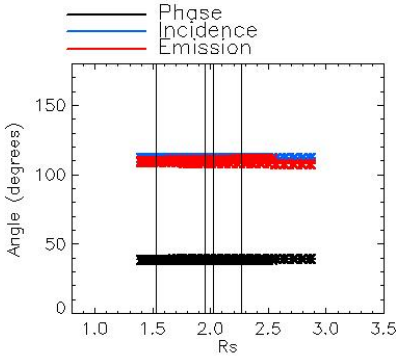
Observation Date:
2005_120_13_53_37

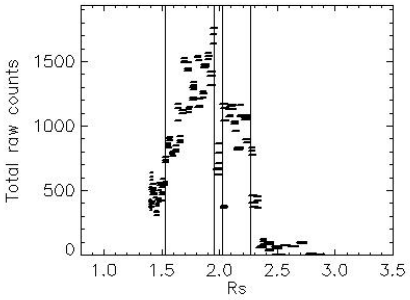
Observation Duration:
1536 S

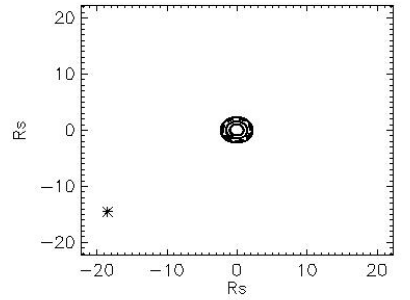
Integration time = 512 S

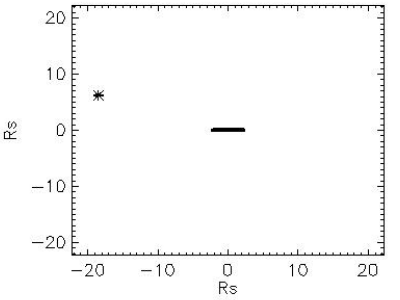


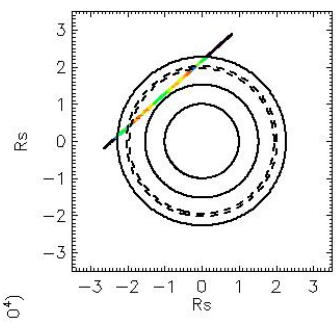


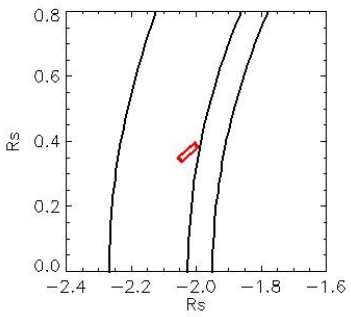










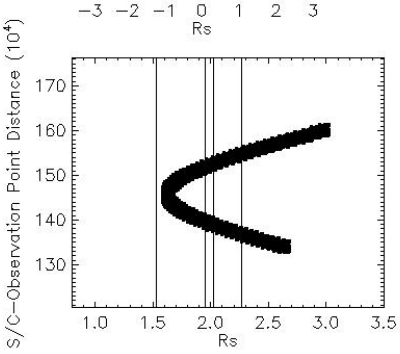


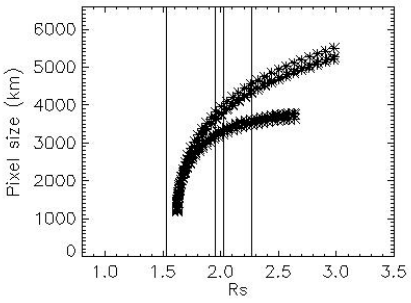
Observation Name:
UVIS_007RI_LATPHASE001_VIMS

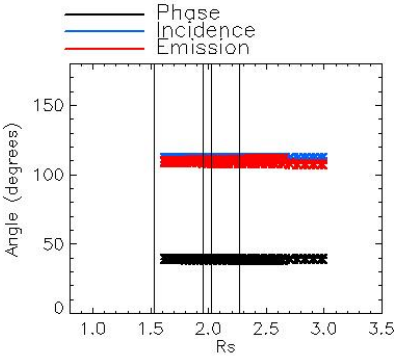
Observation Date:
2005_120_14_25_23

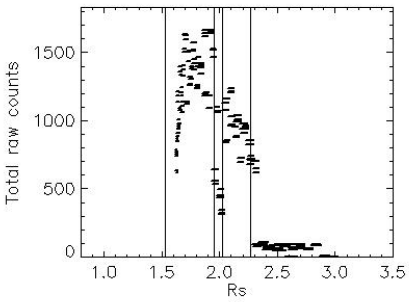
Observation Duration:
1536 S

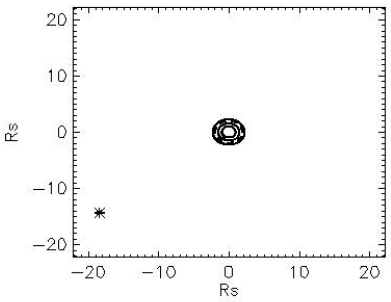
Integration time = 512 S

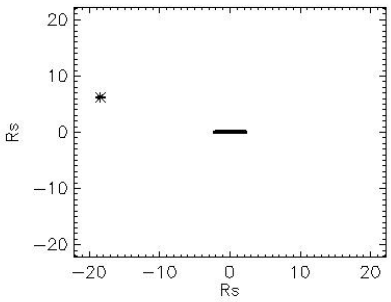


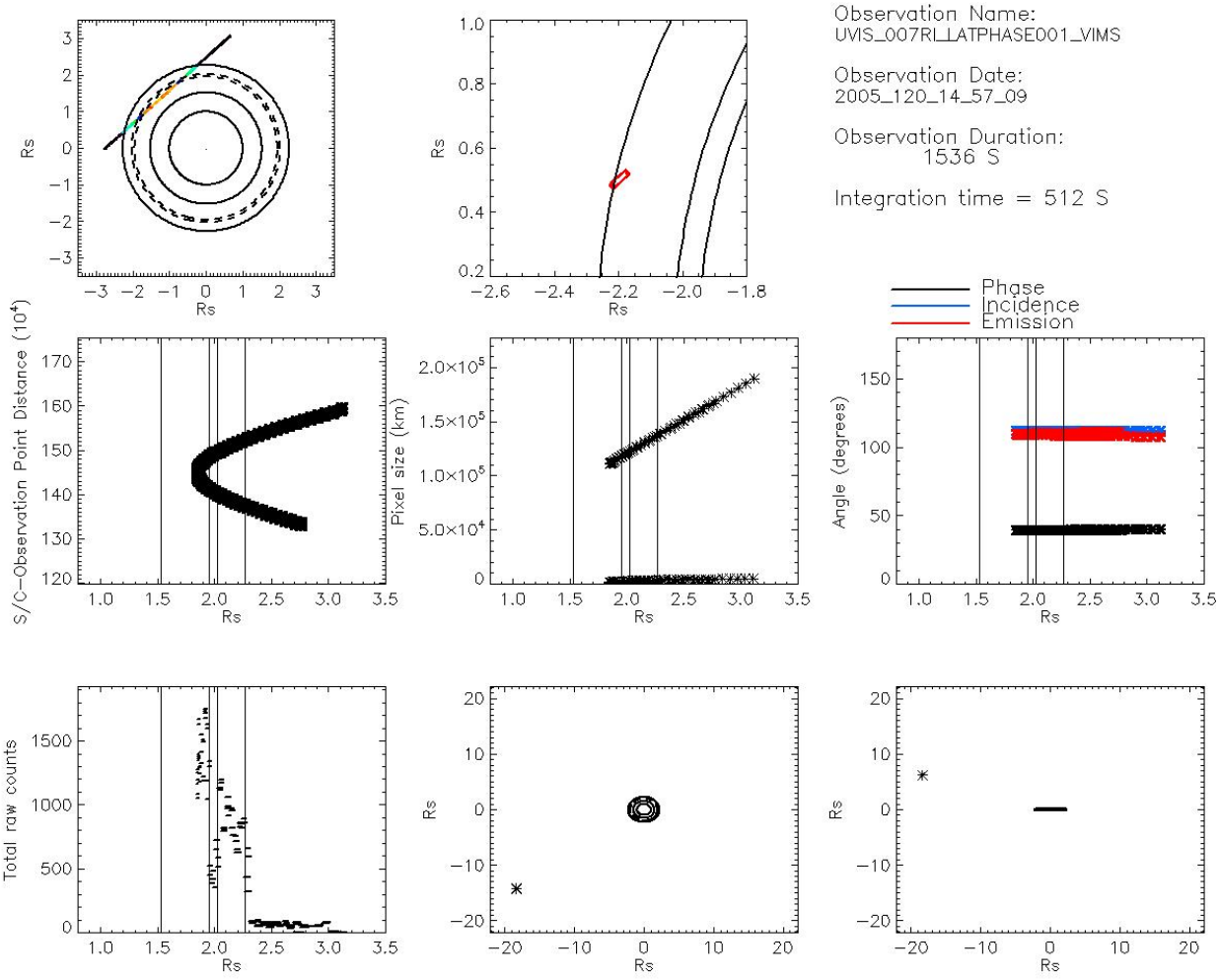










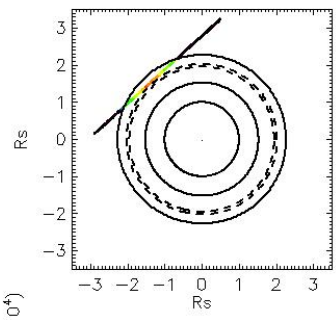

Observation Name:
UVIS_007RI_LATPHASE001_VIMS
Observation Date:
2005_120_14_57_09
Observation Duration:
1536 S
Integration time = 512 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts

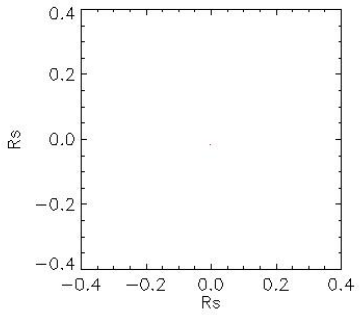
Observation Name:
UVIS_007RI_LATPHASE001_VIMS

