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.

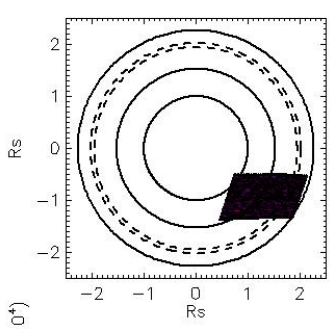
Middle center: Maximum projected smeared pixel size for all data records plotted against the radial location of the projected pixel at the middle of the integration period.

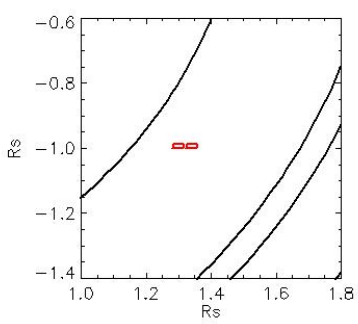
Middle right: Phase, incidence, and emission angles for each pixel for all data records at the middle of the integration period.

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.



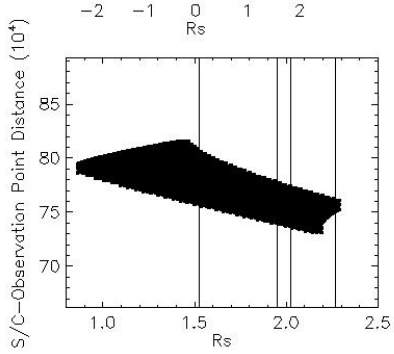


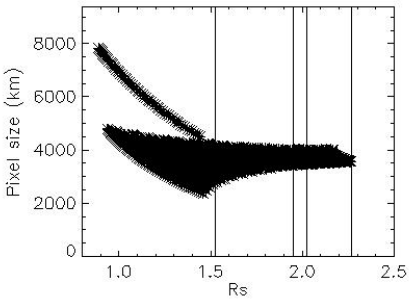
Observation Name:
UVIS_112RI_EQLBS001_CIRS

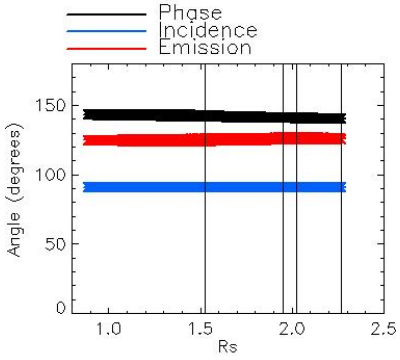
Observation Date:
2009_159_08_01_33

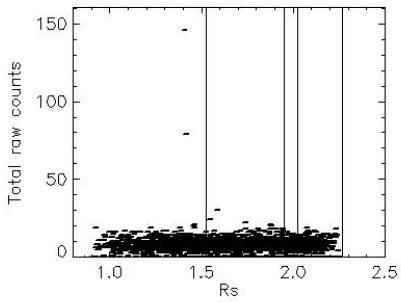
Observation Duration:
3300 S

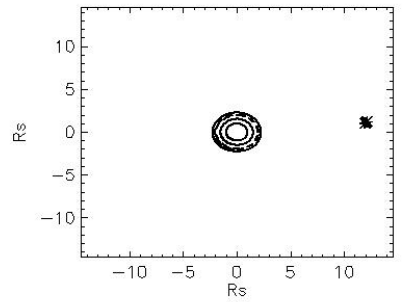
Integration time = 100 S

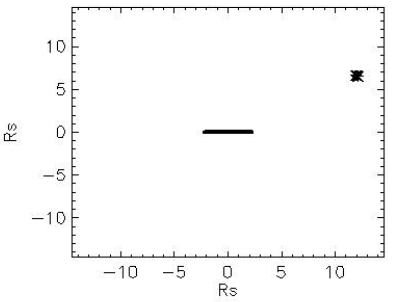


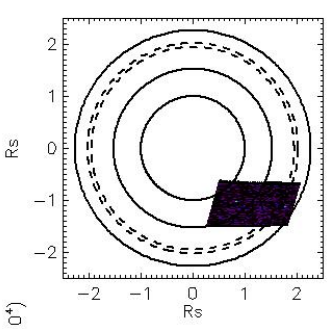


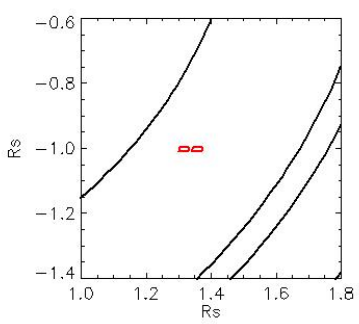










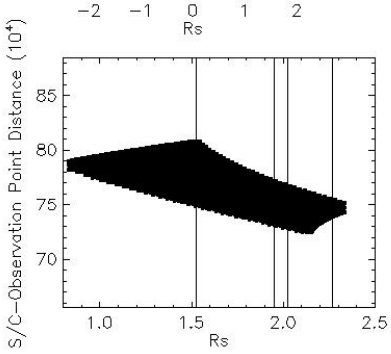


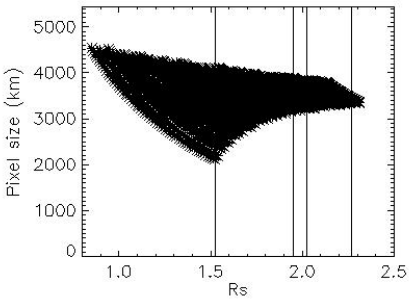
Observation Name:
UVIS_112RI_EQLBS001_CIRS

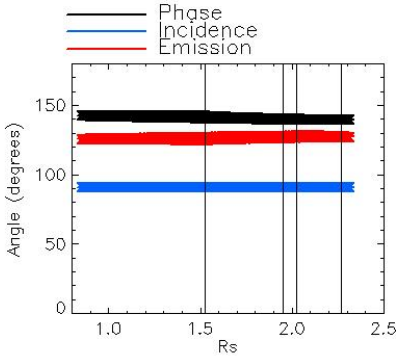
Observation Date:
2009_159_09_02_33

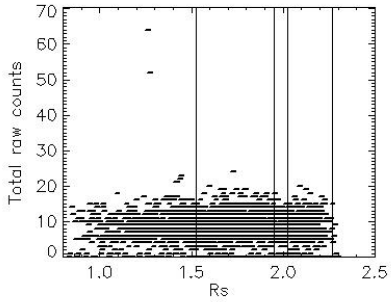
Observation Duration:
3400 S

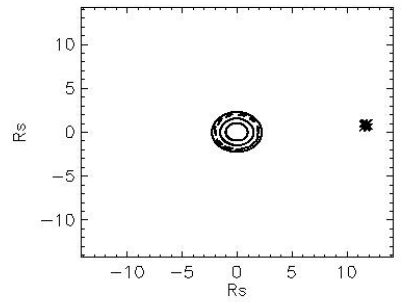
Integration time = 100 S

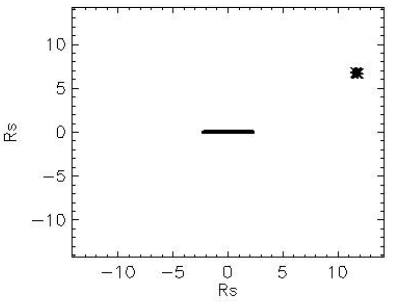


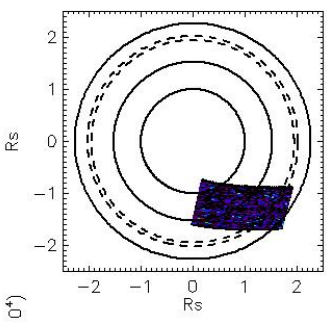


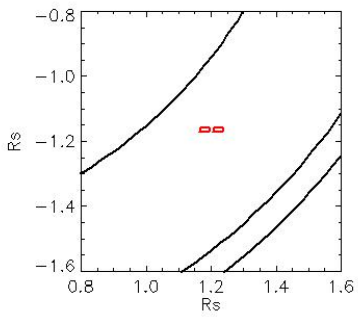










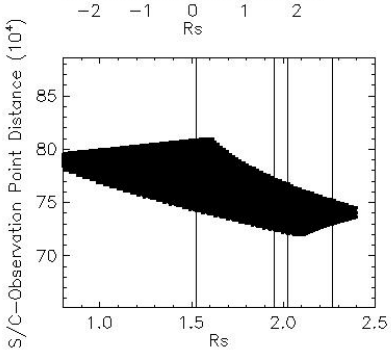


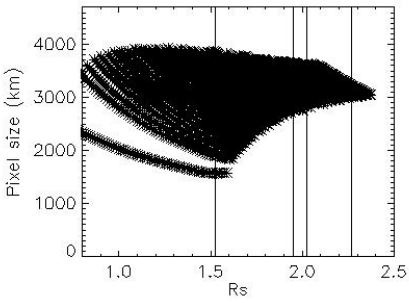
Observation Name:
UVIS_112RI_EQLBS001_CIRS

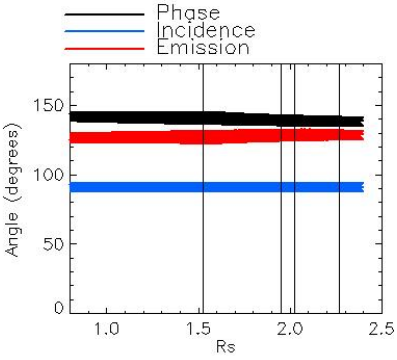
Observation Date:
2009_159_10_06_33

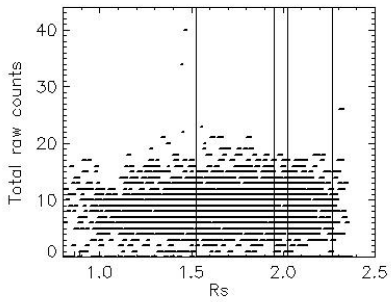
Observation Duration:
3900 S

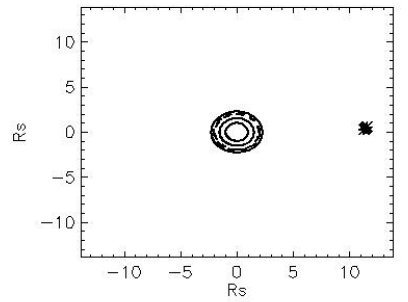
Integration time = 100 S

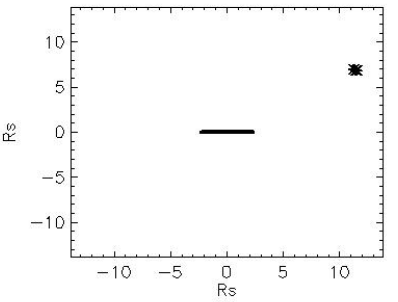


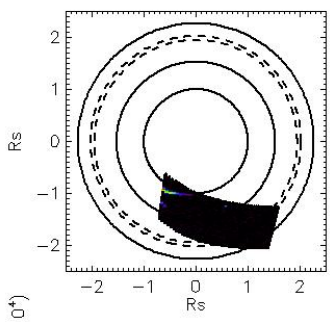


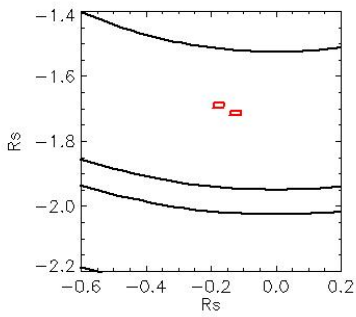










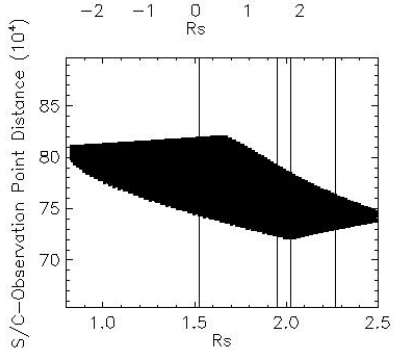


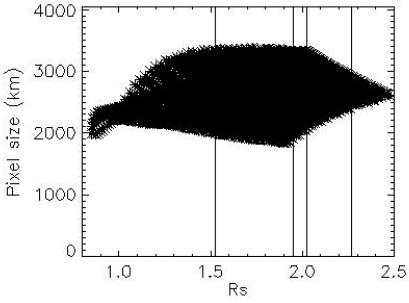
Observation Name:
UVIS_112RI_EQLBS001_CIRS