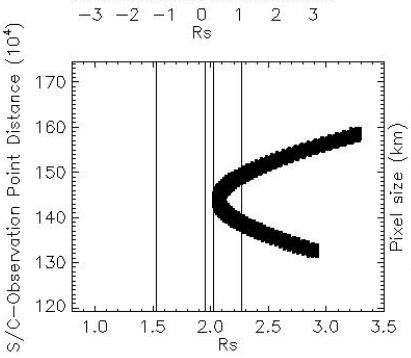
Observation Date:
2005_120_15_28_55

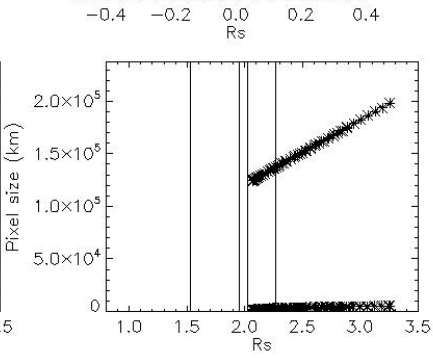
Observation Duration:
1536 S

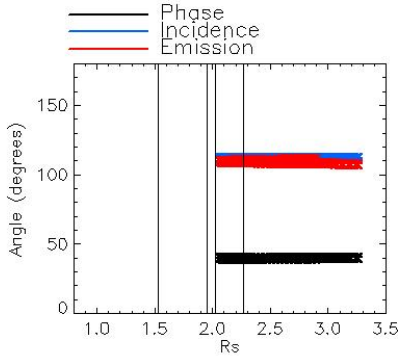
Integration time = 512 S

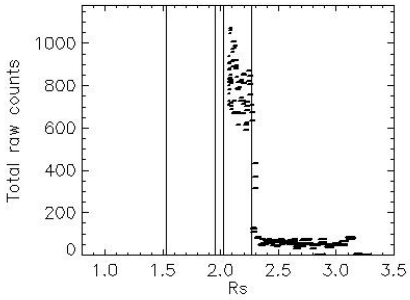


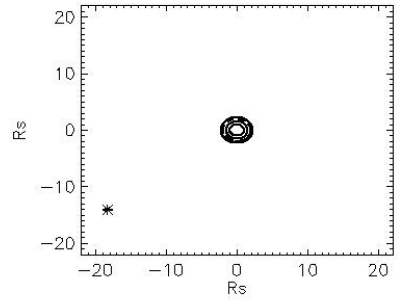


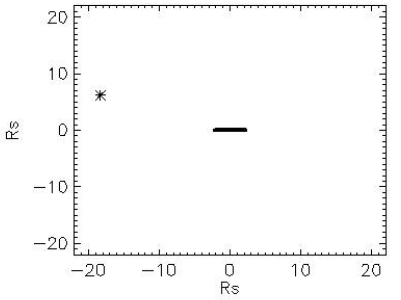


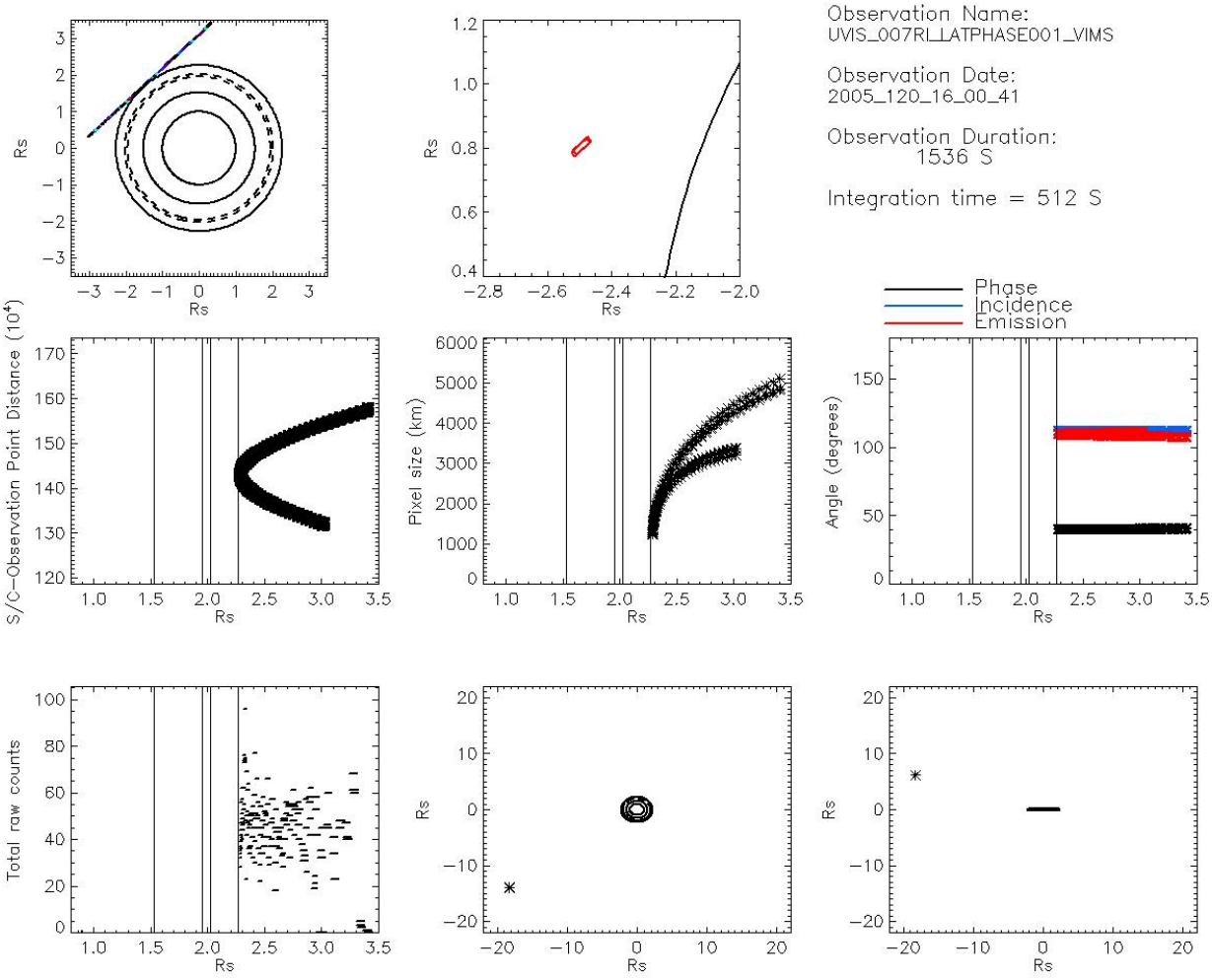


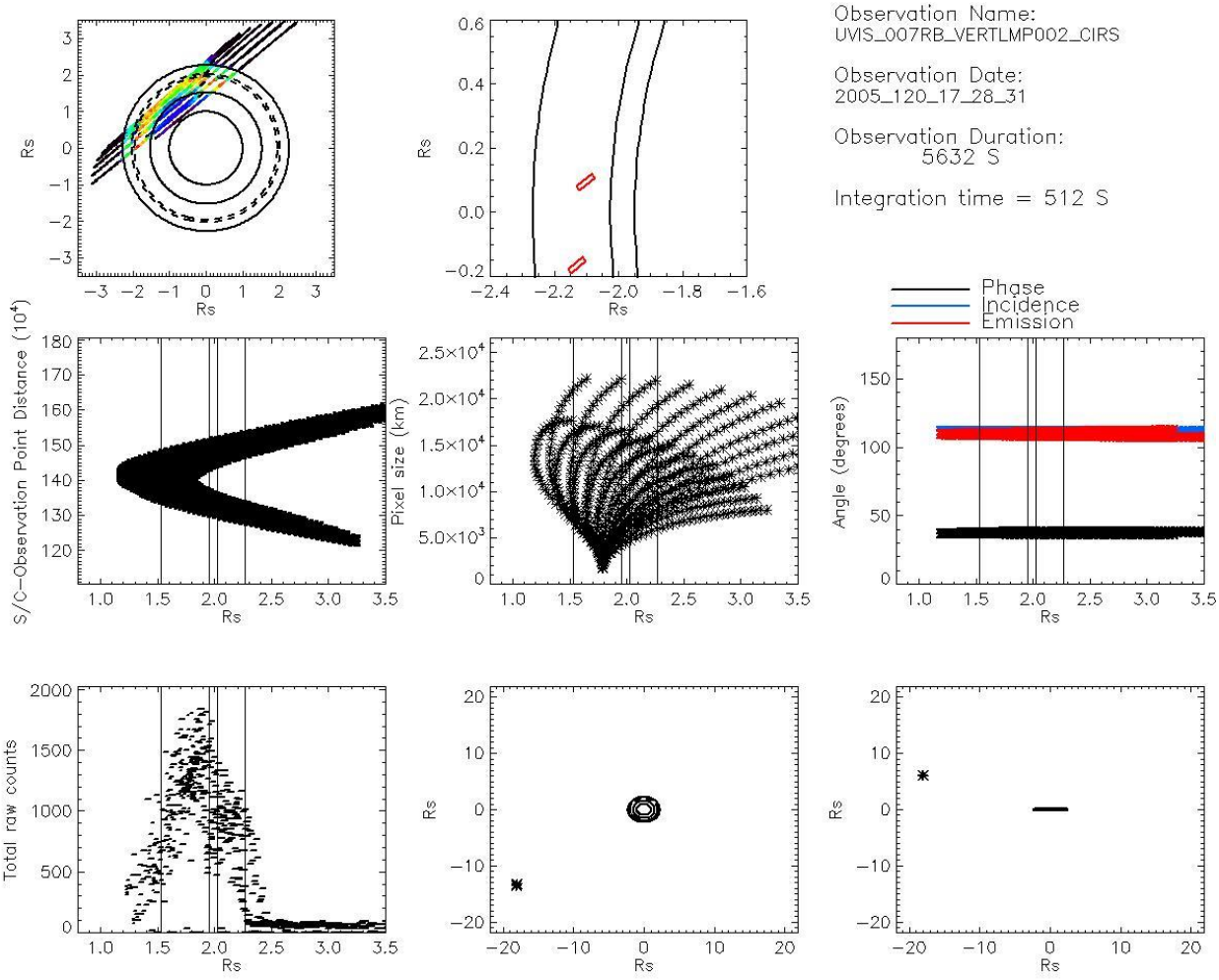


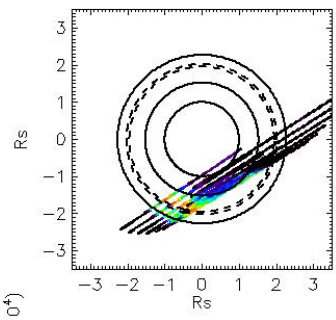


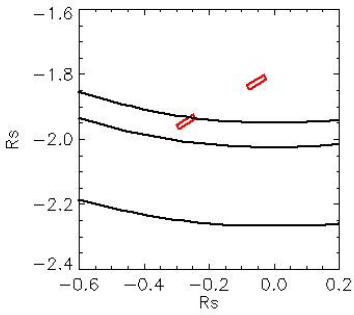





Observation Name:
UVIS_007RI_LATPHASE001_VIMS
Observation Date:
2005_120_16_00_41
Observation Duration:
1536 S
Integration time = 512 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts


Observation Name:
UVIS_007RB_VERTLMP002_CIRS
Observation Date:
2005_120_17_28_31
Observation Duration:
5632 S
Integration time = 512 S
Phase
Incidence
Emission
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs



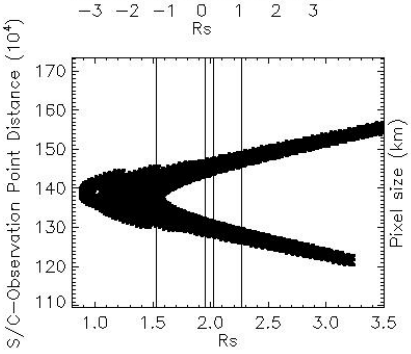


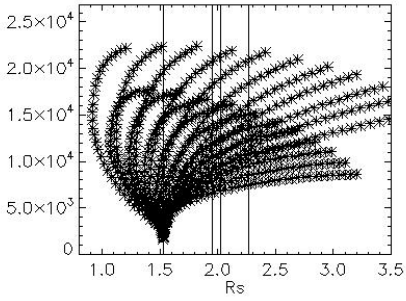
Observation Name:
UVIS_007RB_VERTLMP002_CIRS

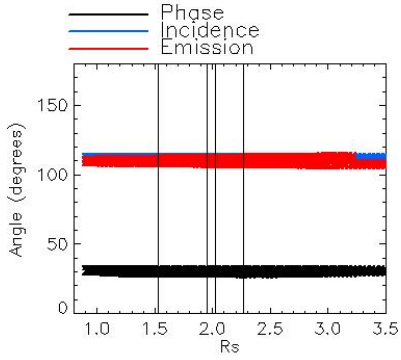
Observation Date:
2005_120_19_13_31

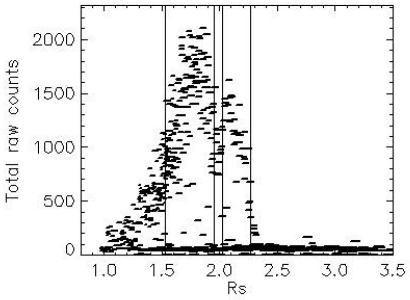
Observation Duration:
5632 S

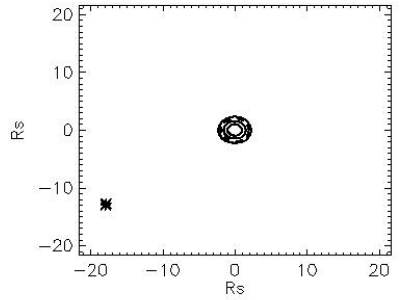
Integration time = 512 S

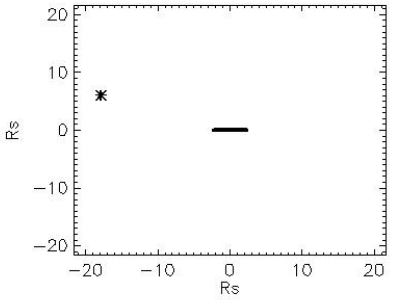


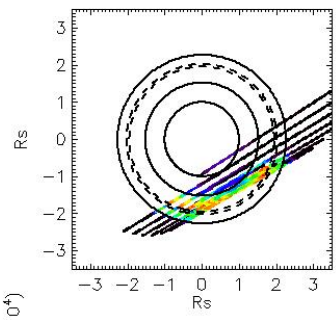


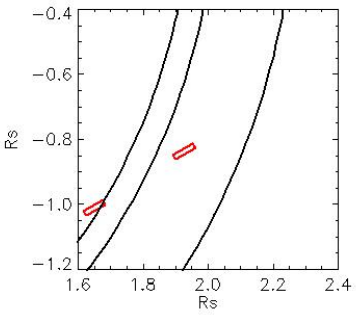










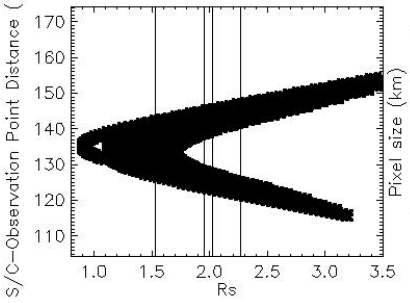


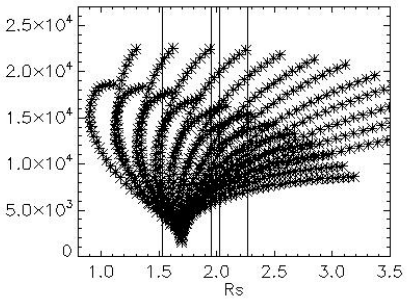
Observation Name:
UVIS_007RB_VERTLMP002_CIRS

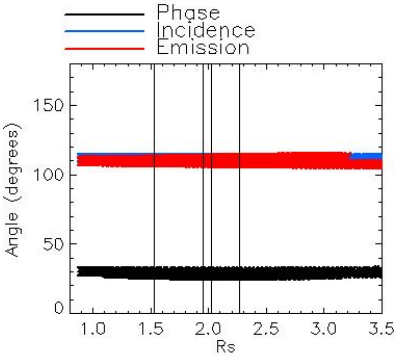
Observation Date:
2005_120_21_39_31

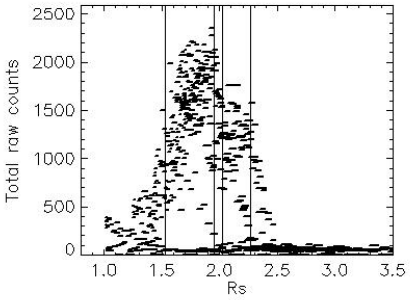
Observation Duration:
6144 S

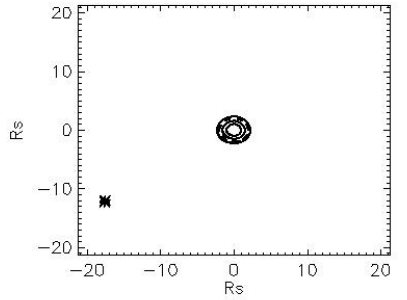
Integration time = 512 S

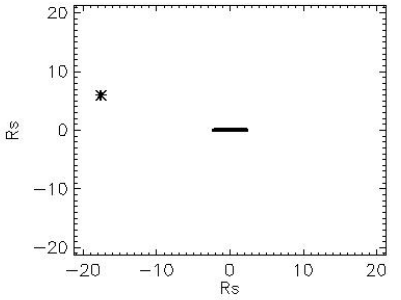


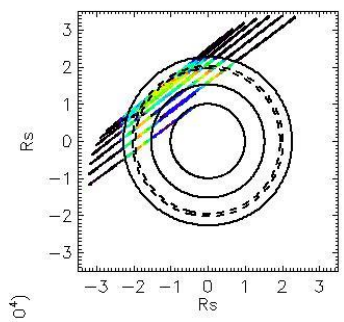


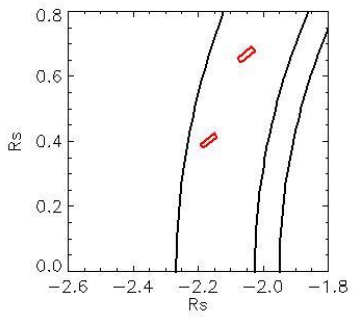










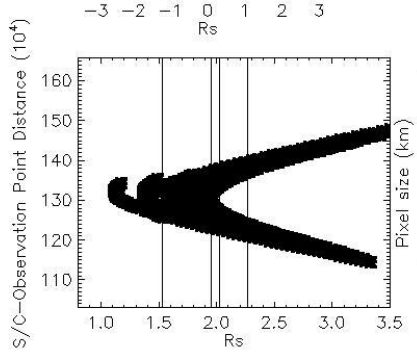


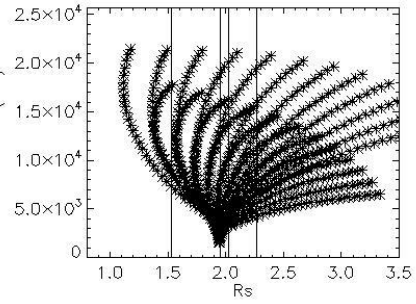
Observation Name:
UVIS_007RB_VERTLMP002_CIRS

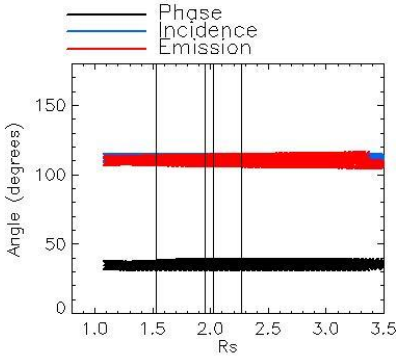
Observation Date:
2005_120_23_29_31

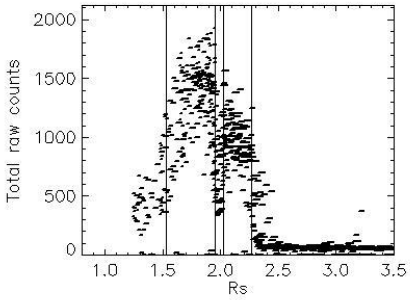
Observation Duration:
6144 S

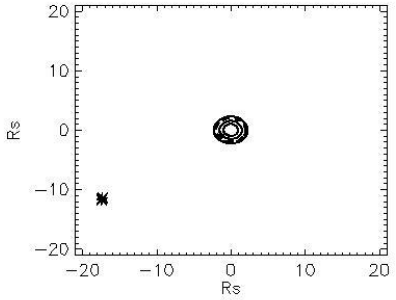
Integration time = 512 S

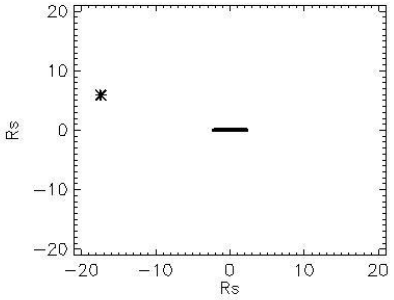


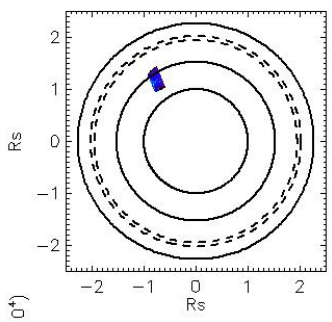


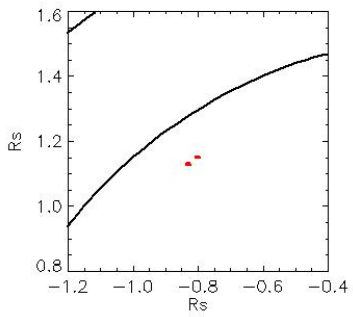










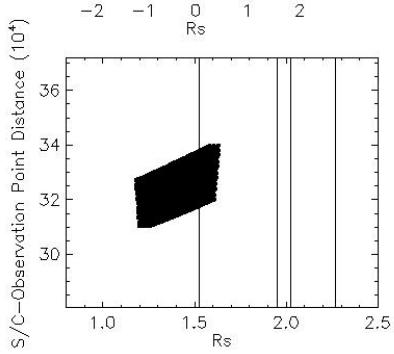


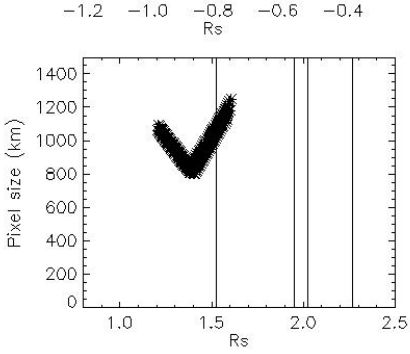
Observation Name:
UVIS_007RI_HIPHASE004_VIMS