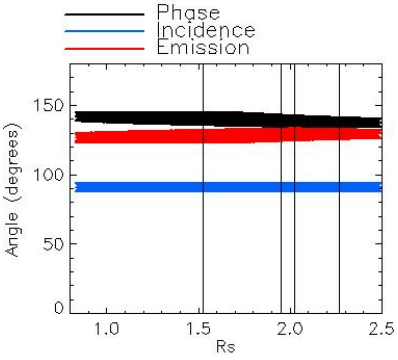
Observation Date:
2009_159_11_17_33

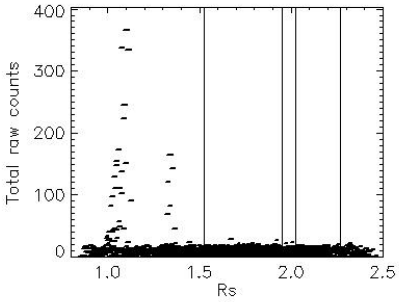
Observation Duration:
4600 S

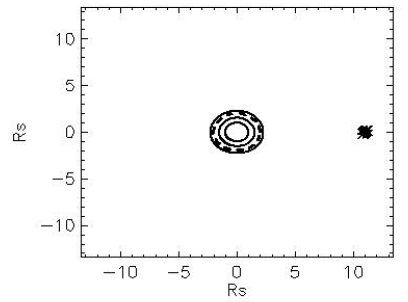
Integration time = 100 S

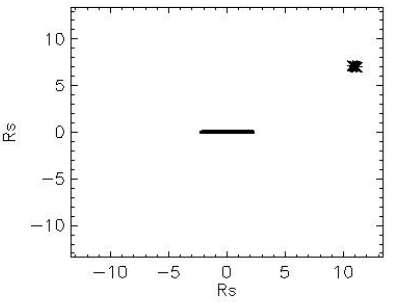


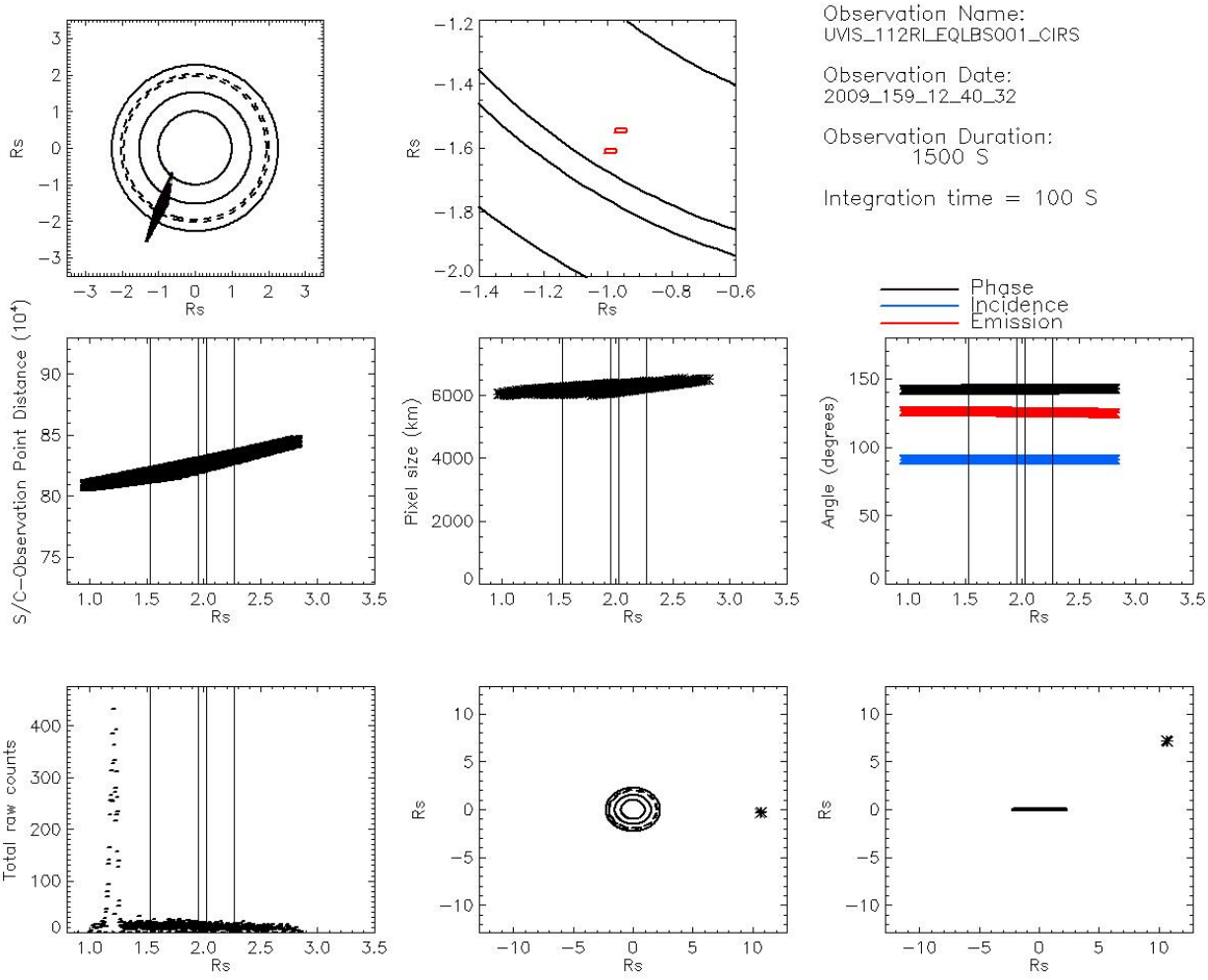


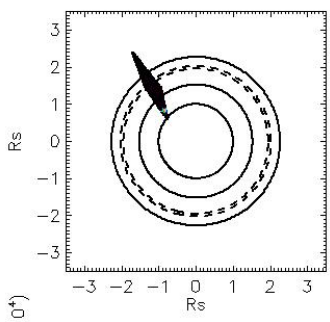


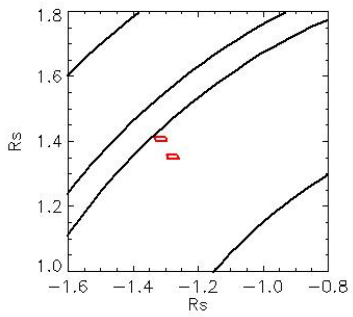







Observation Name:
UVIS_112RI_EQLBS001_CIRS
Observation Date:
2009_159_12_40_32
Observation Duration:
1500 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts



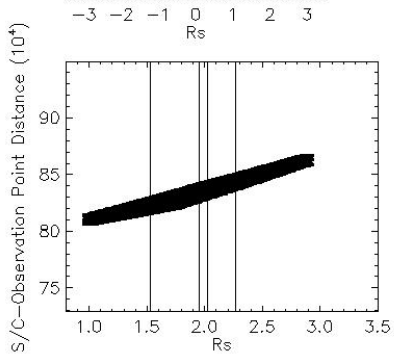


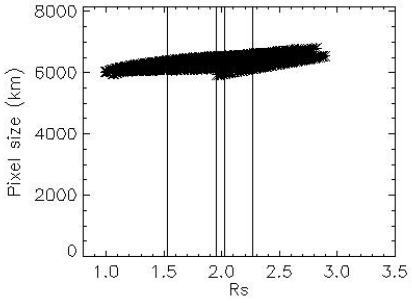
Observation Name:
UVIS_112RI_EQLBS001_CIRS

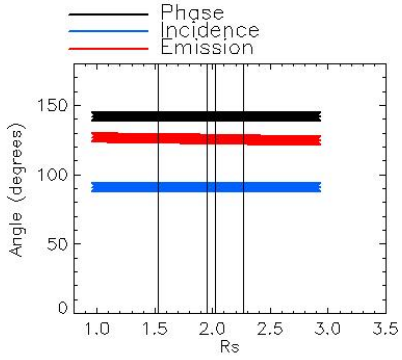
Observation Date:
2009_159_13_13_32

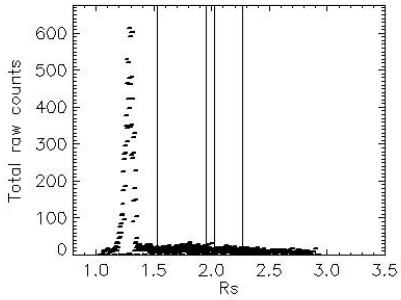
Observation Duration:
1600 S

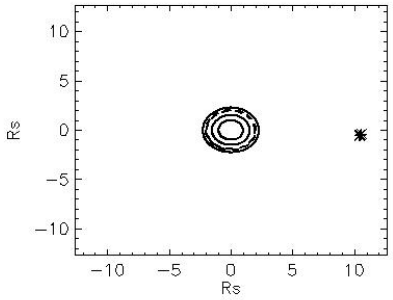
Integration time = 100 S

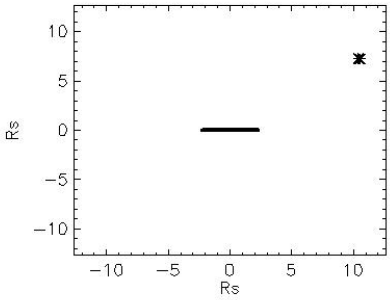


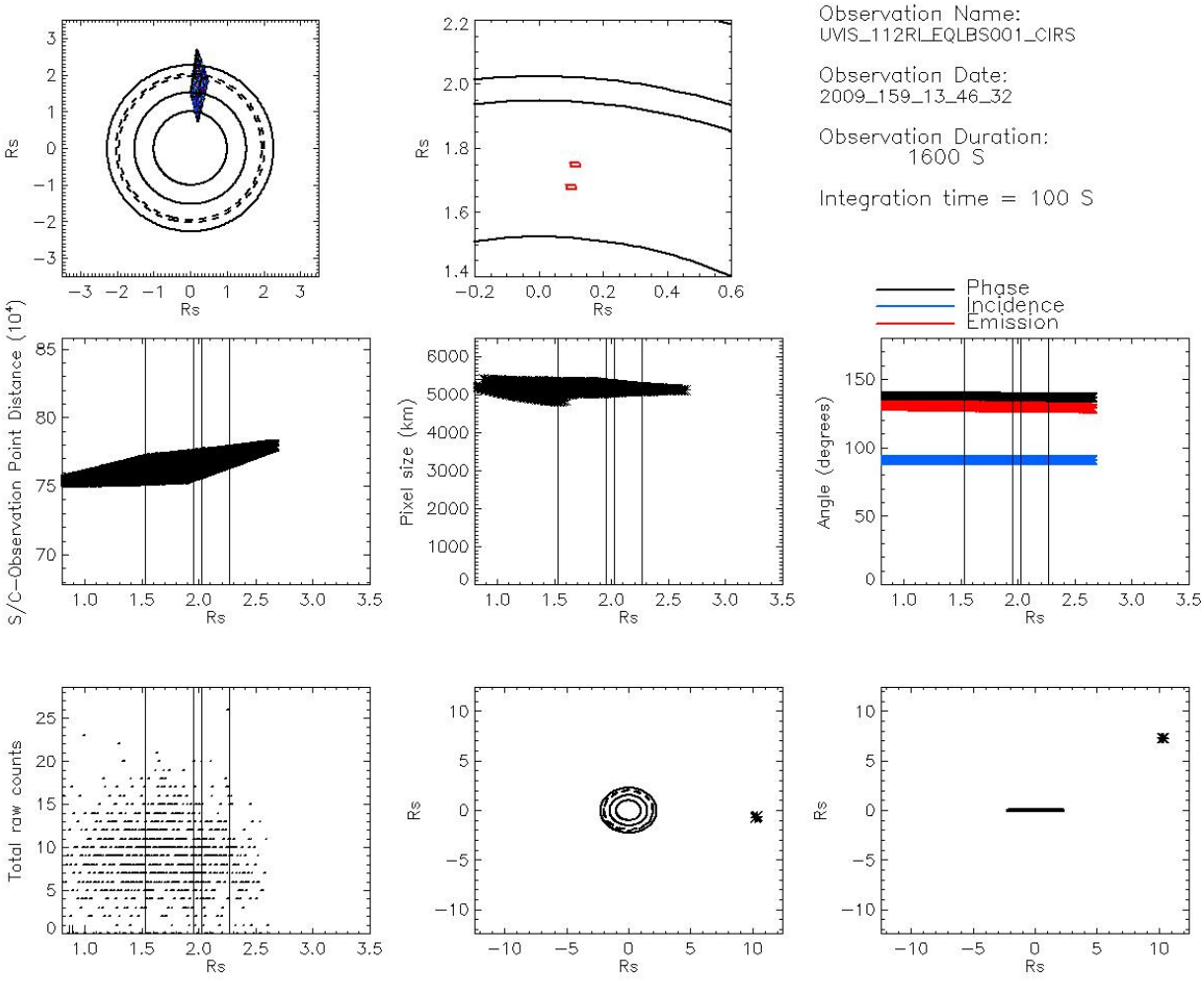


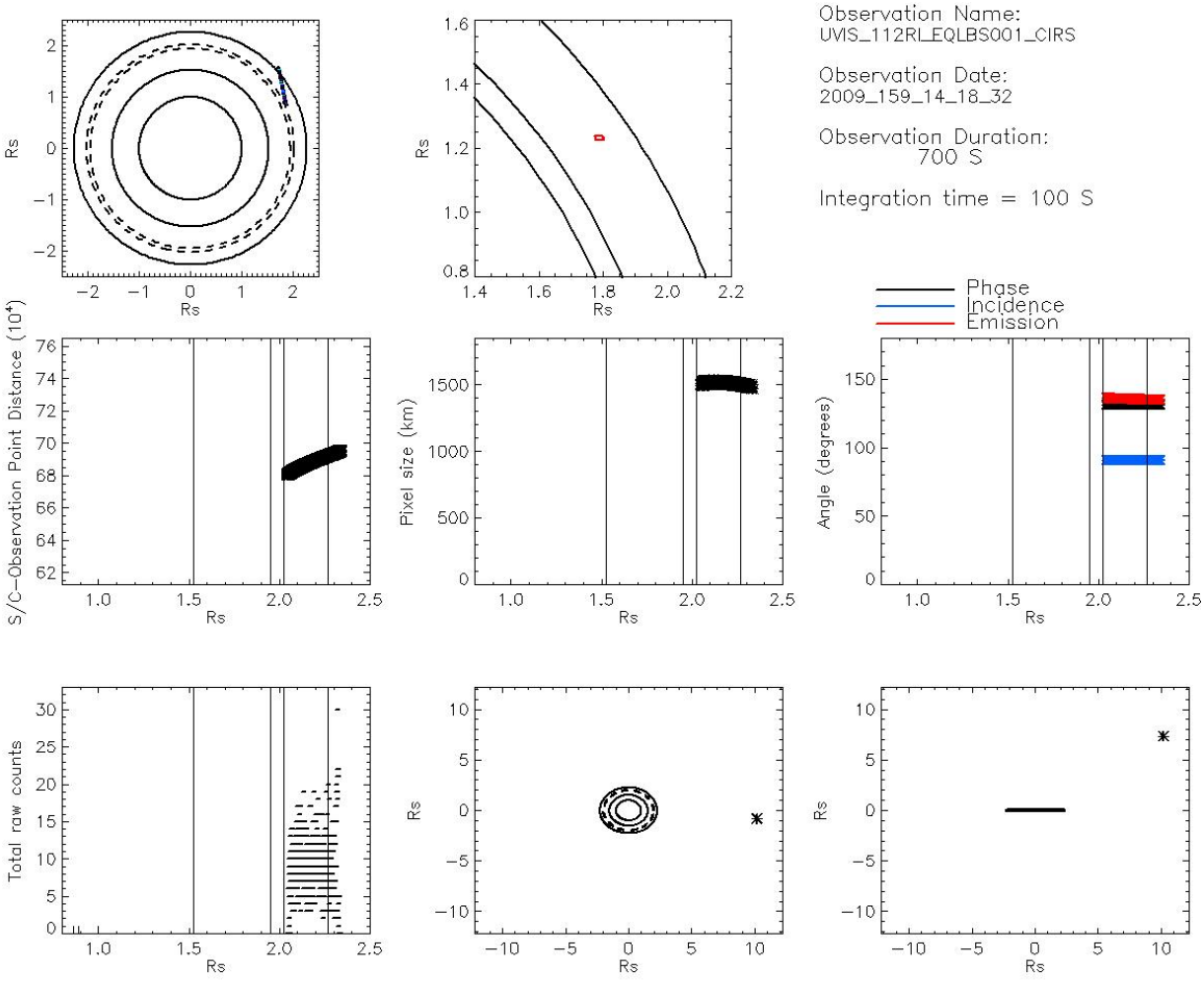


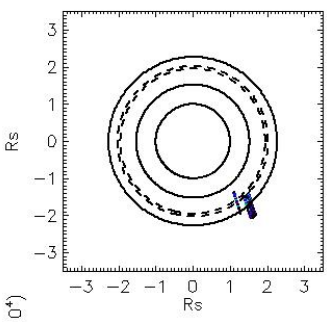


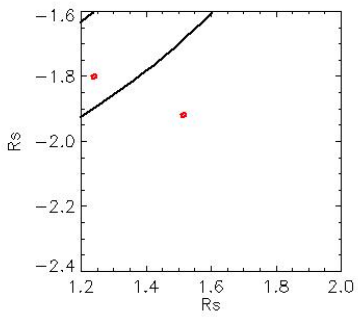





Observation Name:
UVIS_112RI_EQLBS001_CIRS
Observation Date:
2009_159_13_46_32
Observation Duration:
1600 S
Integration time = 100 S
Phase
Incidence
Emission
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs


Observation Name:
UVIS_112RI_EQLBS001_CIRS
Observation Date:
2009_159_14_18_32
Observation Duration:
700 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts



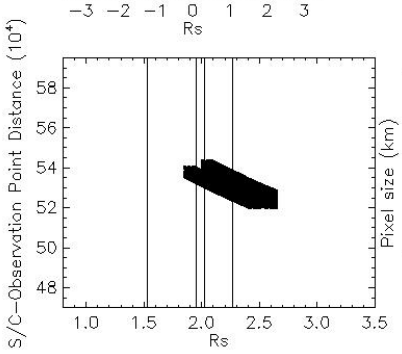


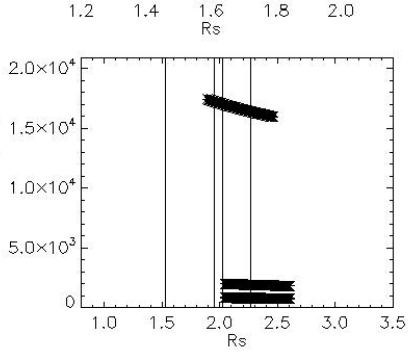
Observation Name:
UVIS_112RI_PREEQX001_VIMS