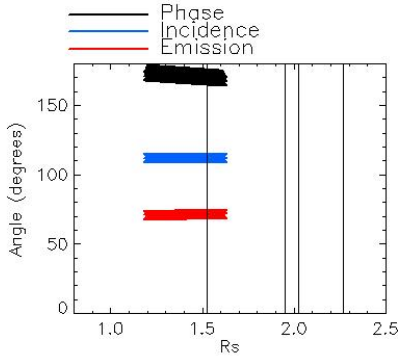
Observation Date:
2005_123_05_40_01

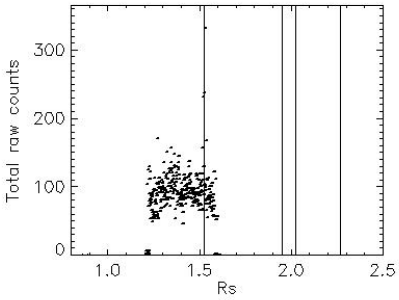
Observation Duration:
2560 S

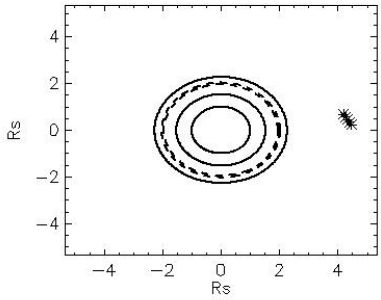
Integration time = 512 S

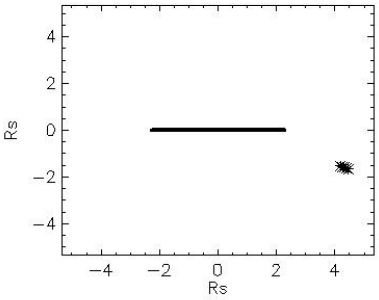


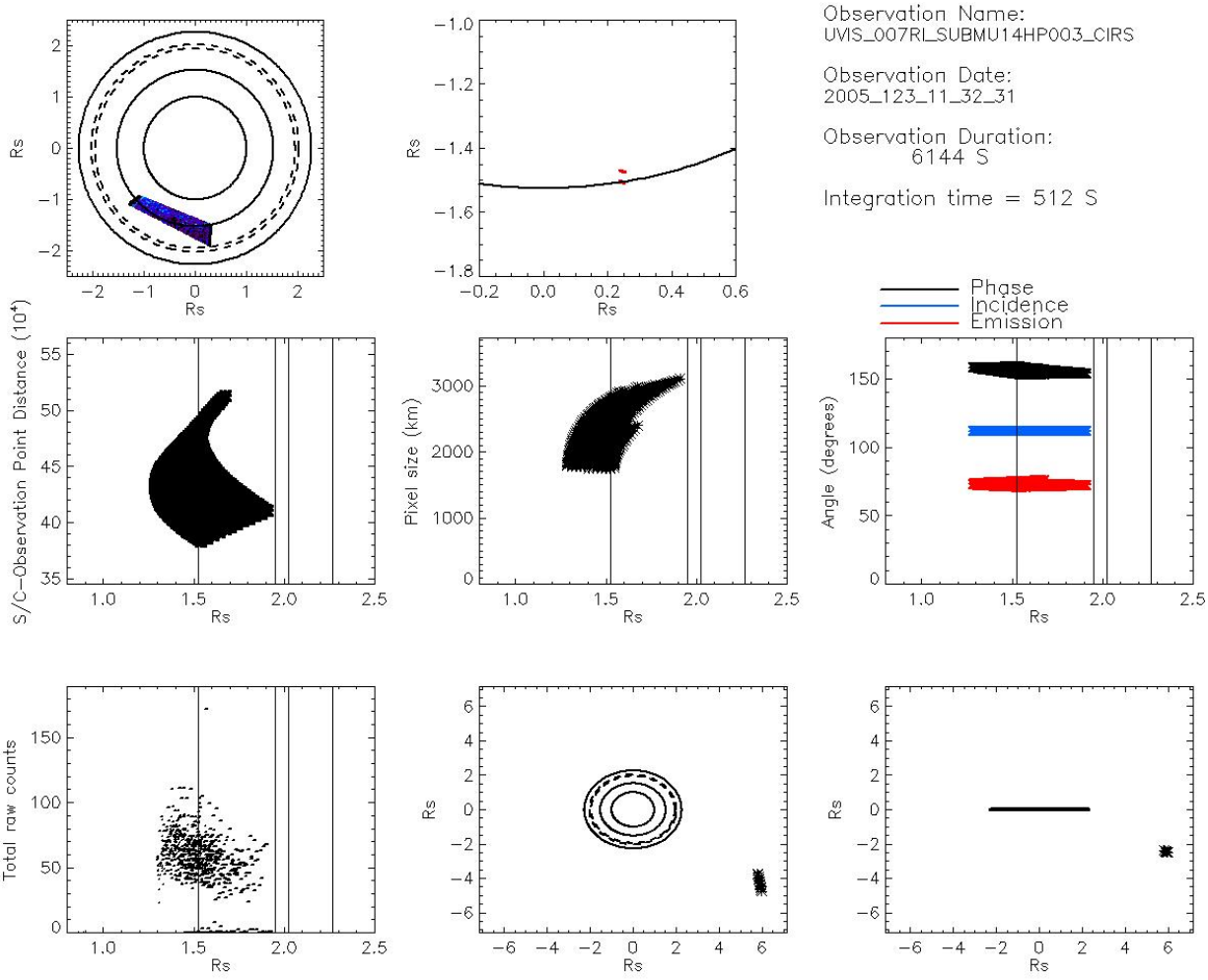


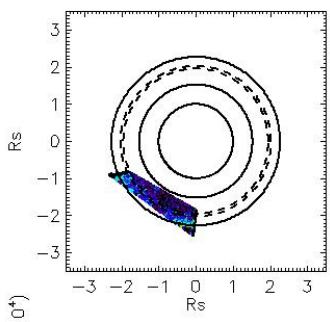


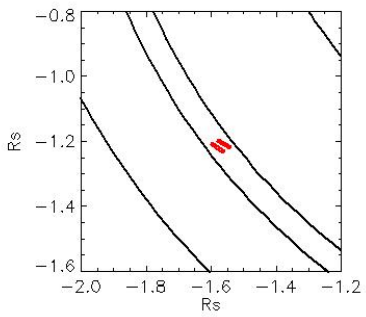







Observation Name:
UVIS_007RI_SUBMU14HP003_CIRS
Observation Date:
2005_123_11_32_31
Observation Duration:
6144 S
Integration time = 512 S
Phase
Incidence
Emission
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs



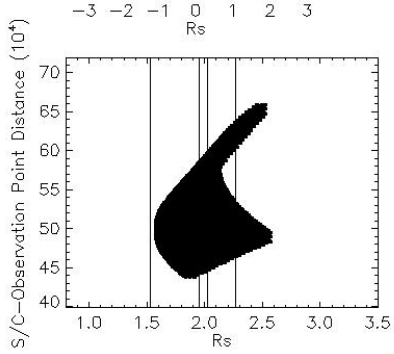


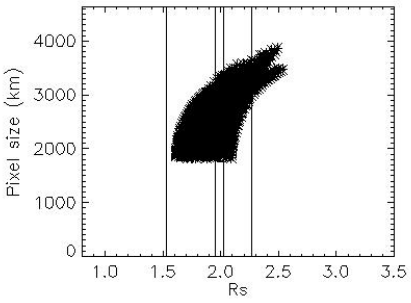
Observation Name:
UVIS_007RI_SUBMU14HP003_CIRS

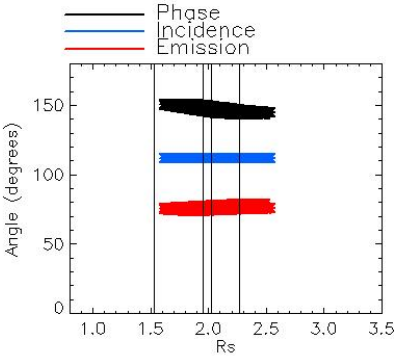
Observation Date:
2005_123_13_55_31

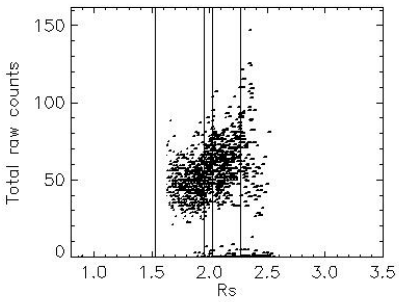
Observation Duration:
10752 S

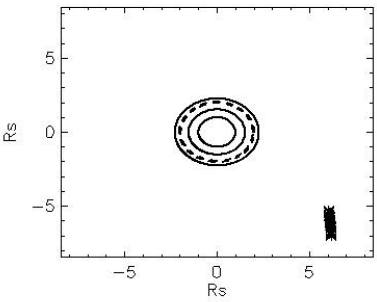
Integration time = 512 S

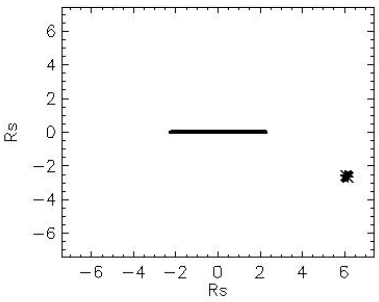


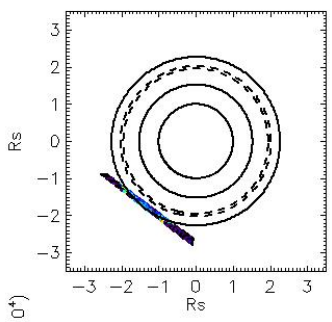


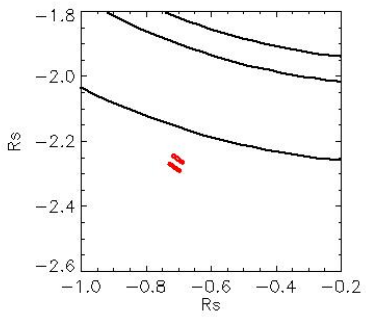










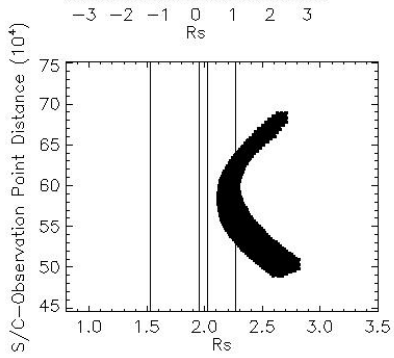


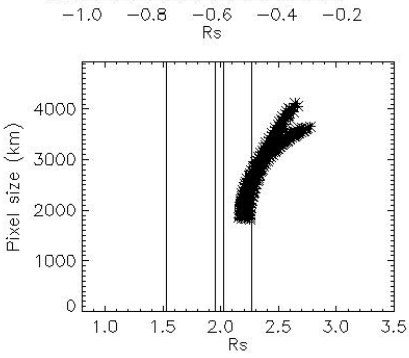
Observation Name:
UVIS_007RI_SUBMU14HP003_CIRS

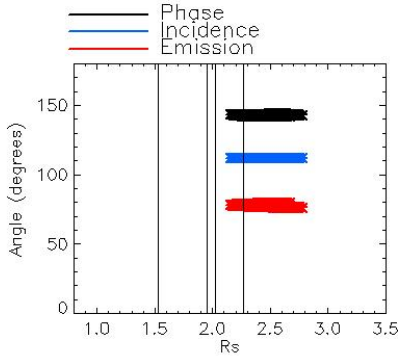
Observation Date:
2005_123_16_54_42

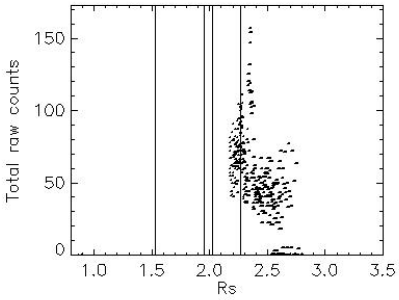
Observation Duration:
3584 S

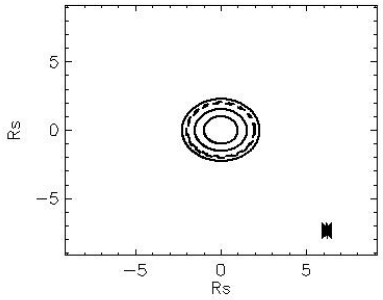
Integration time = 512 S

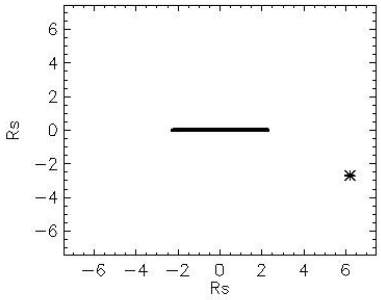


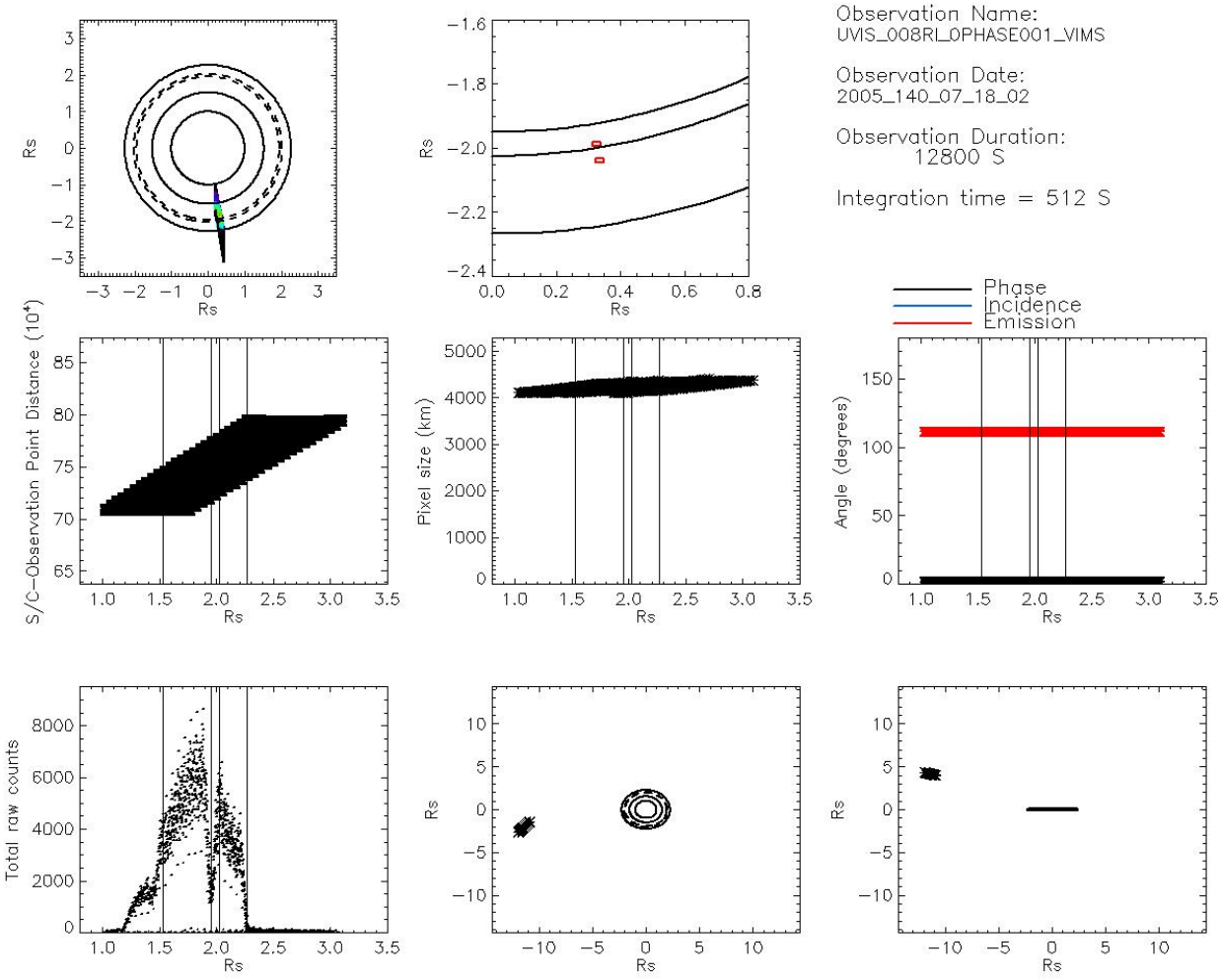


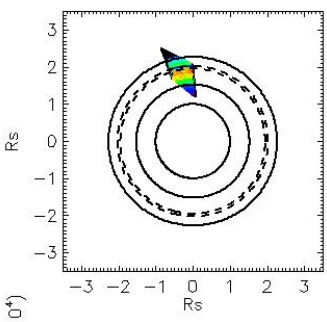


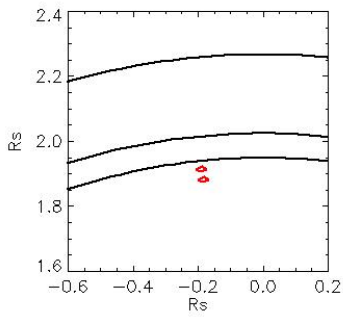







Observation Name:
UVIS_008RI_0PHASE001_VIMS
Observation Date:
2005_140_07_18_02
Observation Duration:
12800 S
Integration time = 512 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts



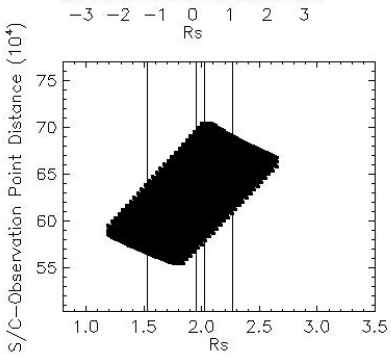


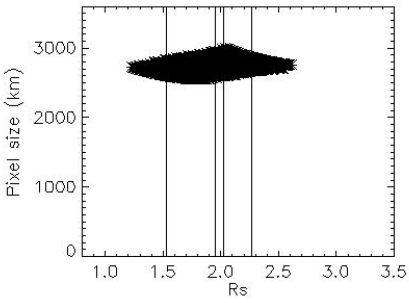
Observation Name:
UVIS_008RI_SUBML20LP002_CIRS

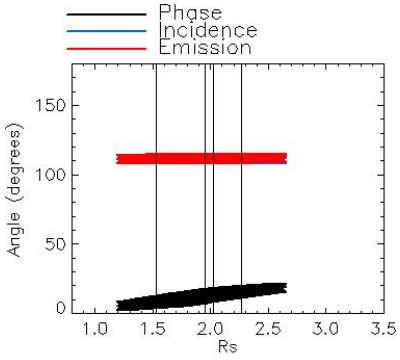
Observation Date:
2005_140_11_38_30

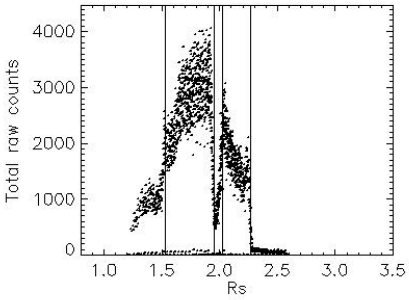
Observation Duration:
13312 S

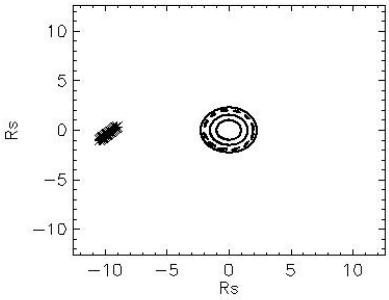
Integration time = 512 S

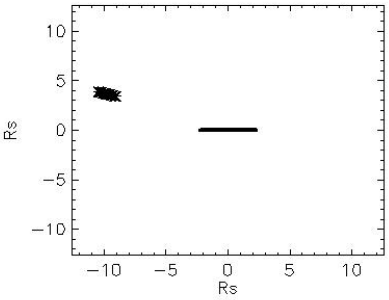


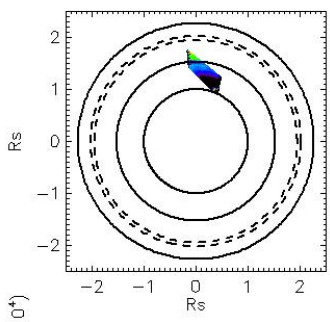


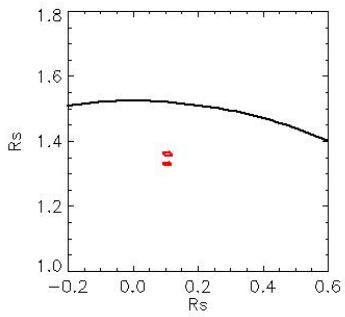










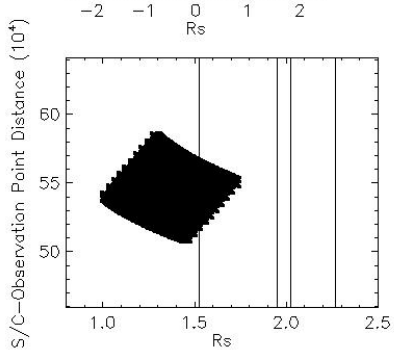


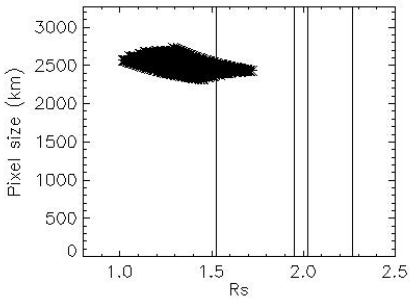
Observation Name:
UVIS_008RI_SUBML20LP002_CIRS

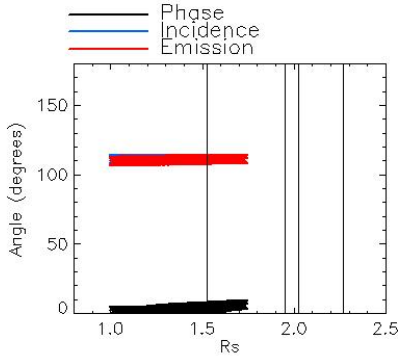
Observation Date:
2005_140_15_53_30

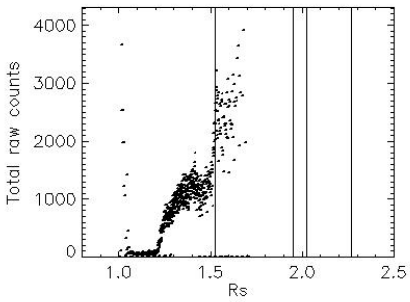
Observation Duration:
6144 S

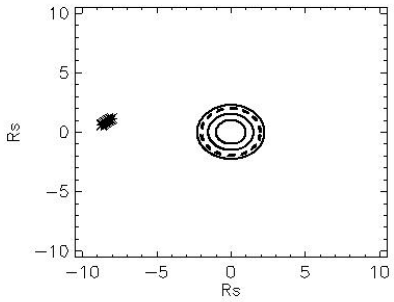
Integration time = 512 S

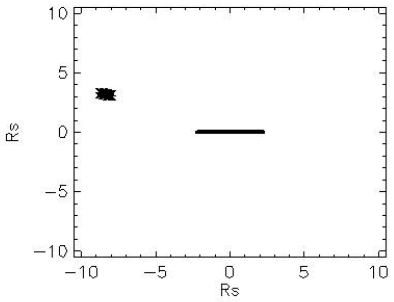


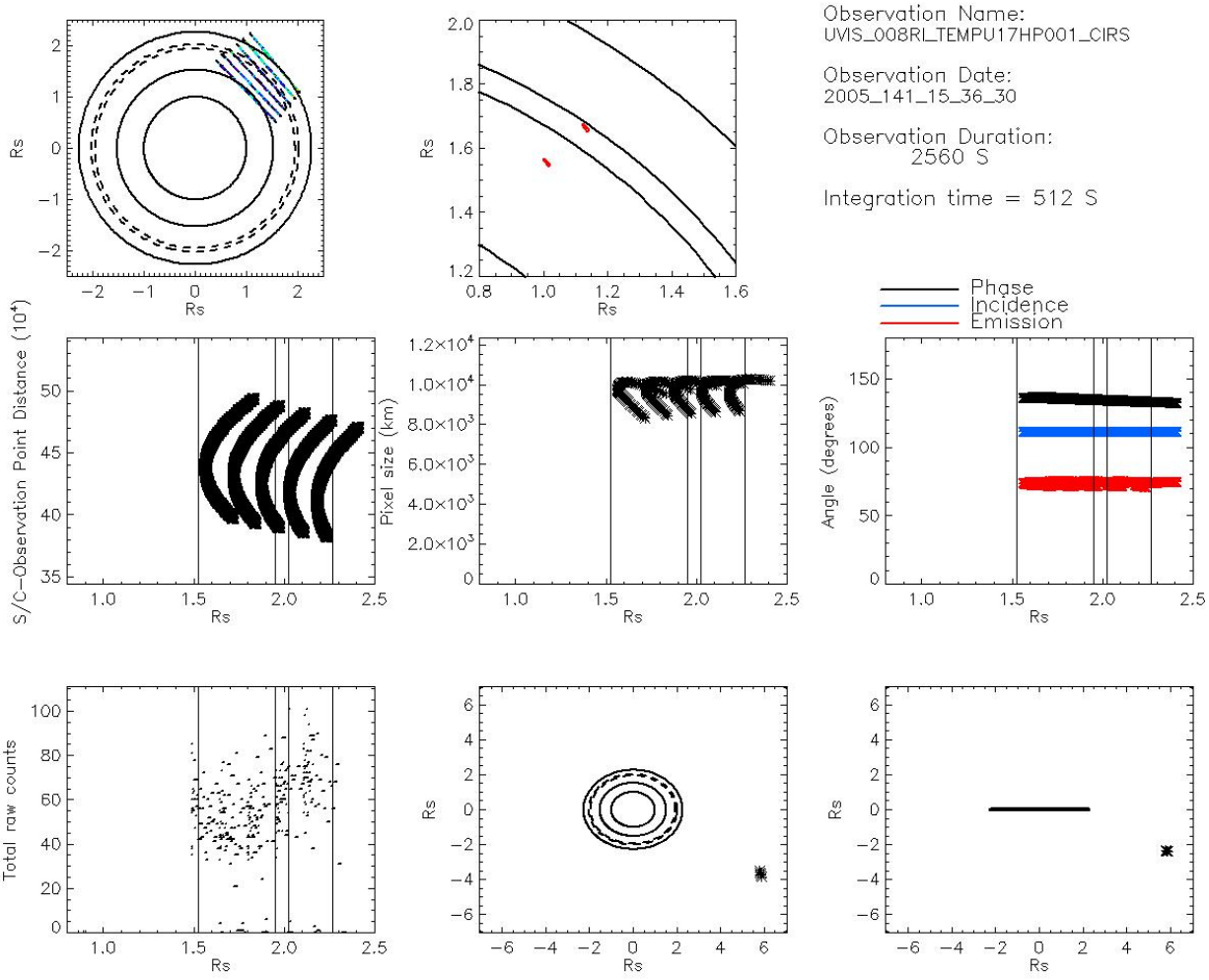










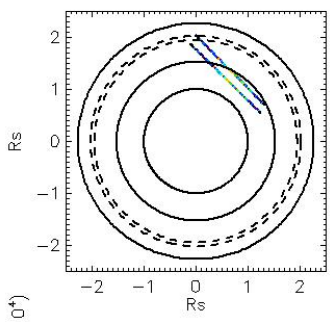

Observation Name:
UVIS_008RI_TEMPU17HP001_CIRS
Observation Date:
2005_141_15_36_30
Observation Duration:
2560 S
Integration time = 512 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts