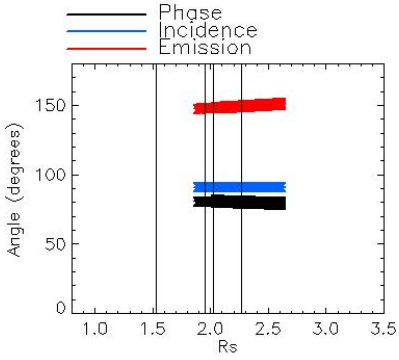
Observation Date:
2009_160_09_50_04

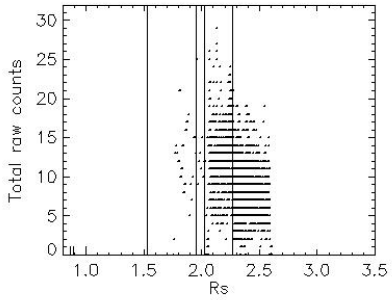
Observation Duration:
2700 S

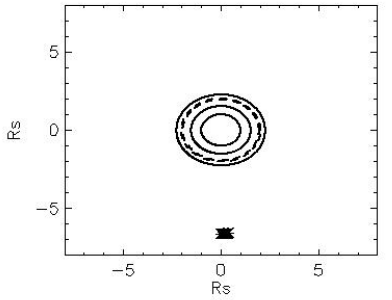
Integration time = 100 S

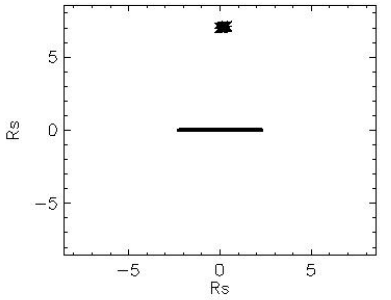


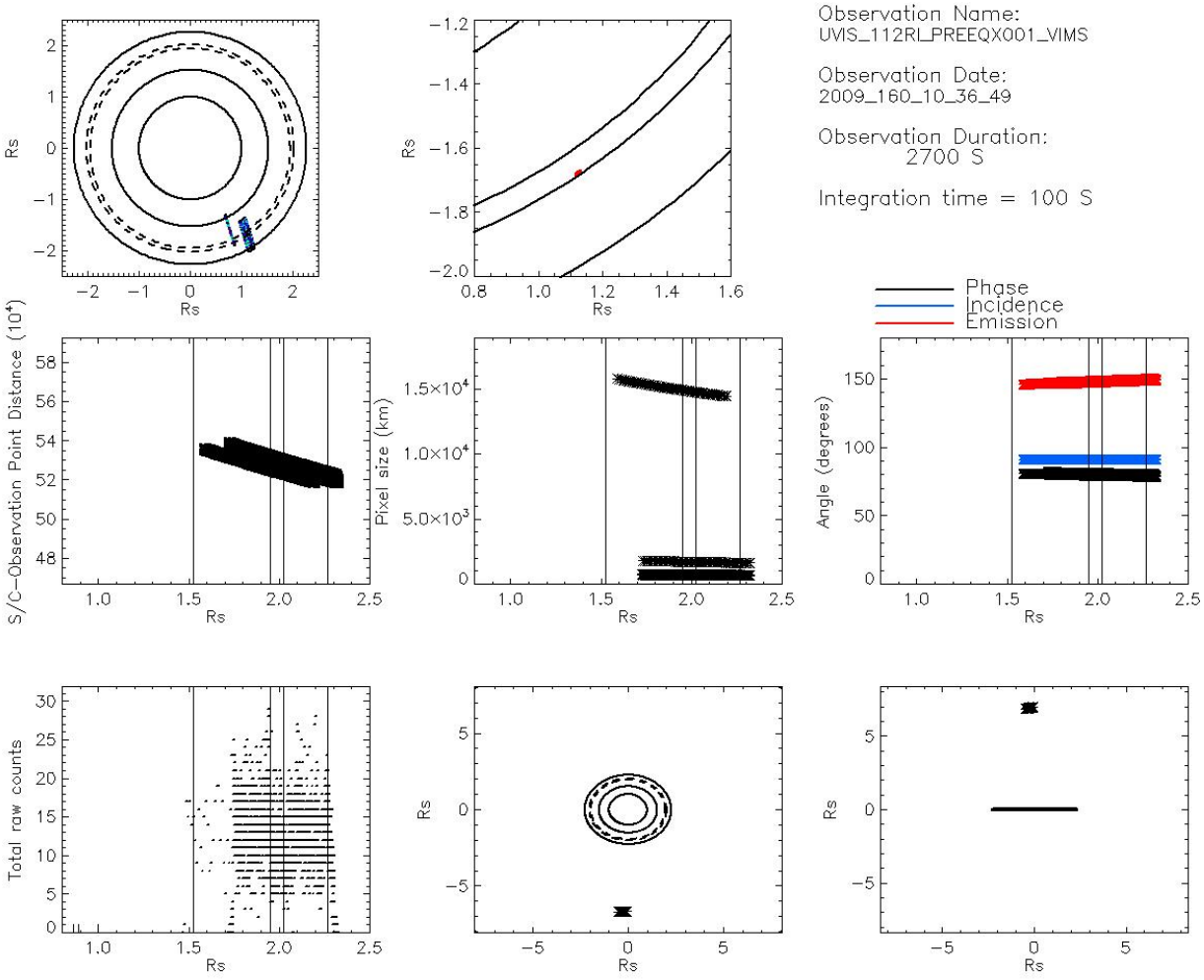


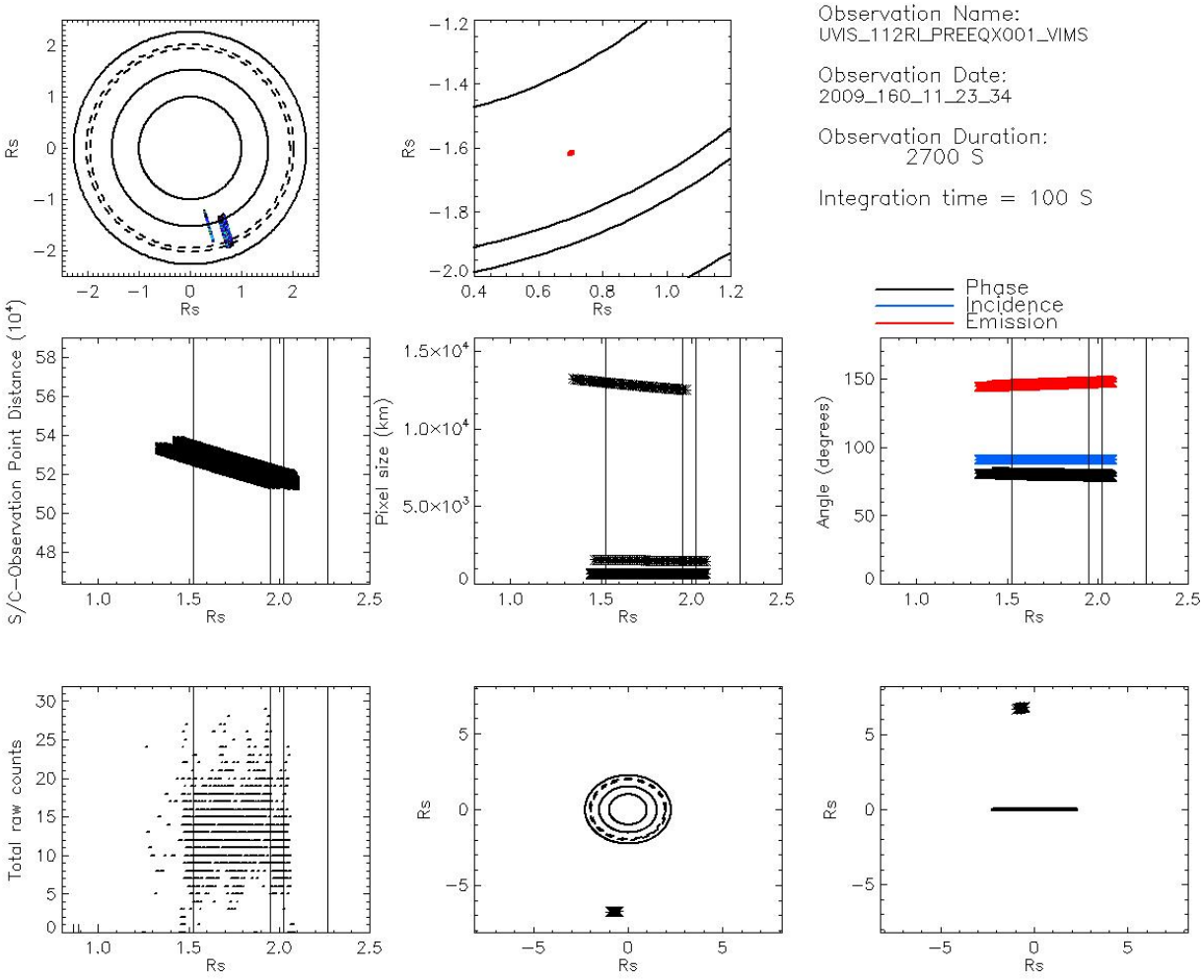


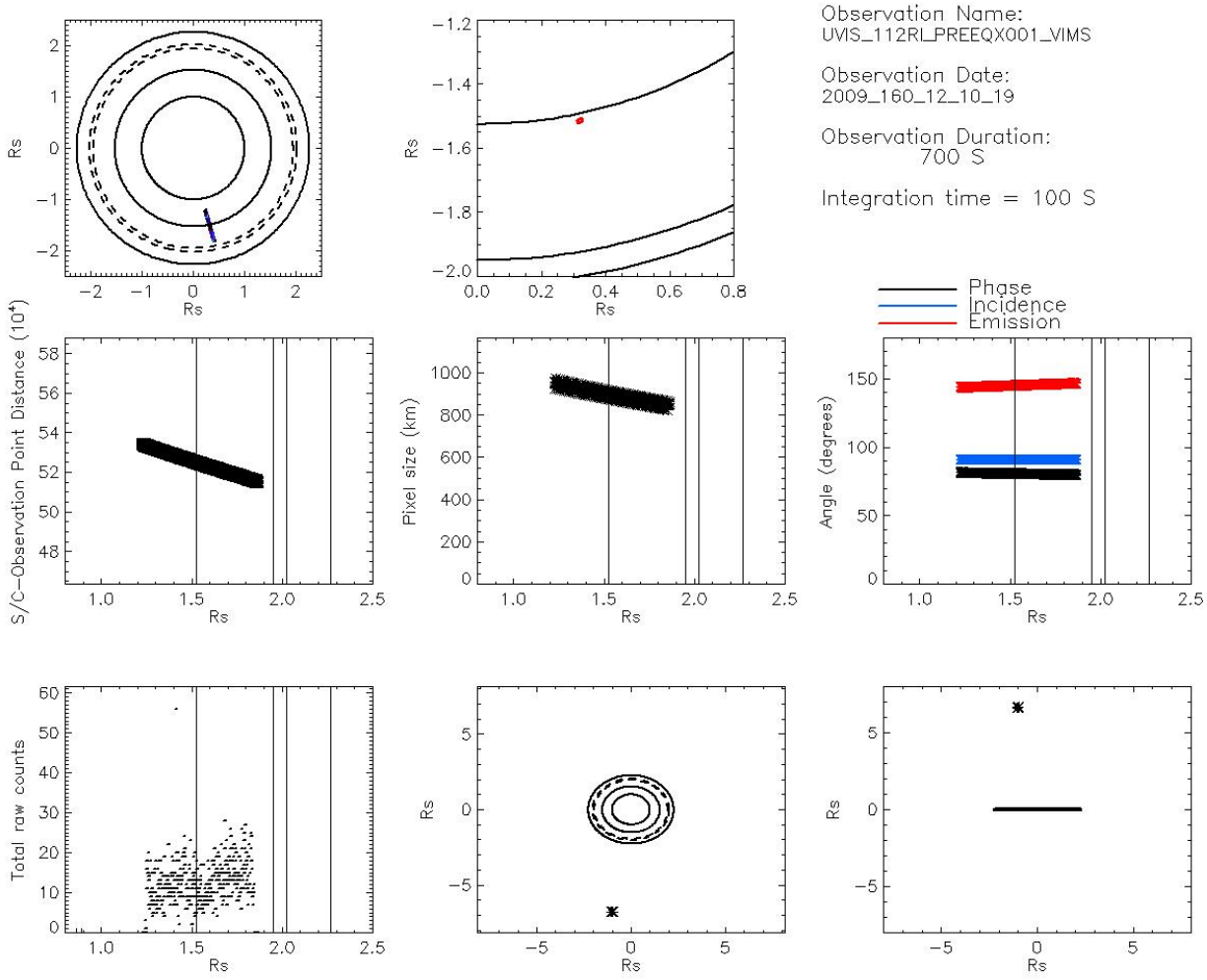


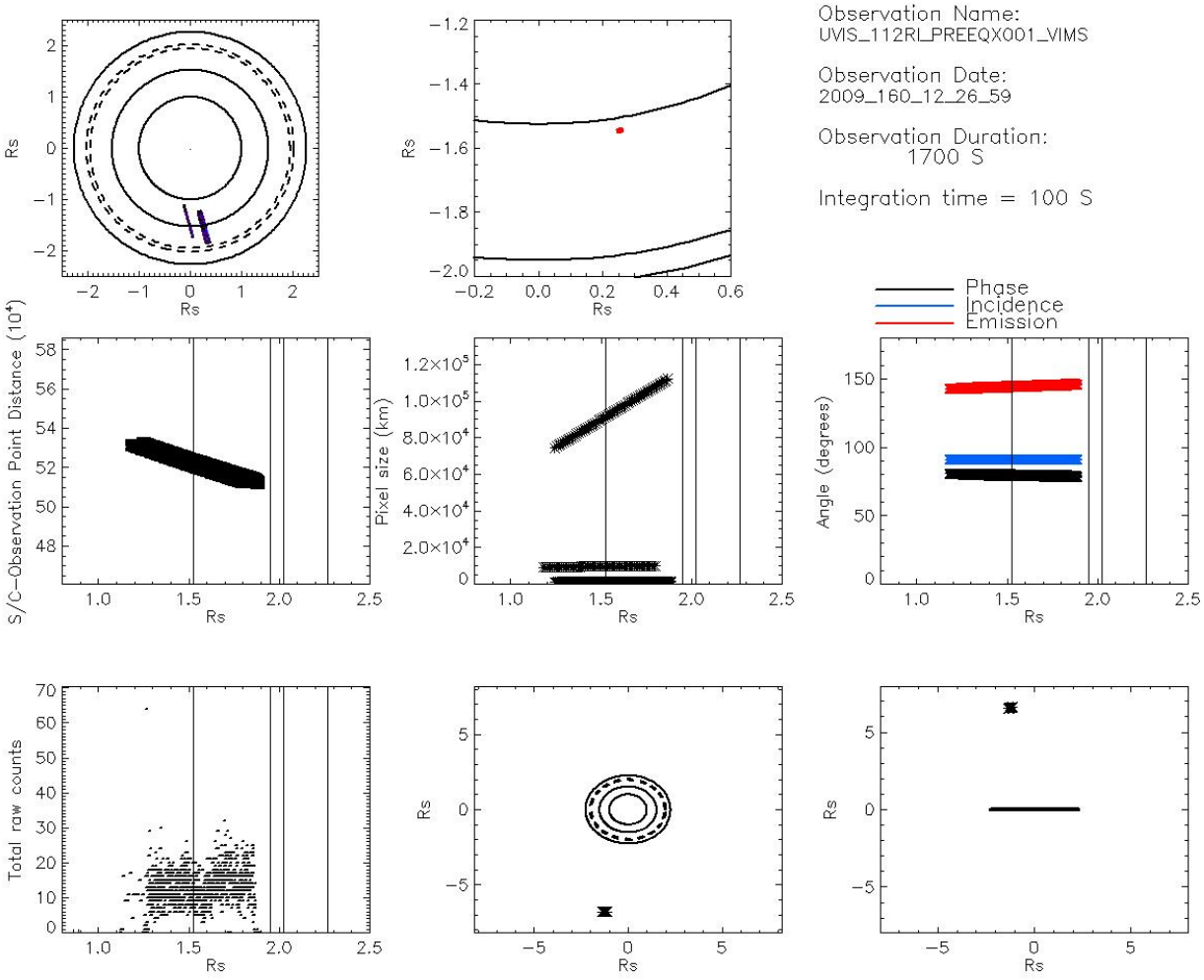


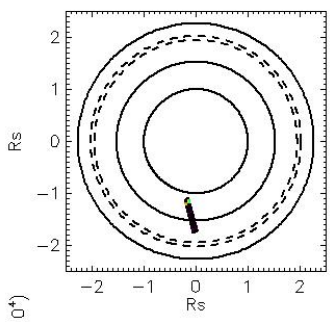


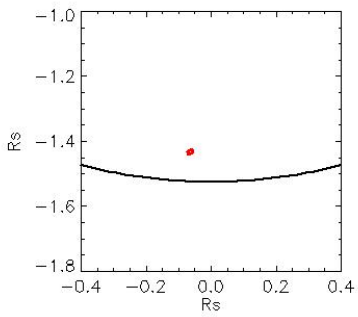

Observation Name:
UVIS_112RI_PREEQX001_VIMS
Observation Date:
2009_160_10_36_49
Observation Duration:
2700 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C-Observation Point Distance (10⁴)
Pixel size (km)
Angle (degrees)
Total raw counts


Observation Name:
UVIS_112RI_PREEQX001_VIMS
Observation Date:
2009_160_11_23_34
Observation Duration:
2700 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C-Observation Point Distance (10⁴)
Pixel size (km)
Angle (degrees)
Total raw counts


Observation Name:
UVIS_112RI_PREEQX001_VIMS
Observation Date:
2009_160_12_10_19
Observation Duration:
700 S
Integration time = 100 S
Phase
Incidence
Emission
S/C–Observation Point Distance (10⁴)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs


Observation Name:
UVIS_112RI_PREEQX001_VIMS