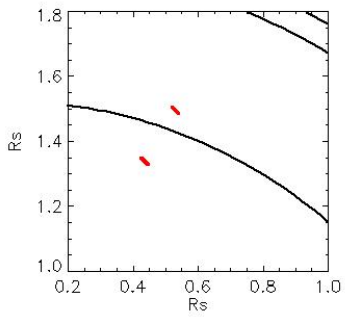
Observation Name:
UVIS_008RI_TEMPU17HP001_CIRS

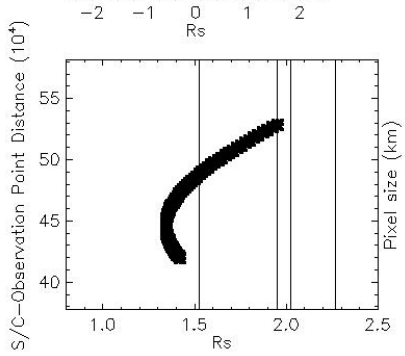
Observation Date:
2005_141_16_21_30

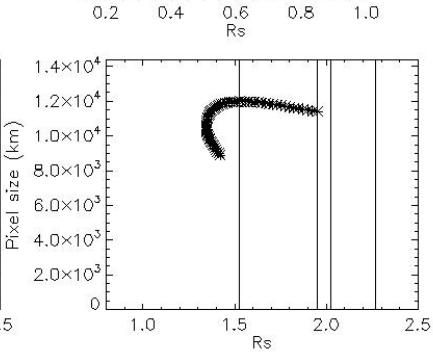
Observation Duration:
512 S

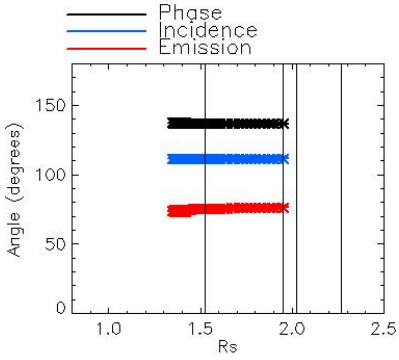
Integration time = 512 S

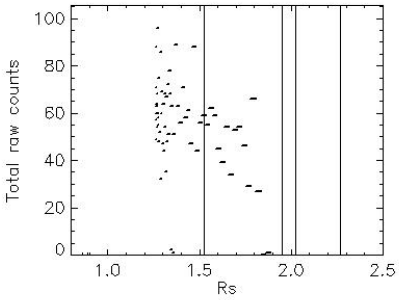


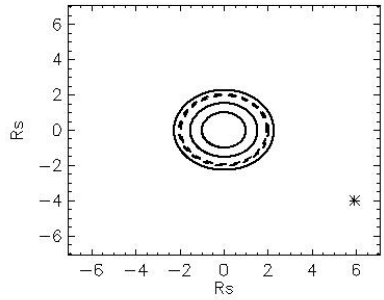


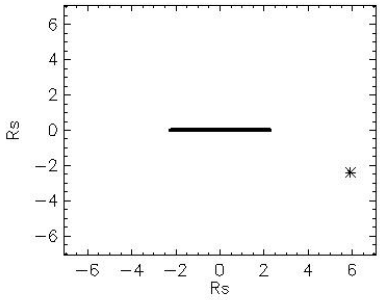


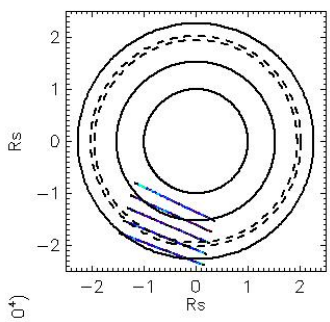


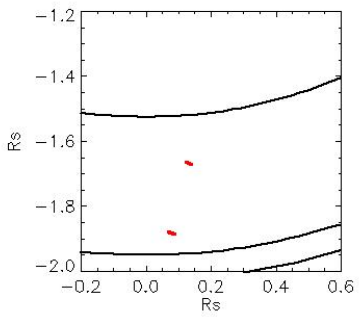










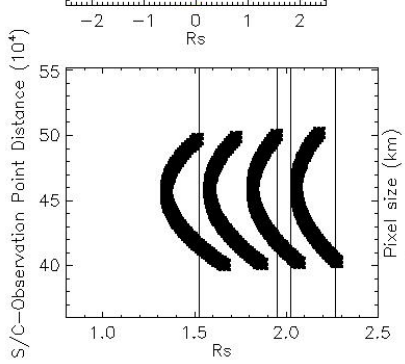


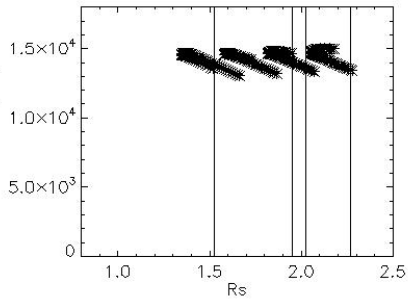
Observation Name:
UVIS_008RI_TEMPU17HP001_CIRS

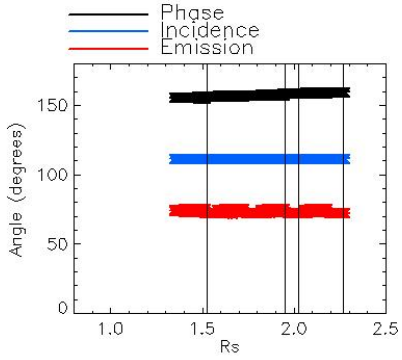
Observation Date:
2005_141_16_42_30

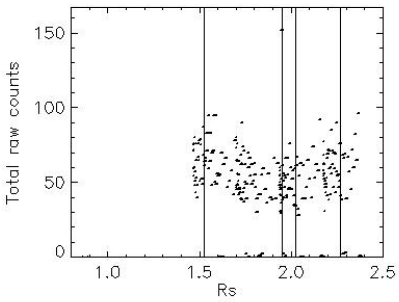
Observation Duration:
2048 S

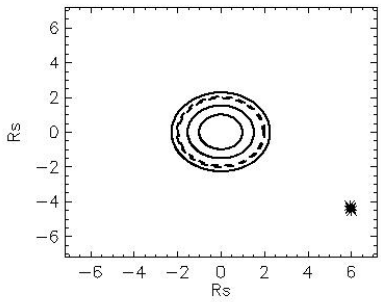
Integration time = 512 S

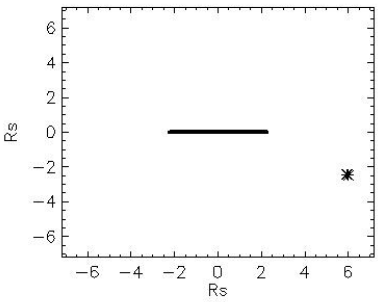










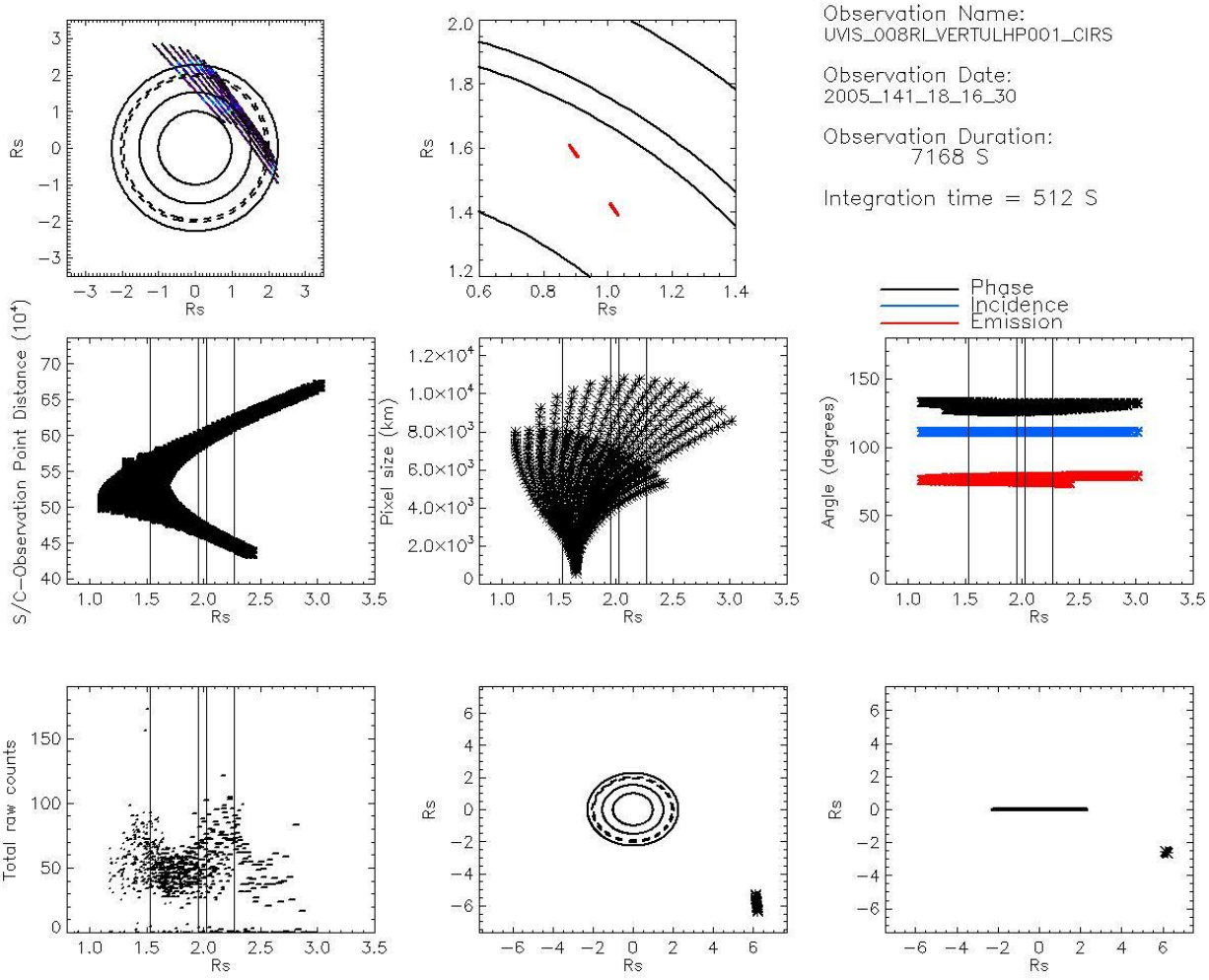


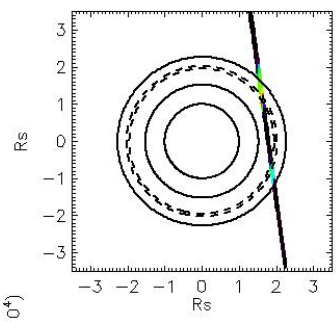
Observation Name:
UVIS_008RI_VERTULHP001_CIRS

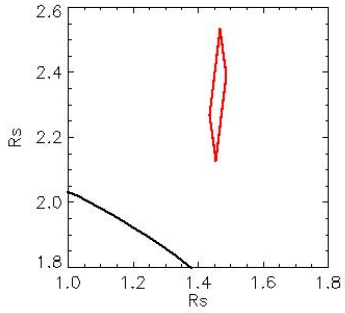
Observation Date:
2005_141_18_16_30

Observation Duration:
7168 S

Integration time = 512 S





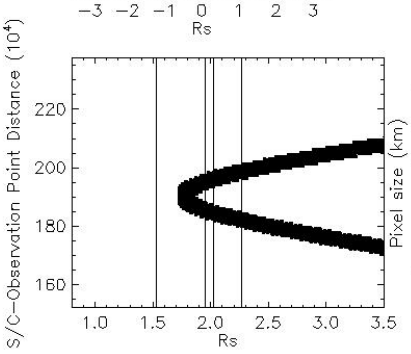


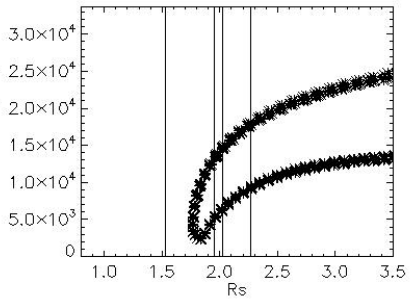
Observation Name:
UVIS_008RI_FMONITOR001_CIRS

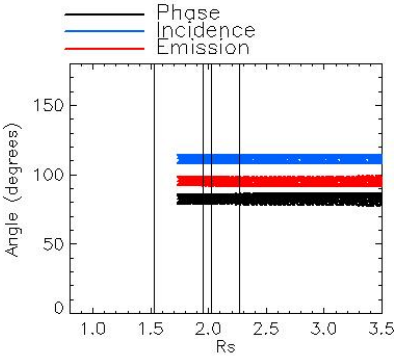
Observation Date:
2005_145_03_30_02

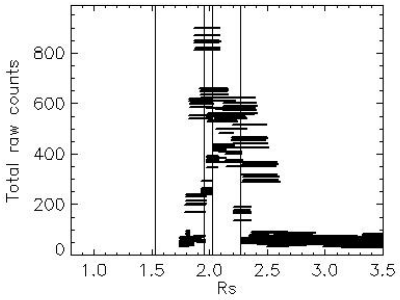
Observation Duration:
4800 S

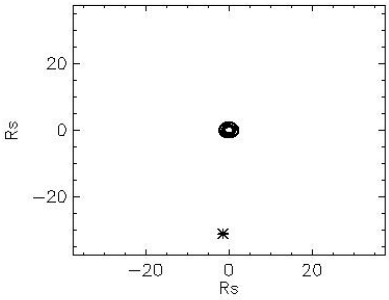
Integration time = 600 S

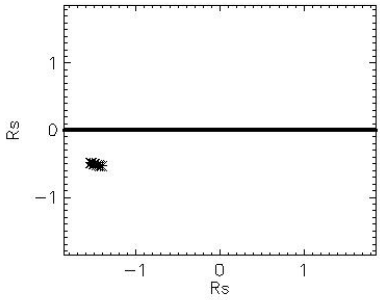


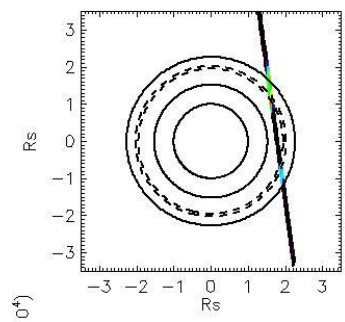


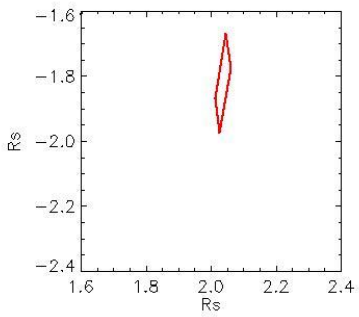










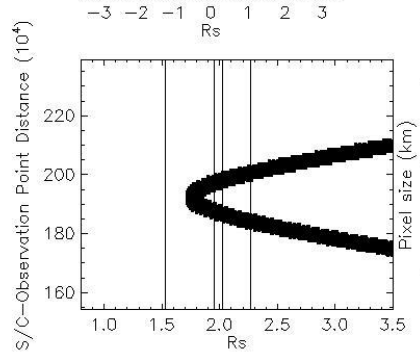


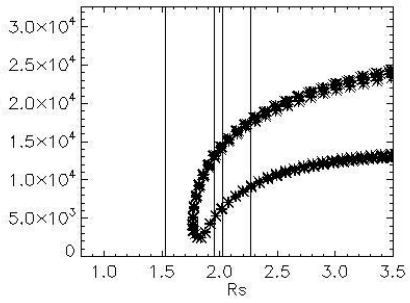
Observation Name:
UVIS_008RI_FMONITOR001_CIRS

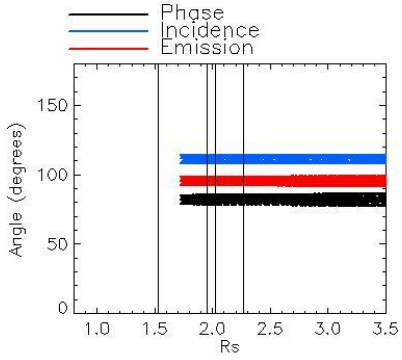
Observation Date:
2005_145_05_28_03

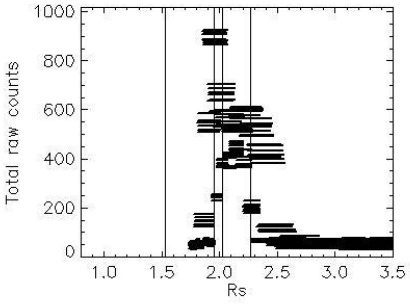
Observation Duration:
4800 S

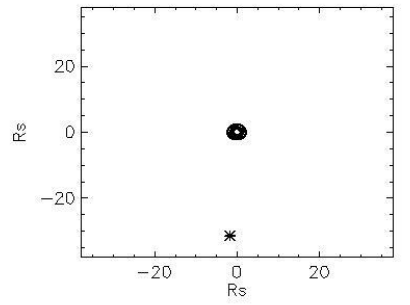
Integration time = 600 S

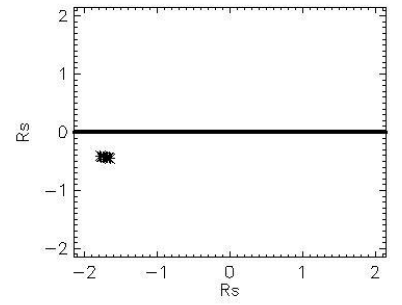


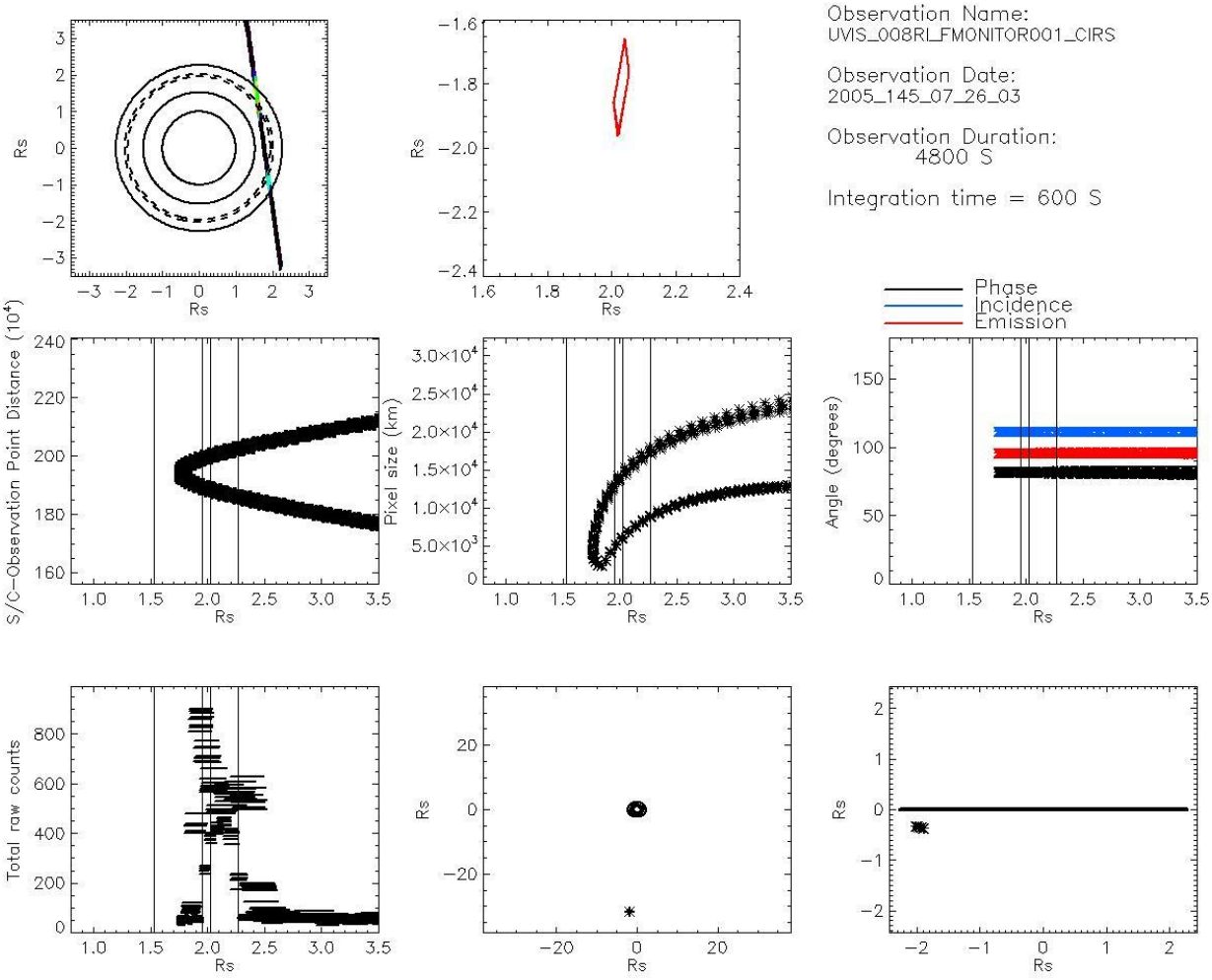


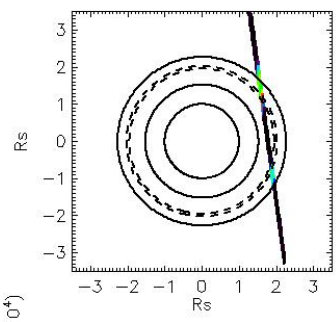


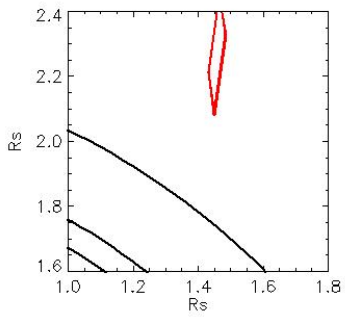







Observation Name:
UVIS_008RI_FMONITOR001_CIRS
Observation Date:
2005_145_07_26_03
Observation Duration:
4800 S
Integration time = 600 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts



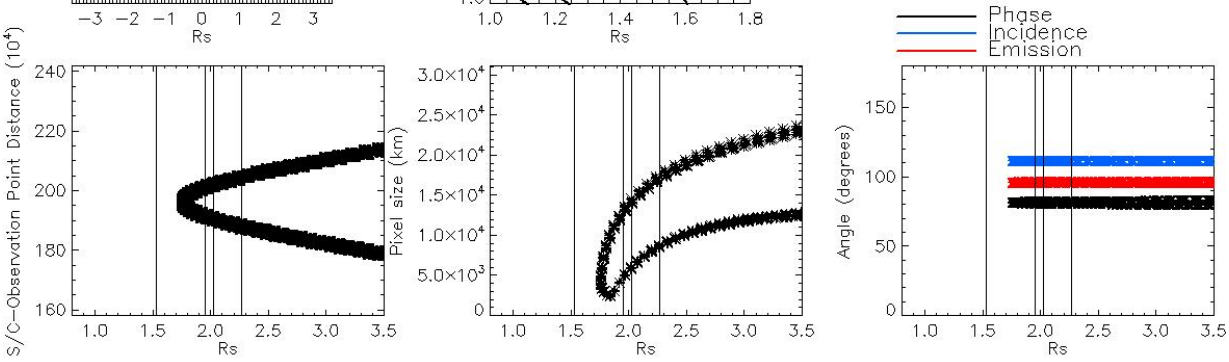


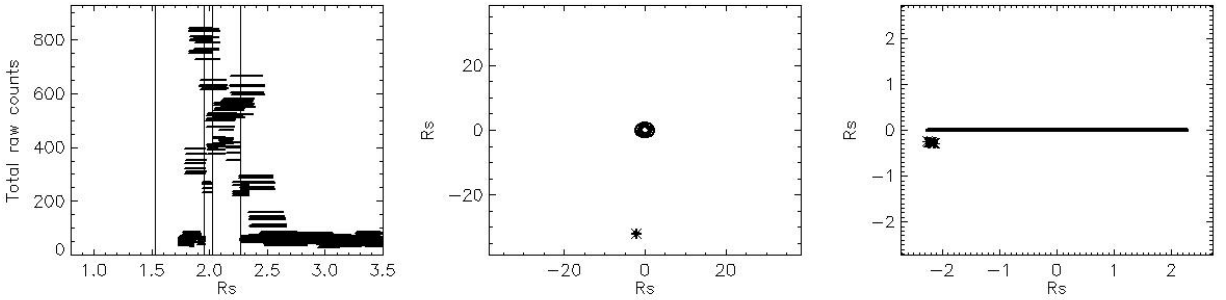
Observation Name:
UVIS_008RI_FMONITOR001_CIRS