Observation Date:
2009_160_12_26_59
Observation Duration:
1700 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C-Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts



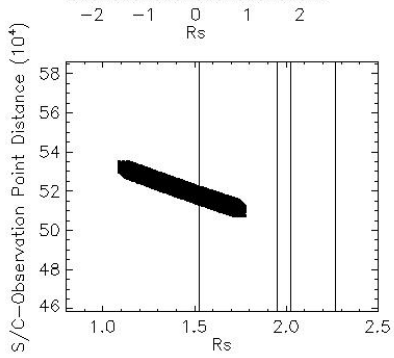


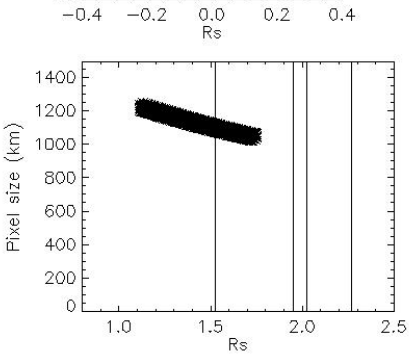
Observation Name:
UVIS_112RI_PREEQX001_VIMS

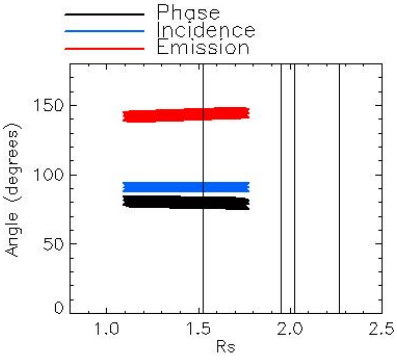
Observation Date:
2009_160_12_57_04

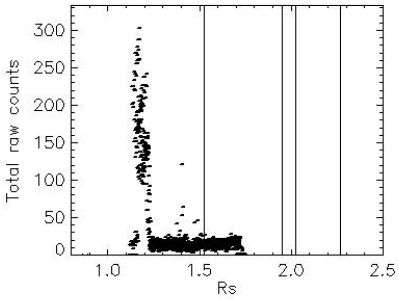
Observation Duration:
2100 S

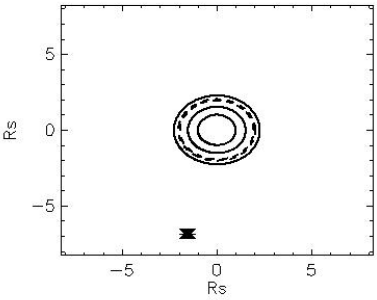
Integration time = 100 S

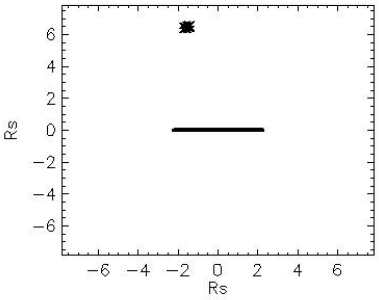


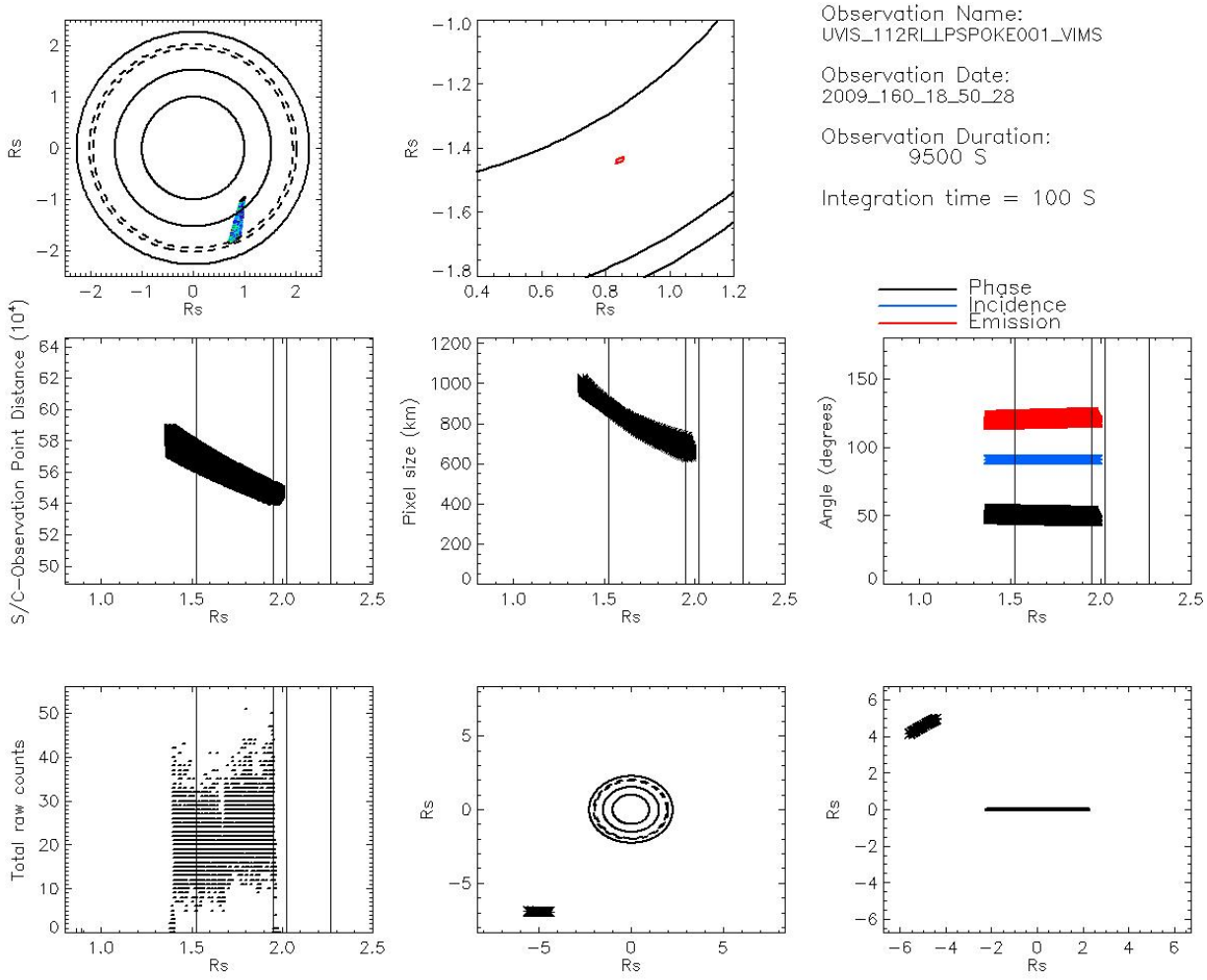


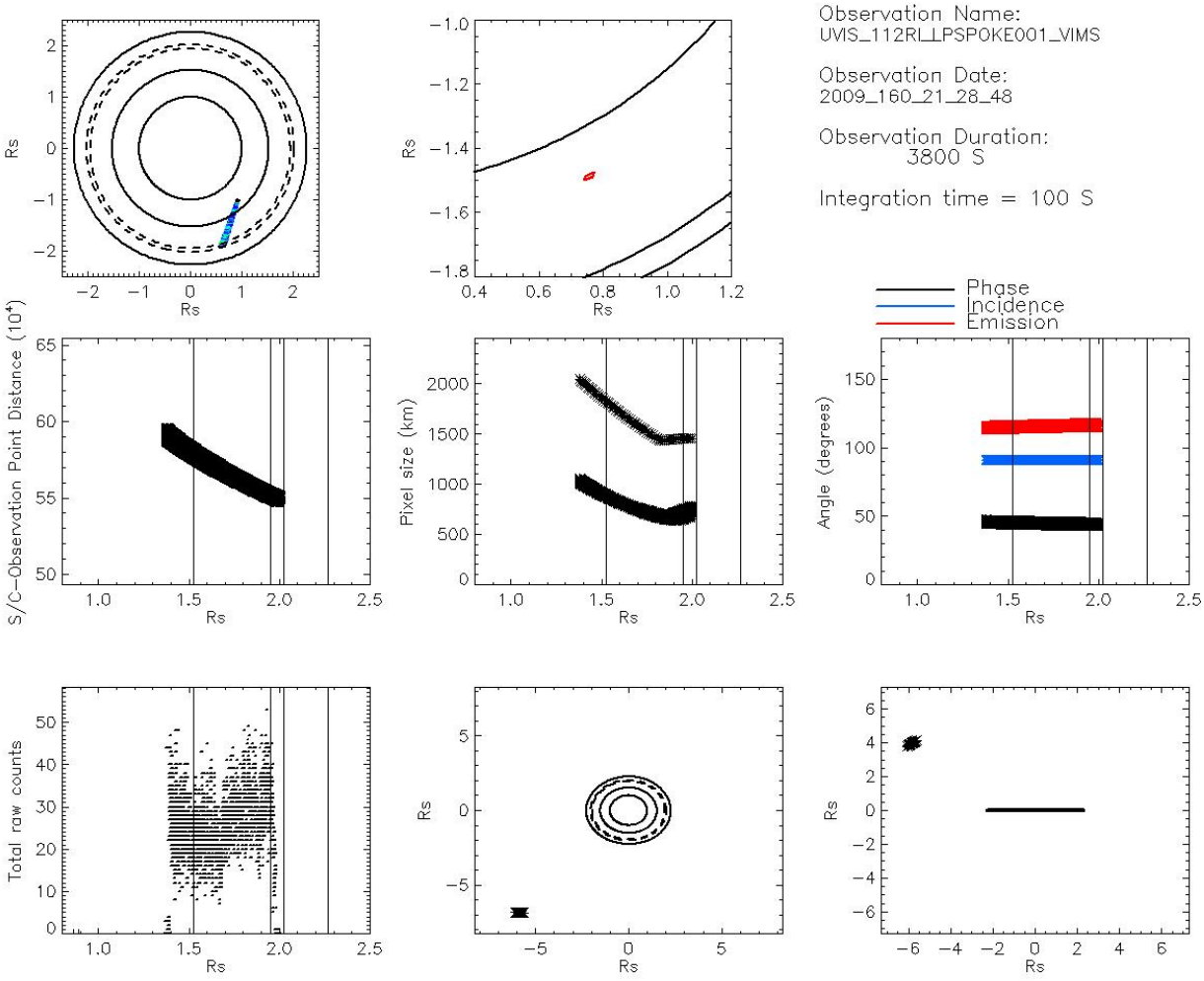


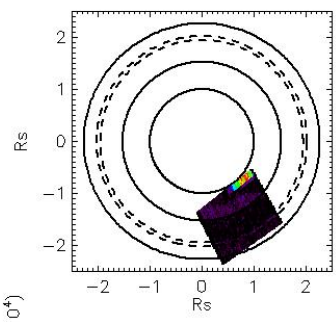


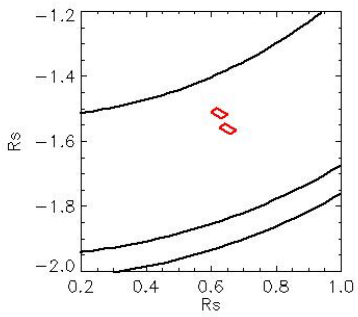





Observation Name:
UVIS_112RI_LPSPOKE001_VIMS
Observation Date:
2009_160_18_50_28
Observation Duration:
9500 S
Integration time = 100 S
Phase
Incidence
Emission
S/C-Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs


Observation Name:
UVIS_112RI_LPSPOKE001_VIMS
Observation Date:
2009_160_21_28_48
Observation Duration:
3800 S
Integration time = 100 S
Phase
Incidence
Emission
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs



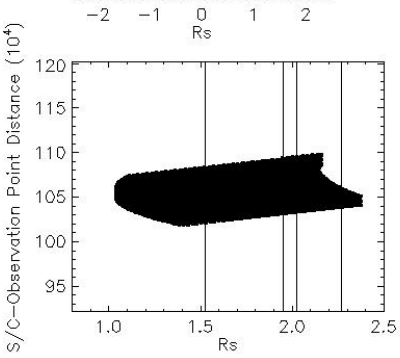


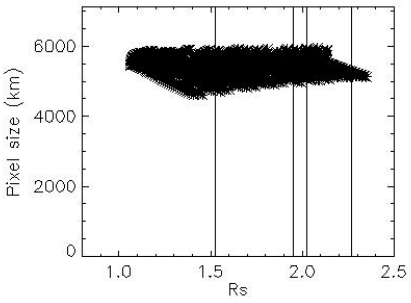
Observation Name:
UVIS_112RI_EQLBN001_CIRS

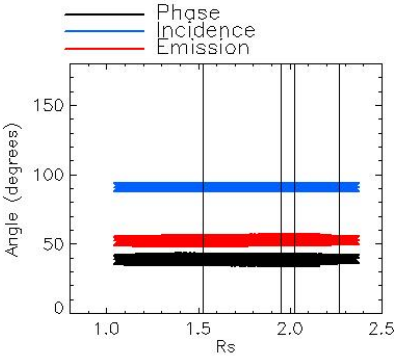
Observation Date:
2009_162_12_06_33

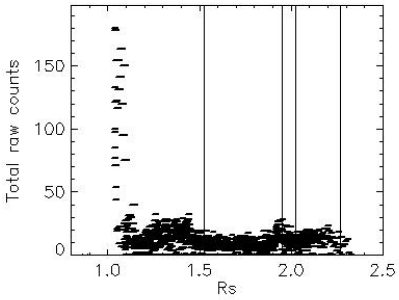
Observation Duration:
2000 S

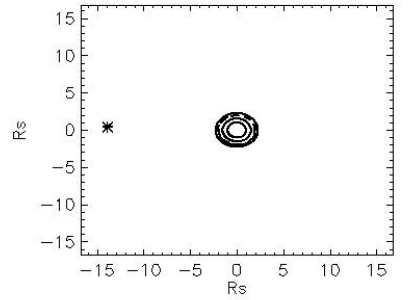
Integration time = 100 S

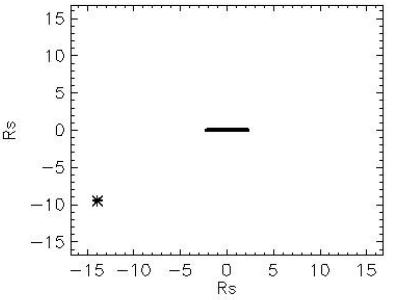


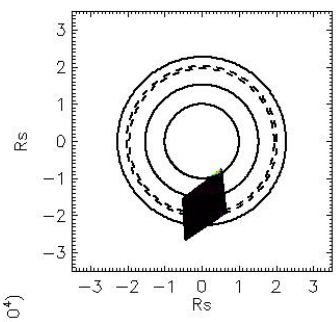


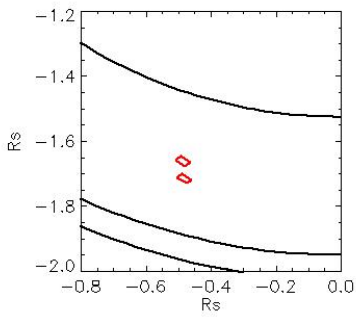










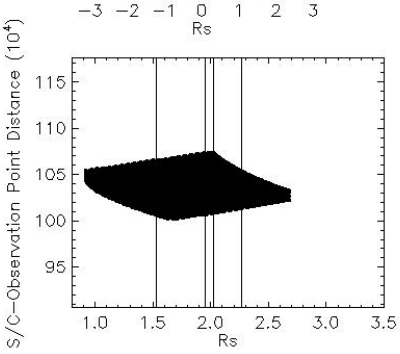


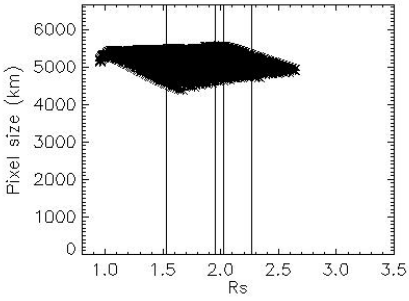
Observation Name:
UVIS_112RI_EQLBN001_CIRS

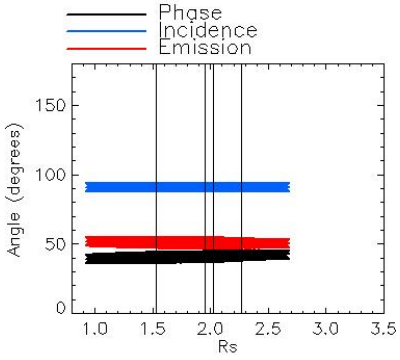
Observation Date:
2009_162_12_46_33

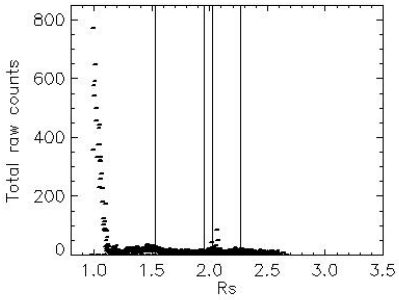
Observation Duration:
2000 S

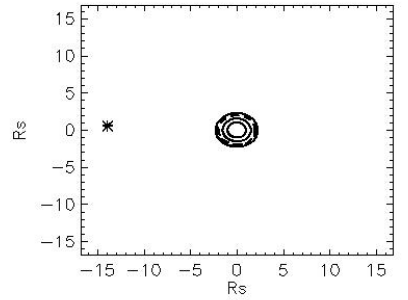
Integration time = 100 S

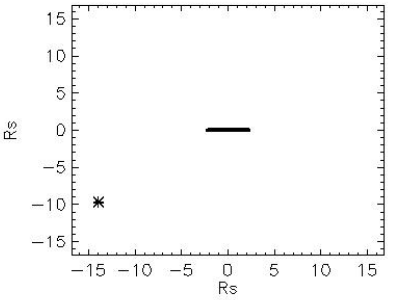


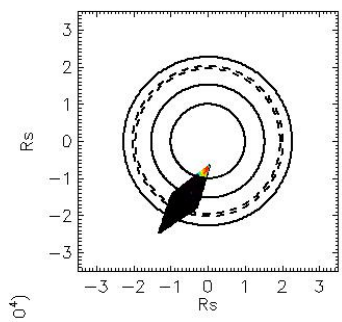


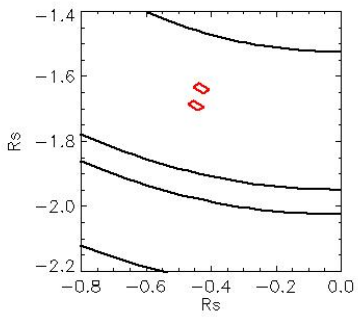










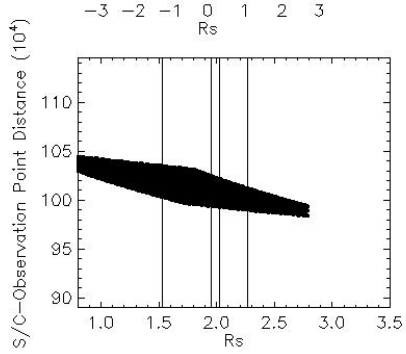


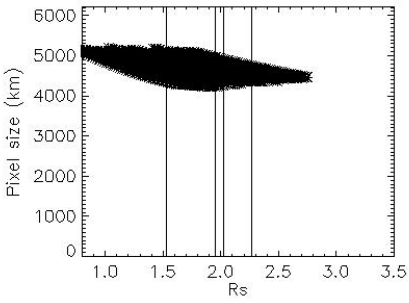
Observation Name:
UVIS_112RI_EQLBN001_CIRS

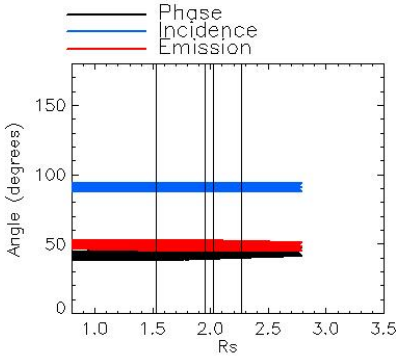
Observation Date:
2009_162_13_26_33

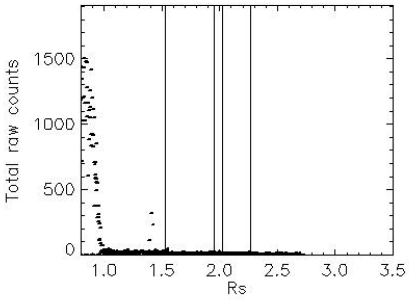
Observation Duration:
2000 S

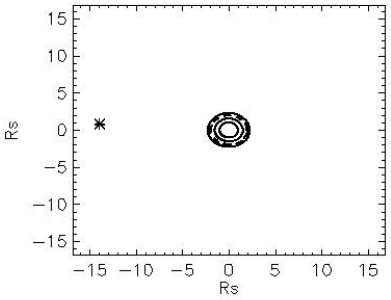
Integration time = 100 S

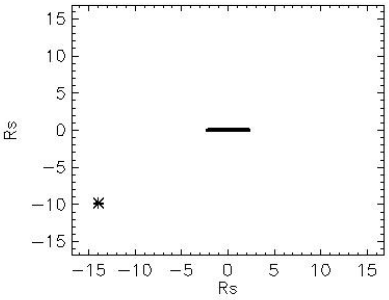


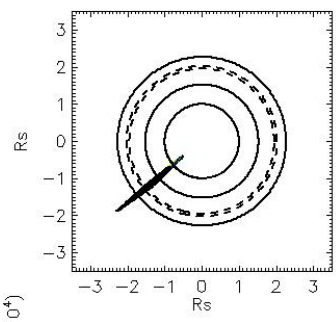


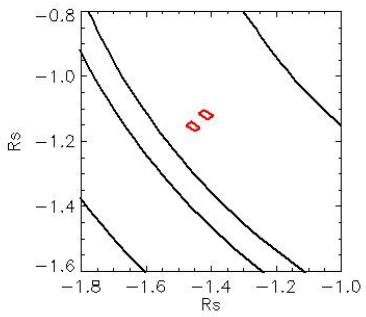










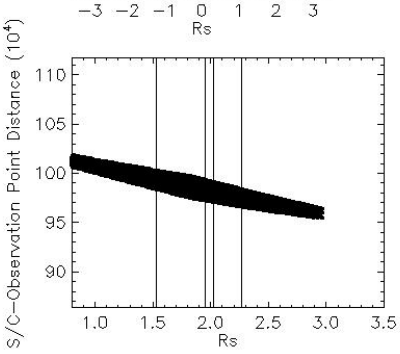


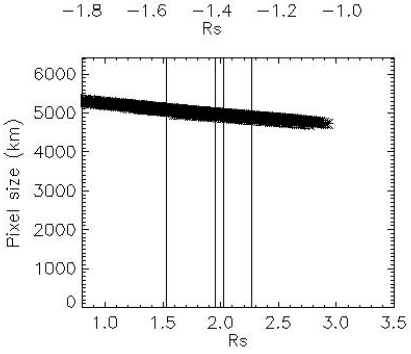
Observation Name:
UVIS_112RI_EQLBN001_CIRS

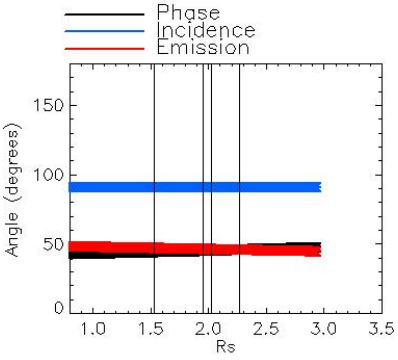
Observation Date:
2009_162_14_06_33

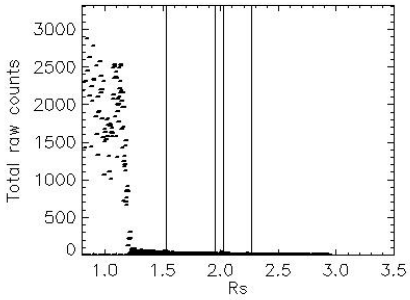
Observation Duration:
2000 S

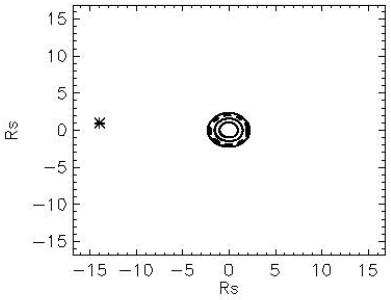
Integration time = 100 S

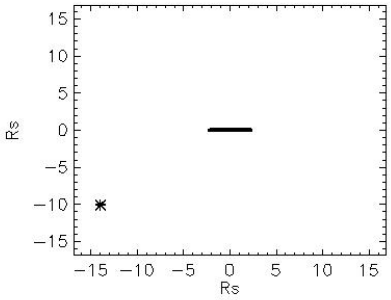


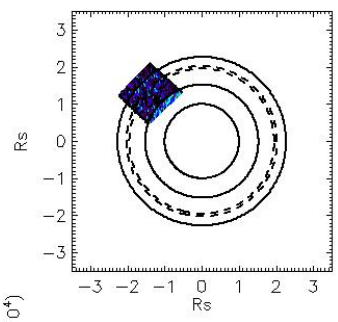


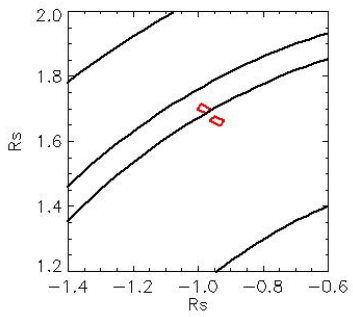










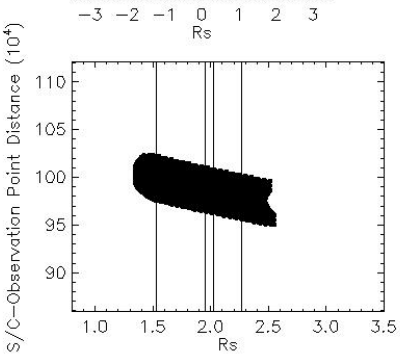


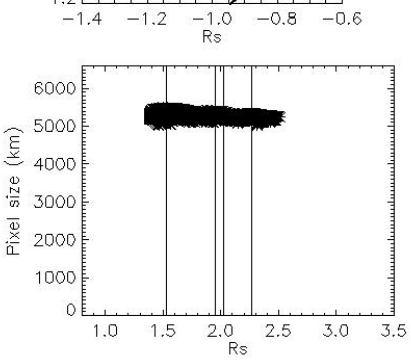
Observation Name:
UVIS_112RI_EQLBN001_CIRS