Observation Date:
2005_145_09_24_04

Observation Duration:
4800 S

Integration time = 600 S



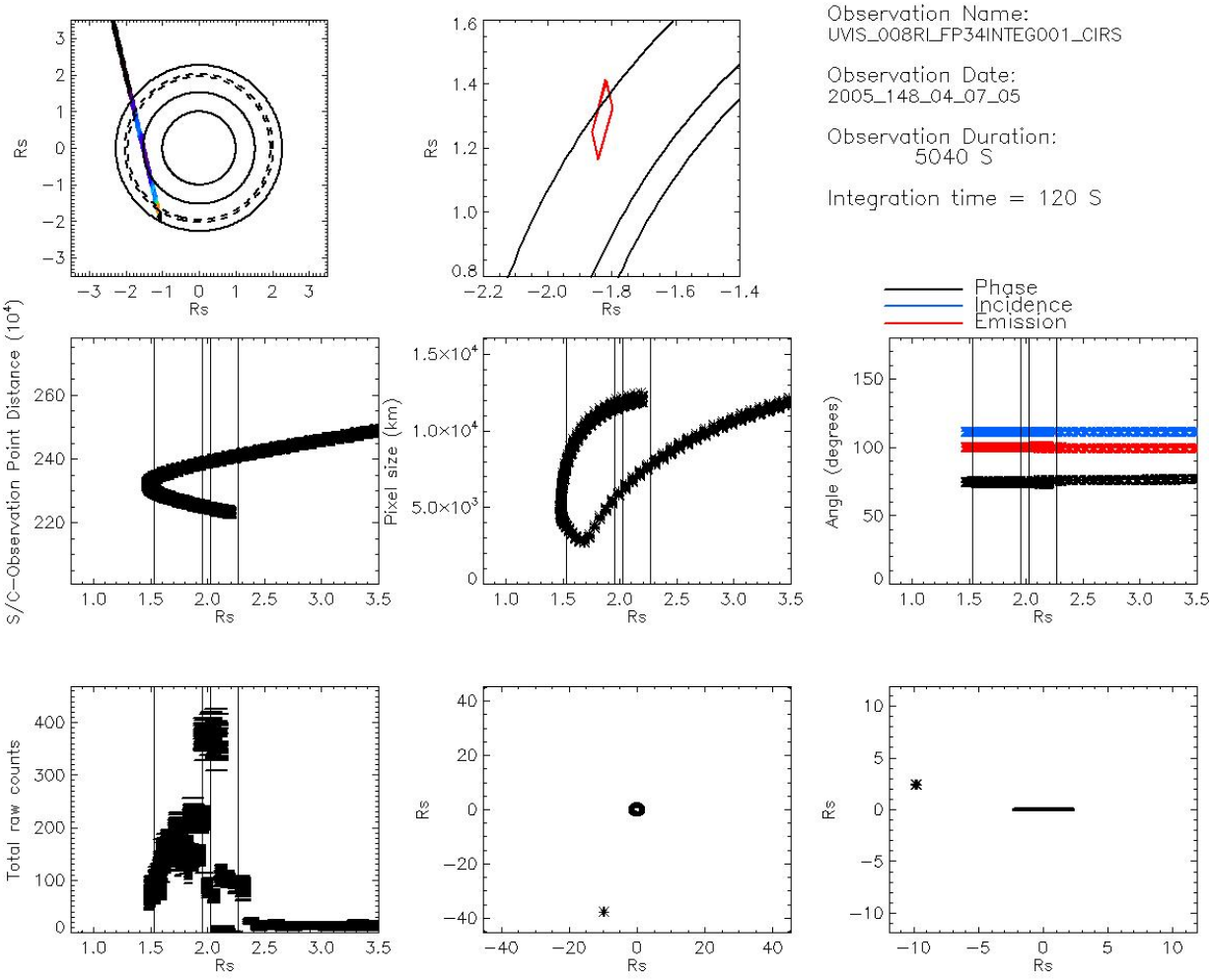


Observation Name:
UVIS_008RI_FP34INTEG001_CIRS

Observation Date:
2005_148_04_07_05

Observation Duration:
5040 S

Integration time = 120 S

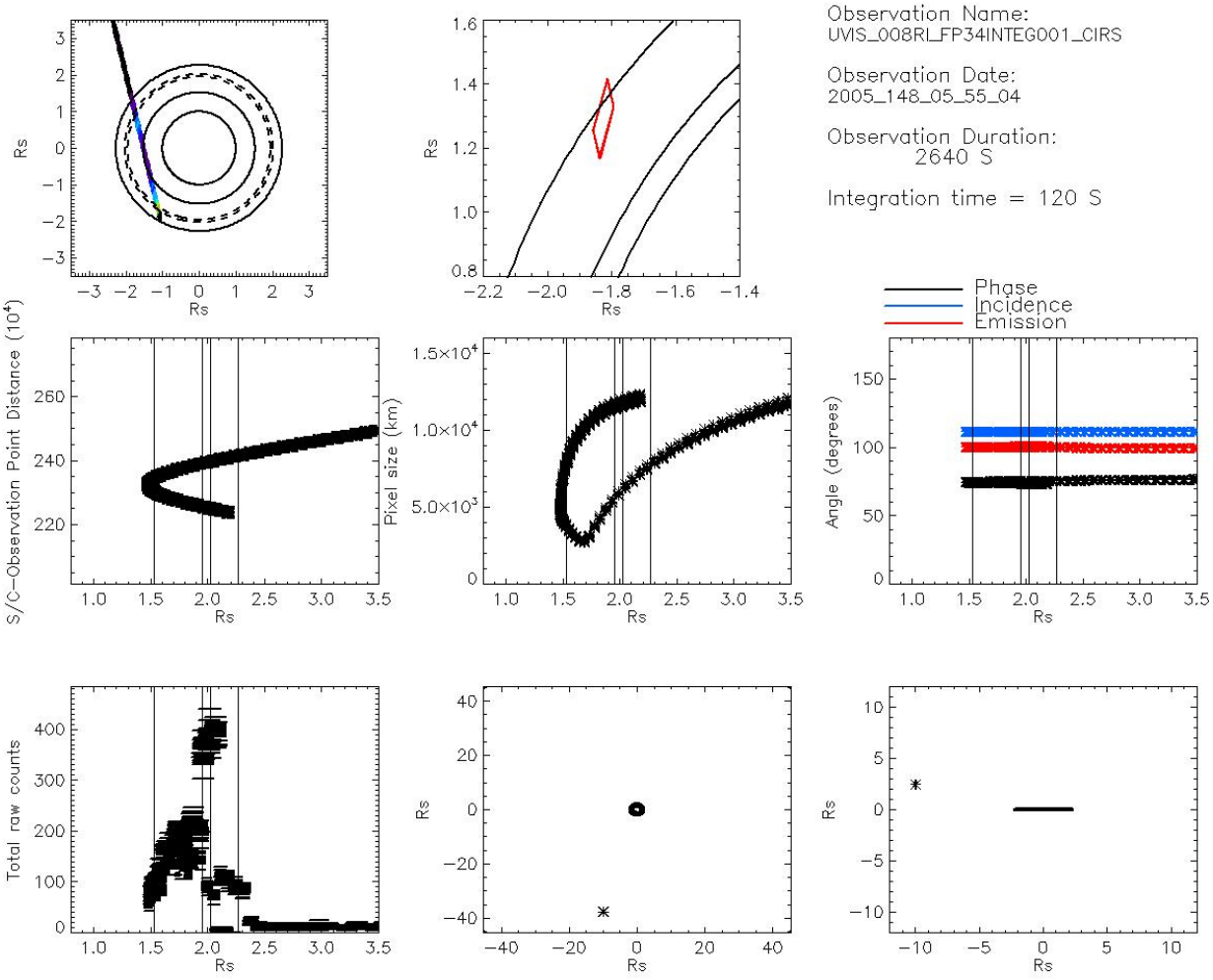


Observation Name:
UVIS_008RI_FP34INTEG001_CIRS

Observation Date:
2005_148_05_55_04

Observation Duration:
2640 S

Integration time = 120 S

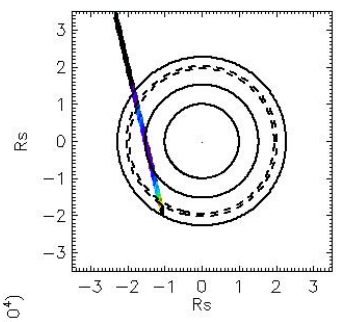


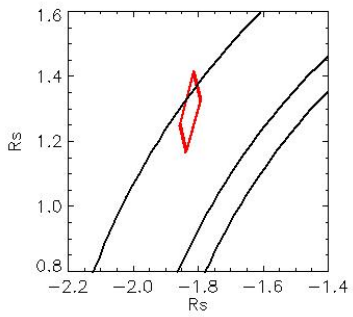
Observation Name:
UVIS_008RI_FP34INTEG001_CIRS

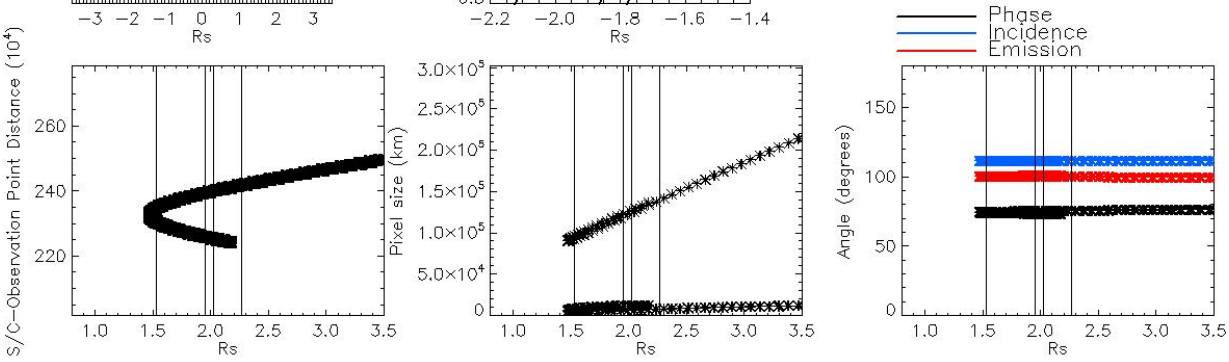
Observation Date:
2005_148_06_39_03

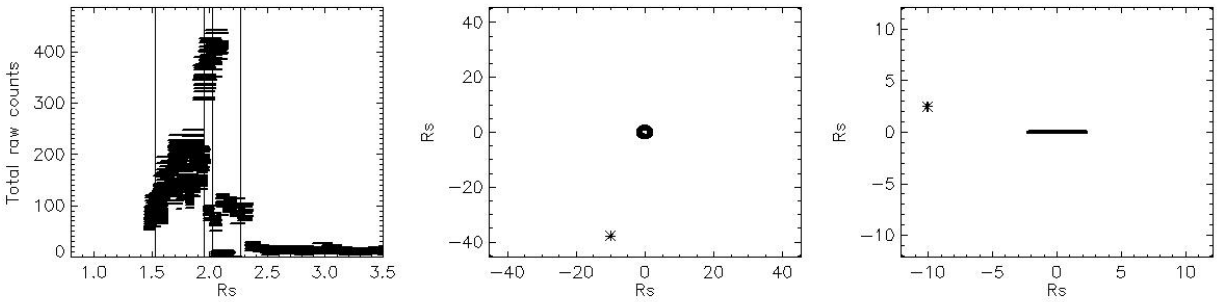
Observation Duration:
2400 S

Integration time = 120 S









Observation Name:
UVIS_008RI_FP34INTEG001_CIRS

Observation Date:
2005_148_07_43_04

Observation Duration:
5040 S

Integration time = 120 S