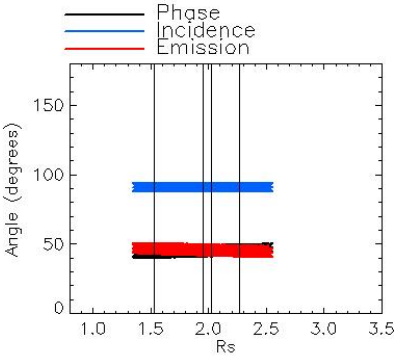
Observation Date:
2009_162_14_46_33

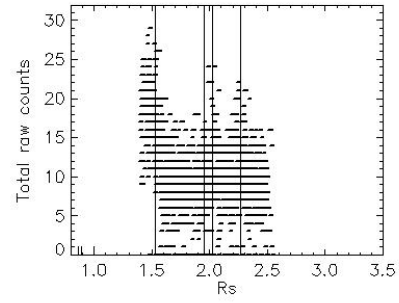
Observation Duration:
2000 S

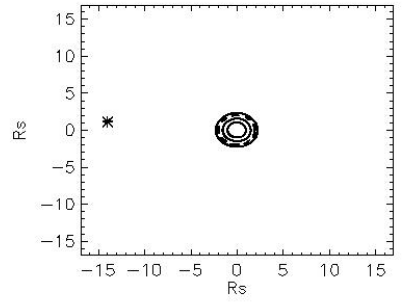
Integration time = 100 S

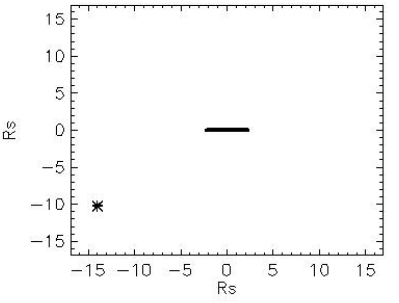


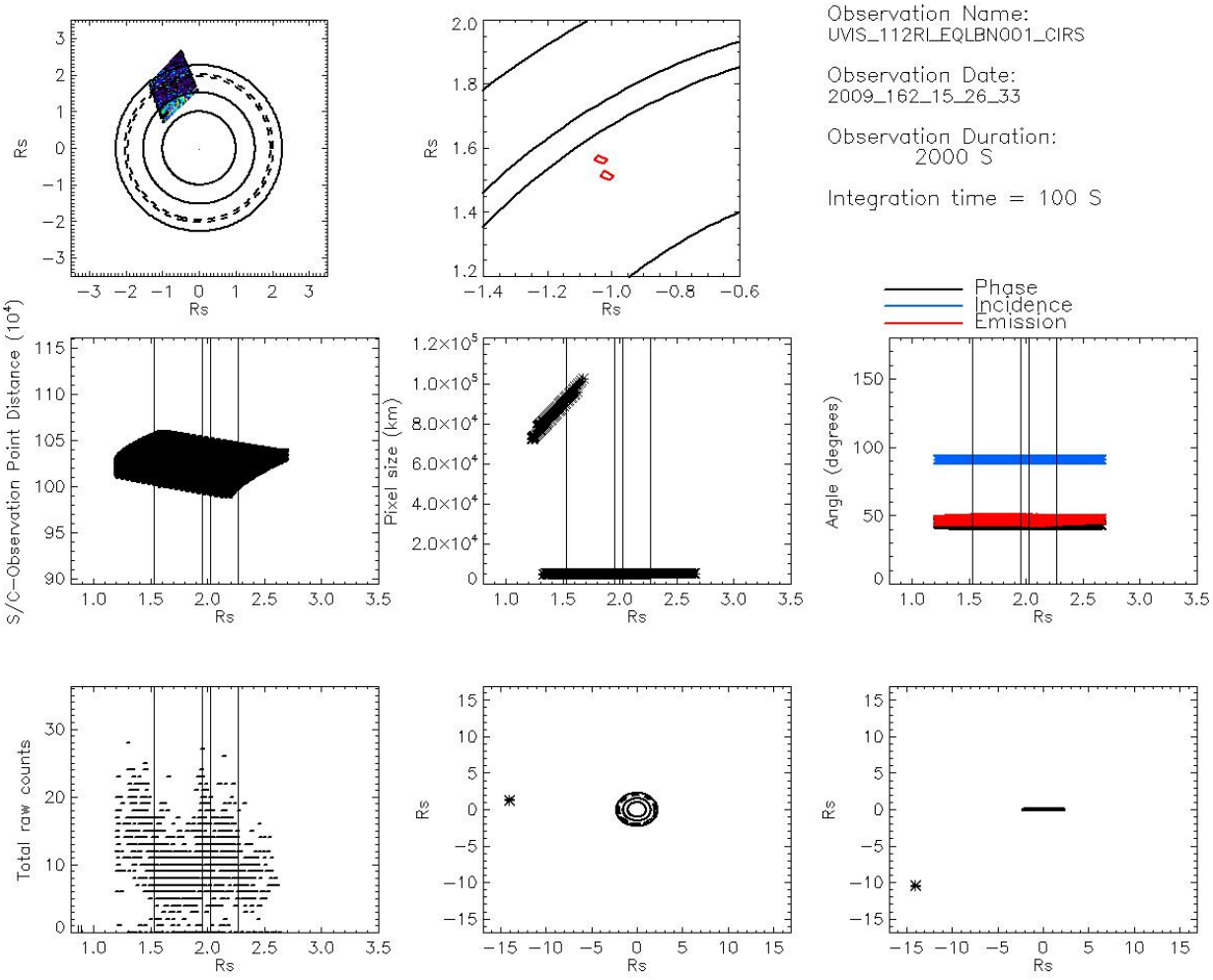


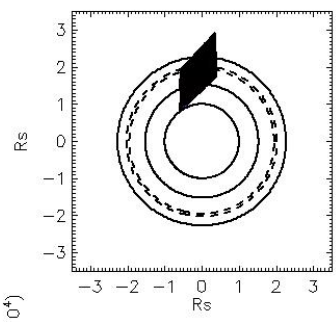


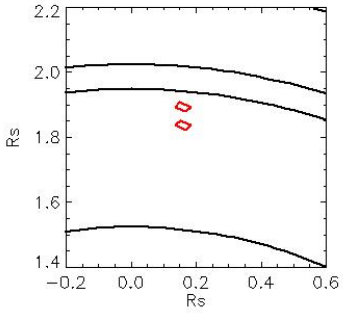







Observation Name:
UVIS_112RI_EQLBN001_CIRS
Observation Date:
2009_162_15_26_33
Observation Duration:
2000 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts



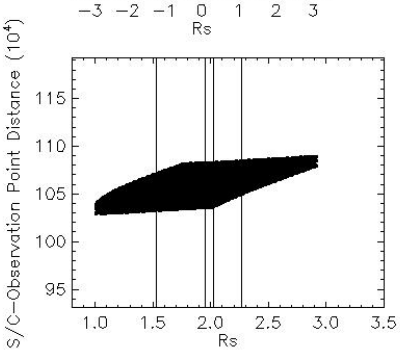


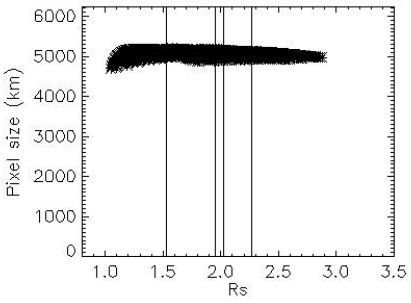
Observation Name:
UVIS_112RI_EQLBN001_CIRS

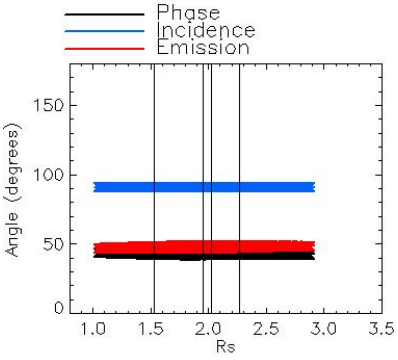
Observation Date:
2009_162_16_06_33

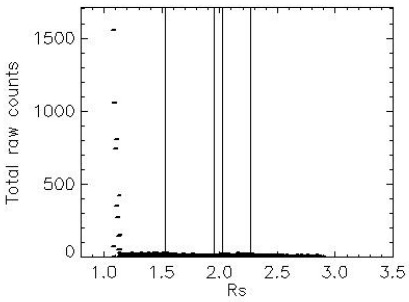
Observation Duration:
2000 S

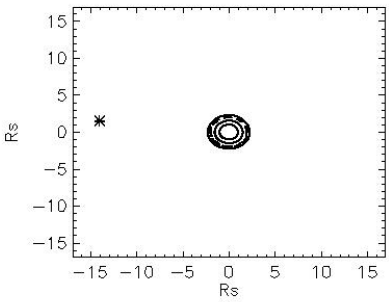
Integration time = 100 S

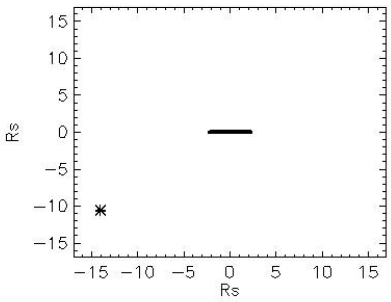


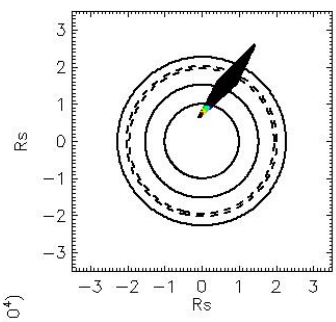


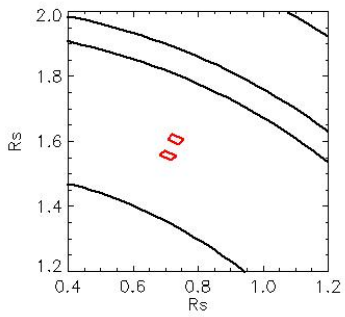










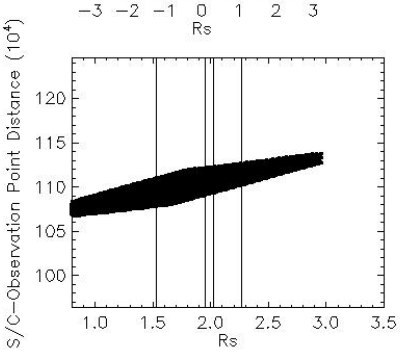


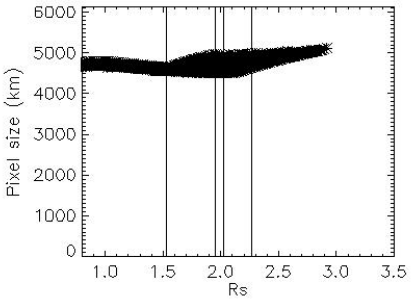
Observation Name:
UVIS_112RI_EQLBN001_CIRS

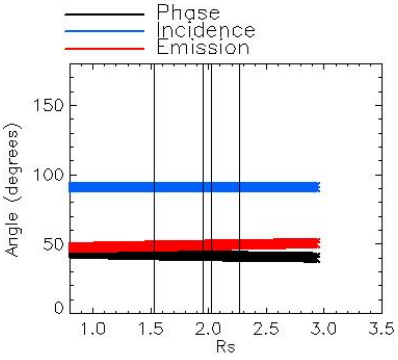
Observation Date:
2009_162_16_46_33

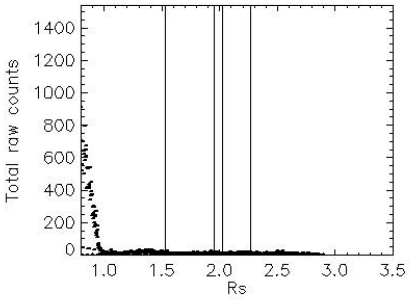
Observation Duration:
2000 S

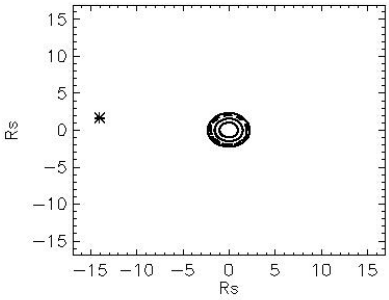
Integration time = 100 S

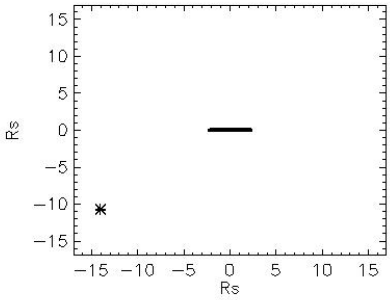


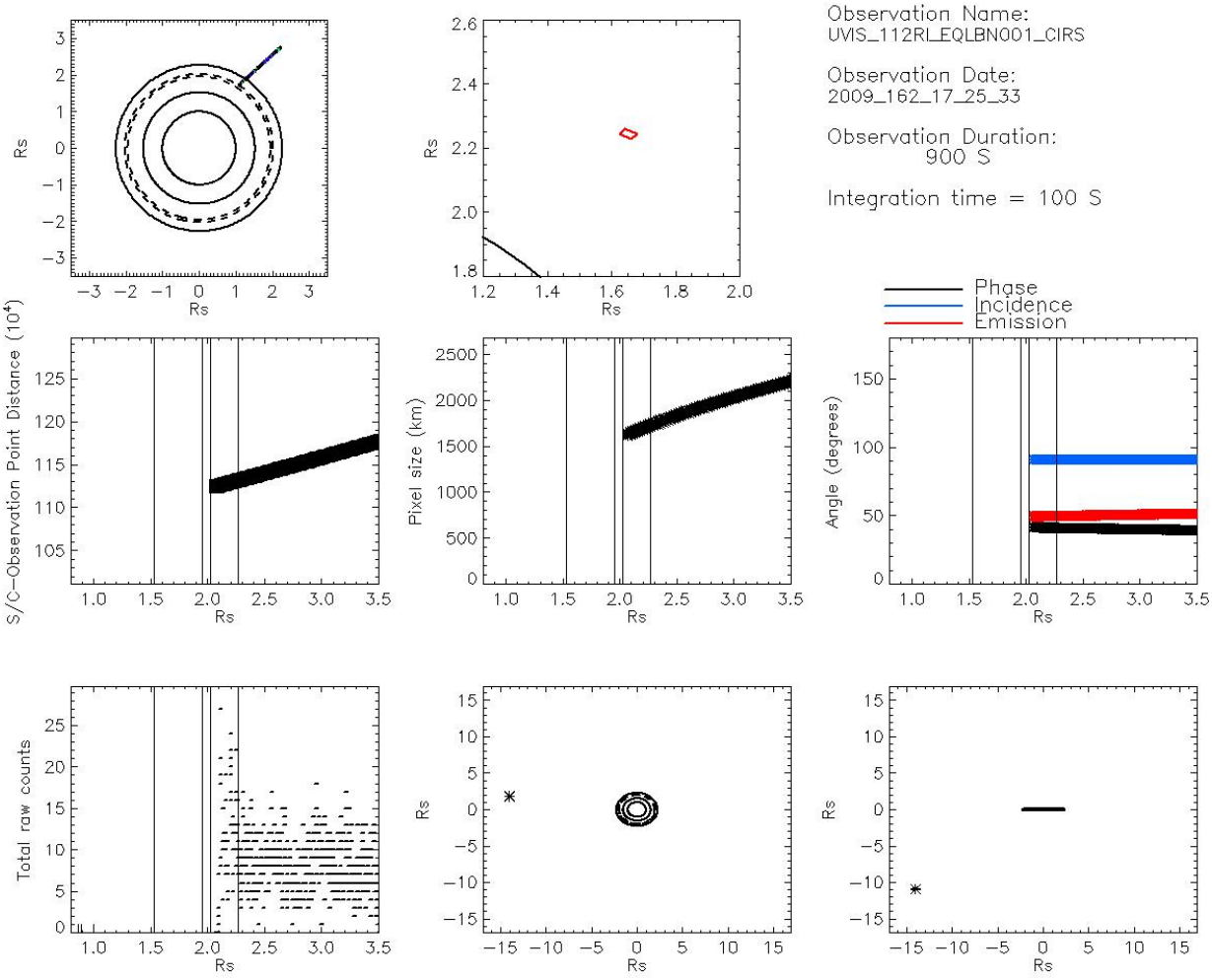


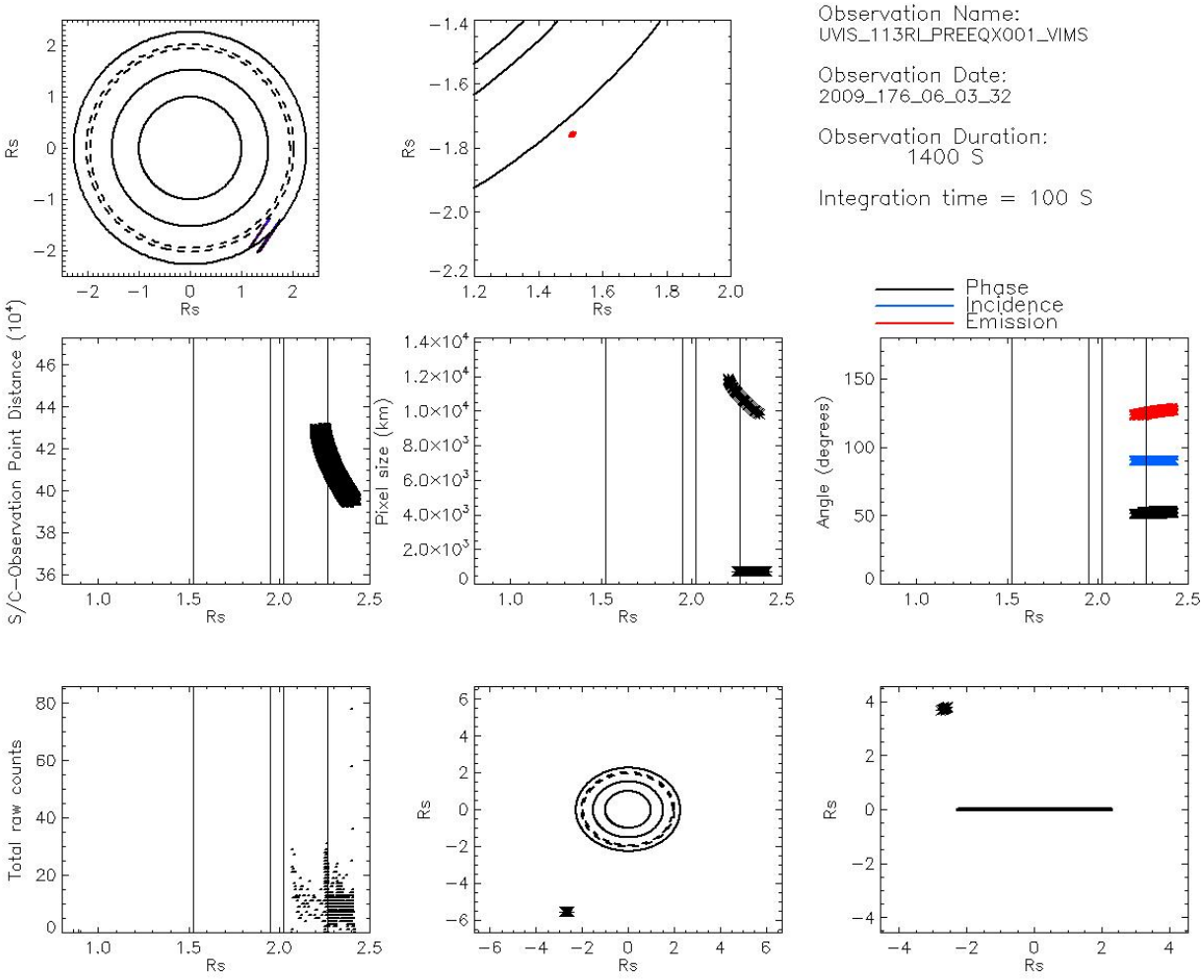


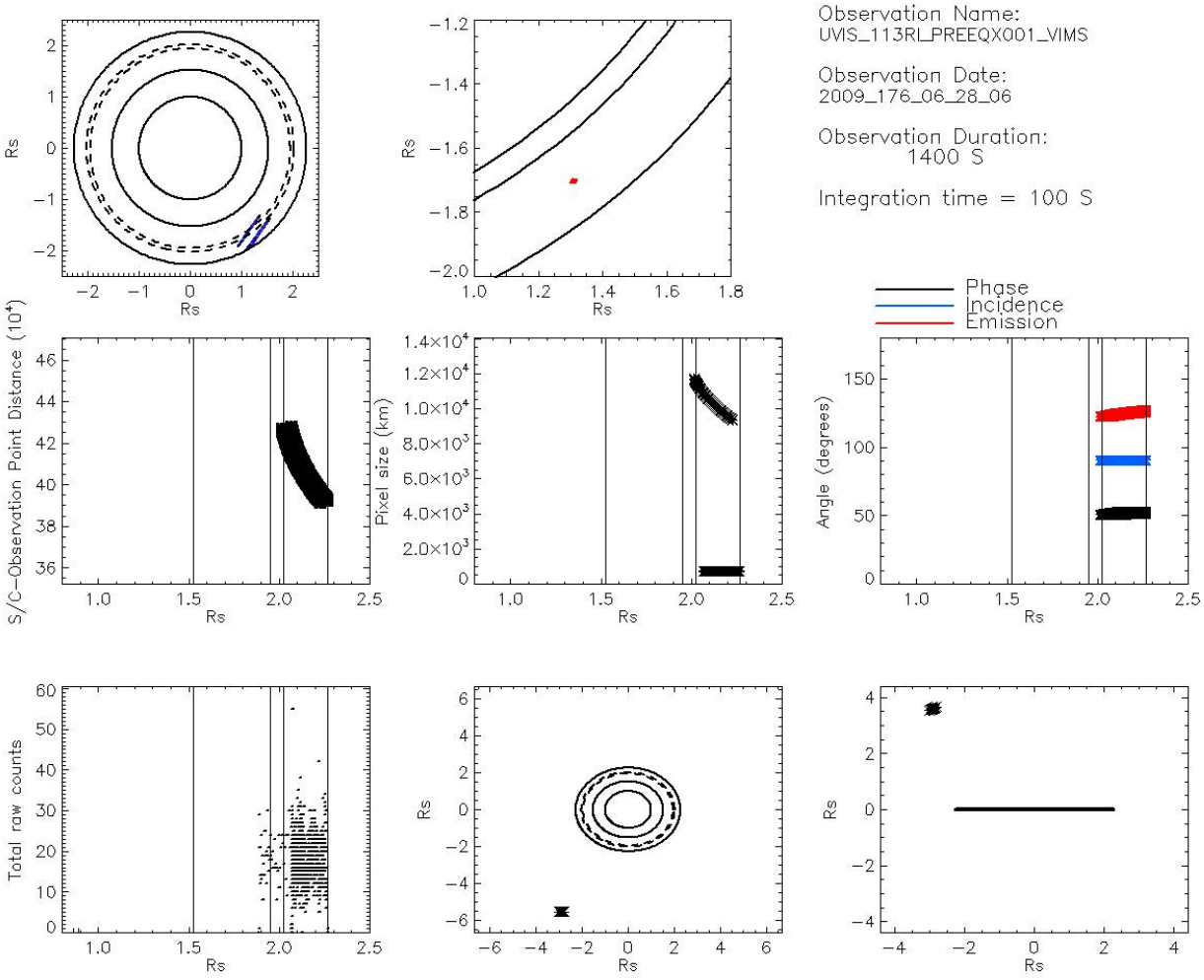


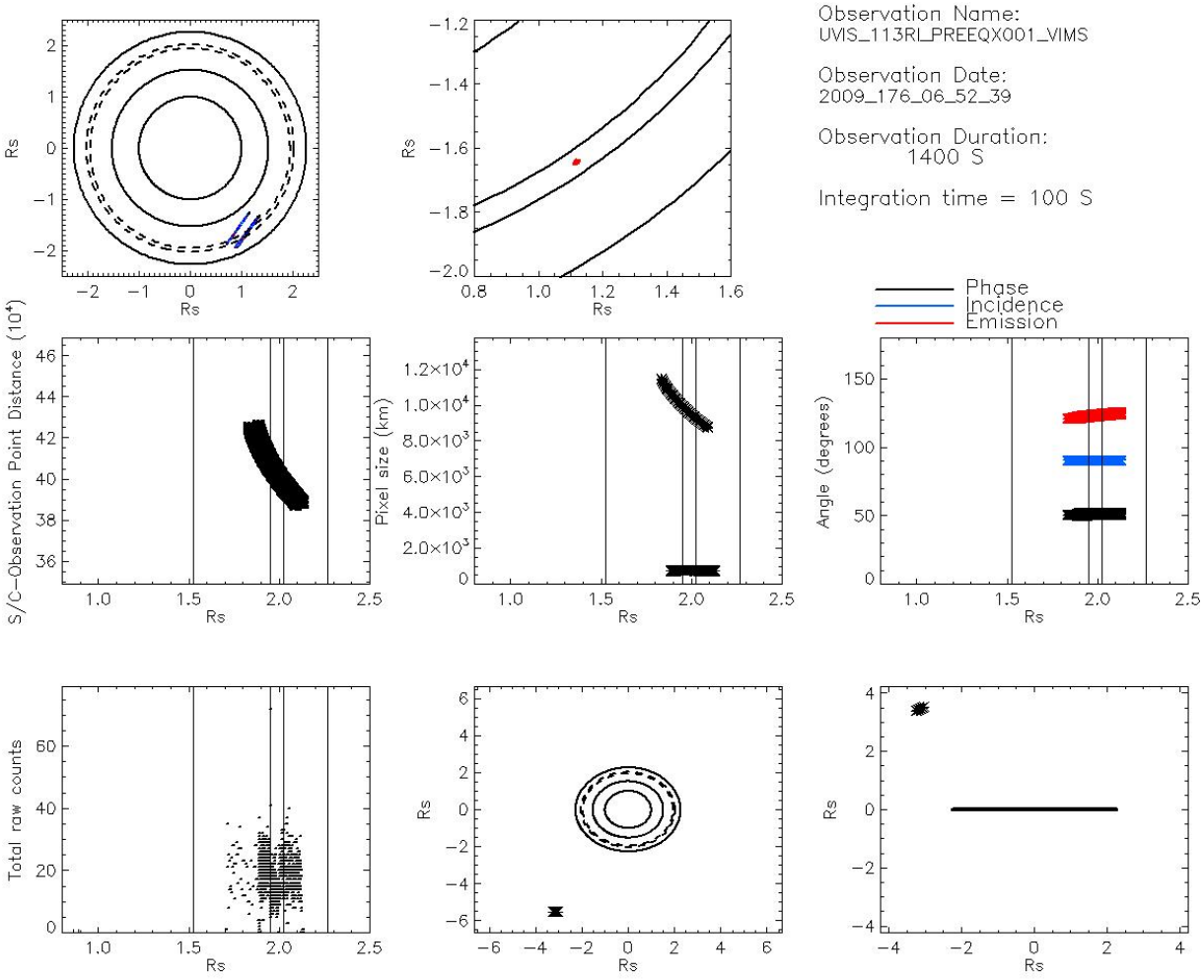


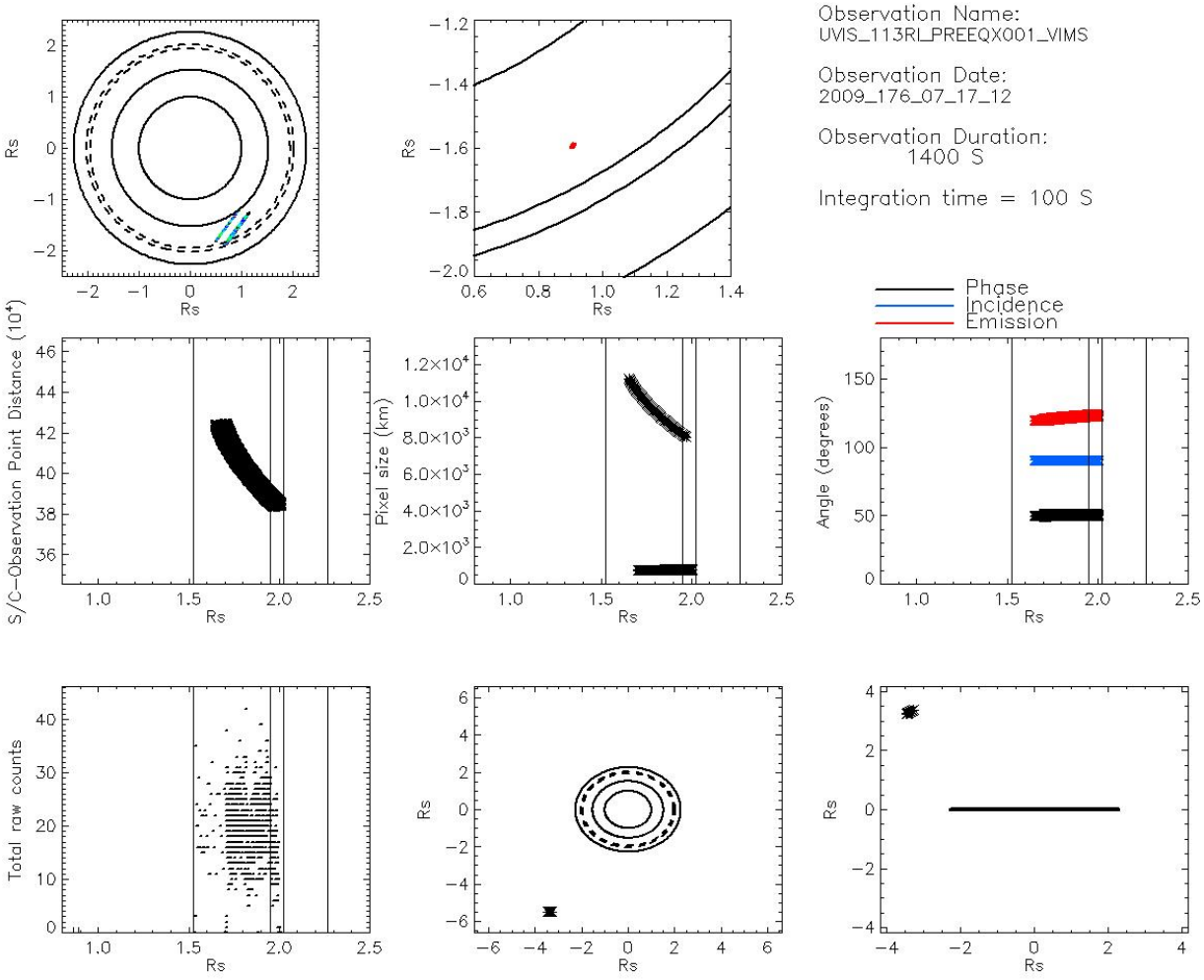


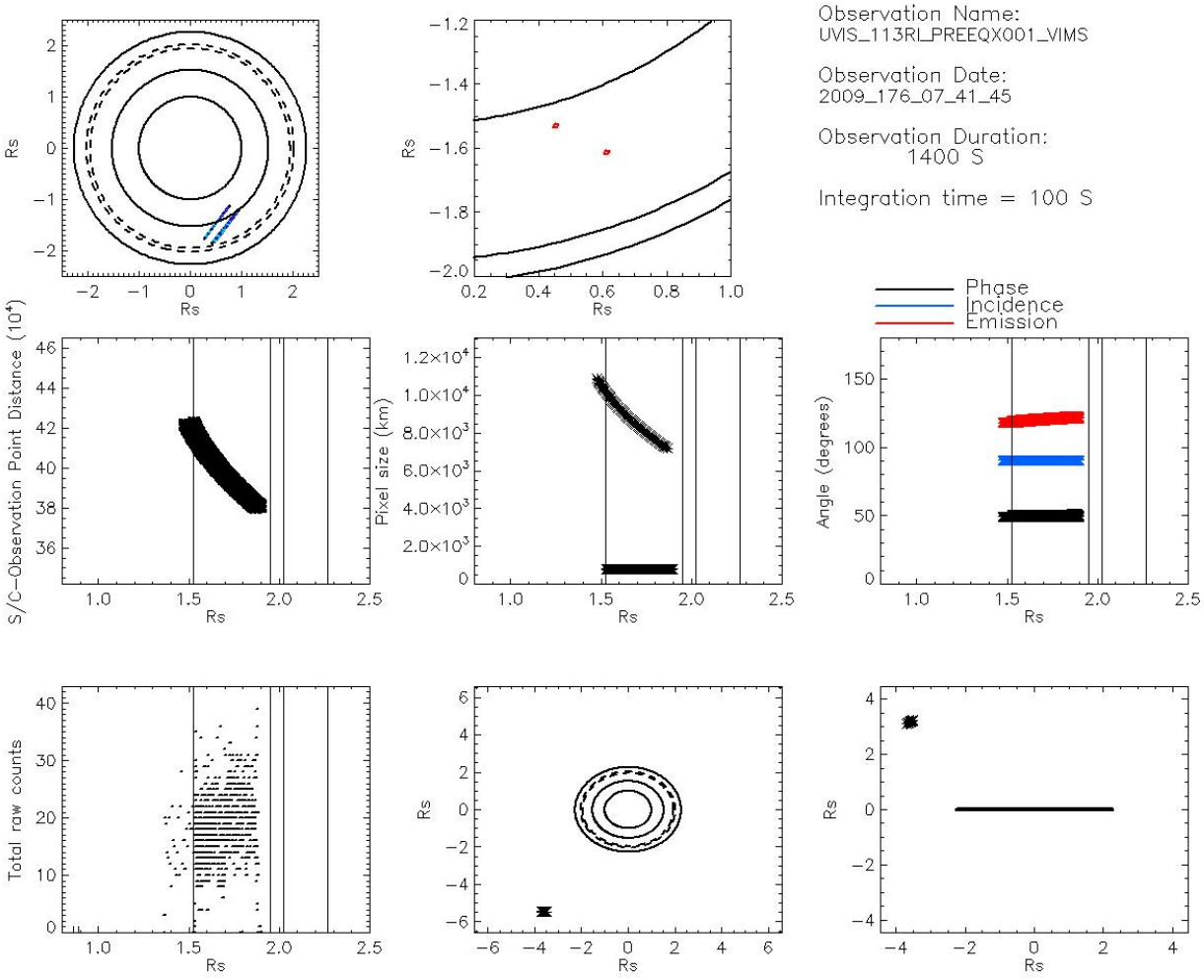

Observation Name:
UVIS_112RI_EQLBN001_CIRS
Observation Date:
2009_162_17_25_33
Observation Duration:
900 S
Integration time = 100 S
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Phase
Incidence
Emission
Total raw counts

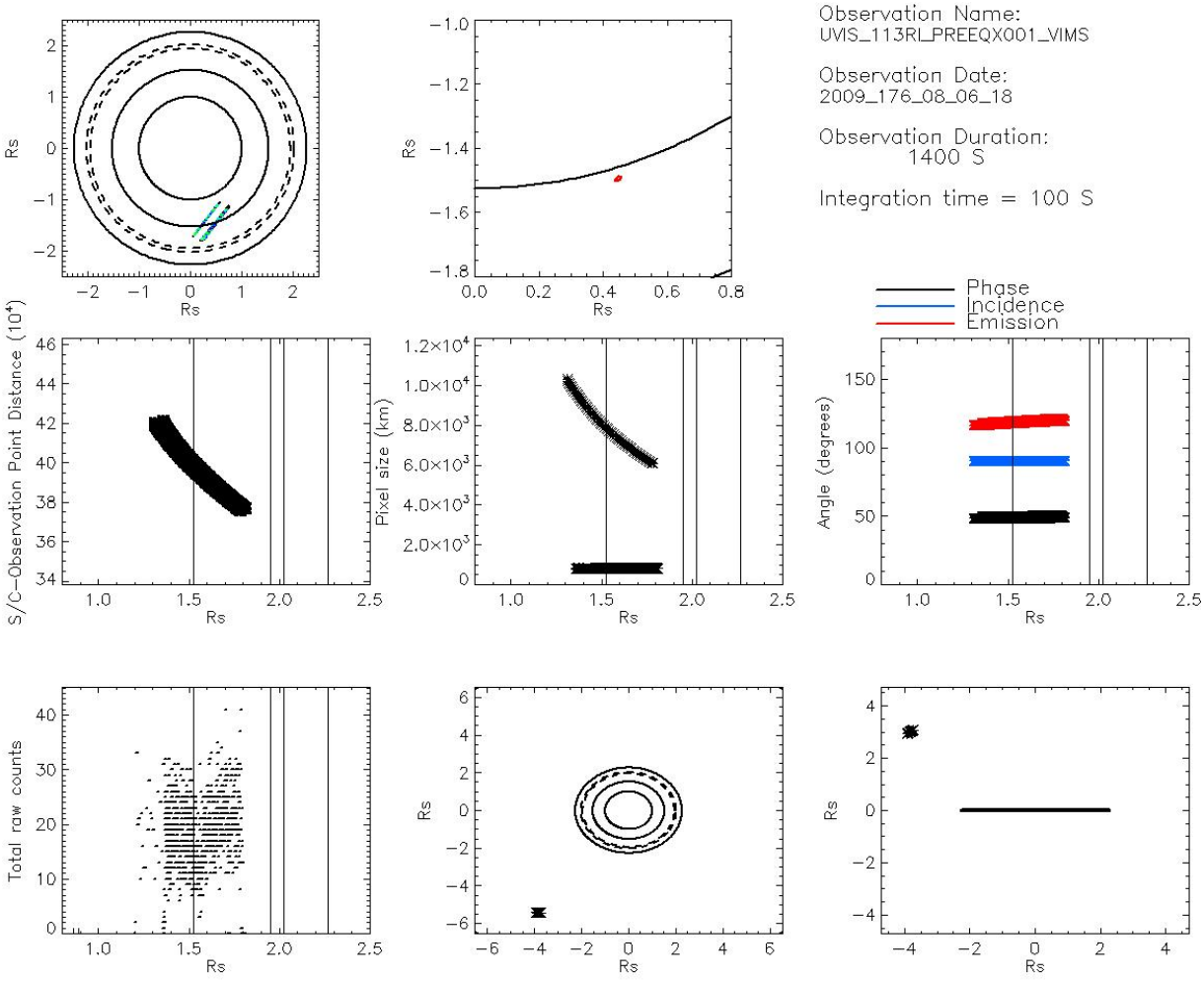

Observation Name:
UVIS_113RI_PREEQX001_VIMS
Observation Date:
2009_176_06_03_32
Observation Duration:
1400 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10⁴)
Pixel size (km)
Angle (degrees)
Total raw counts

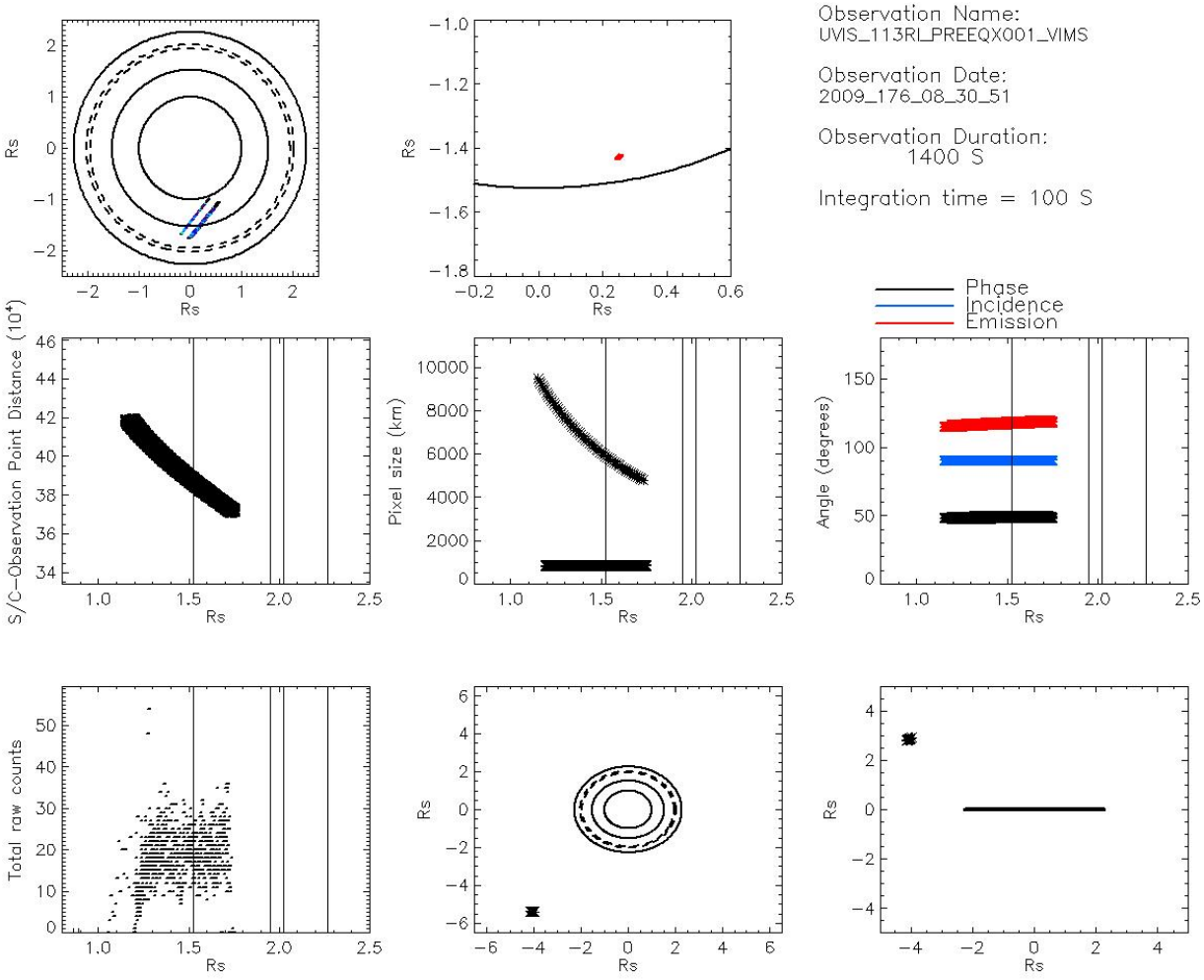

Observation Name:
UVIS_113RI_PREEQX001_VIMS
Observation Date:
2009_176_06_28_06
Observation Duration:
1400 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C-Observation Point Distance (10⁴)
Pixel size (km)
Angle (degrees)
Total raw counts

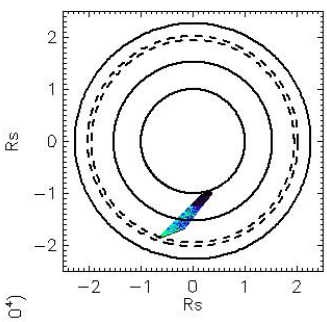

Observation Name:
UVIS_113RI_PREEQX001_VIMS
Observation Date:
2009_176_06_52_39
Observation Duration:
1400 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10⁴)
Pixel size (km)
Angle (degrees)
Total raw counts

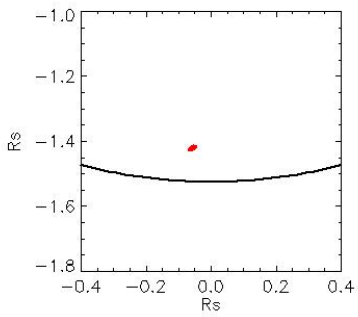

Observation Name:
UVIS_113RI_PREEQX001_VIMS
Observation Date:
2009_176_07_17_12
Observation Duration:
1400 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10⁴)
Pixel size (km)
Angle (degrees)
Total raw counts


Observation Name:
UVIS_113RI_PREEQX001_VIMS
Observation Date:
2009_176_07_41_45
Observation Duration:
1400 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C-Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts


Observation Name:
UVIS_113RI_PREEQX001_VIMS
Observation Date:
2009_176_08_06_18
Observation Duration:
1400 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C-Observation Point Distance (10⁴)
Pixel size (km)
Angle (degrees)
Total raw counts


Observation Name:
UVIS_113RI_PREEQX001_VIMS
Observation Date:
2009_176_08_30_51
Observation Duration:
1400 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts



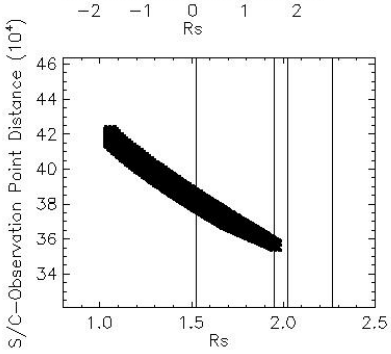


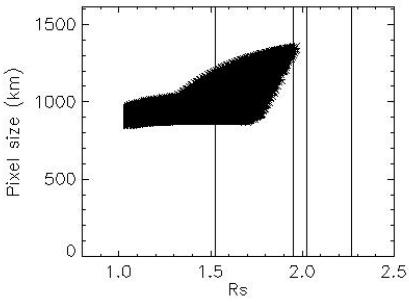
Observation Name:
UVIS_113RI_PREEQX001_VIMS

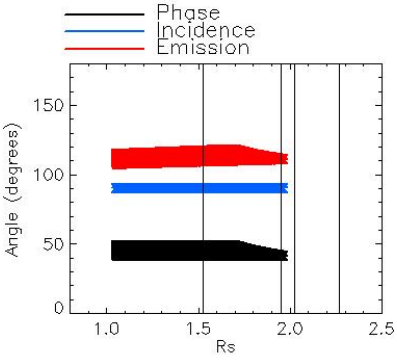
Observation Date:
2009_176_08_55_24

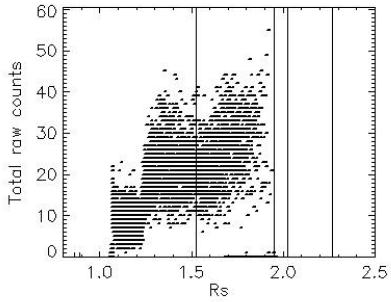
Observation Duration:
6200 S

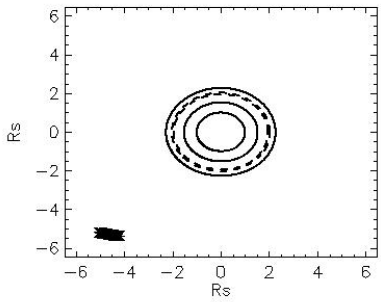
Integration time = 100 S

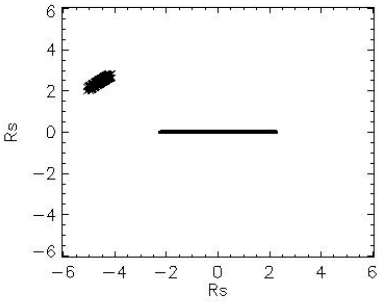


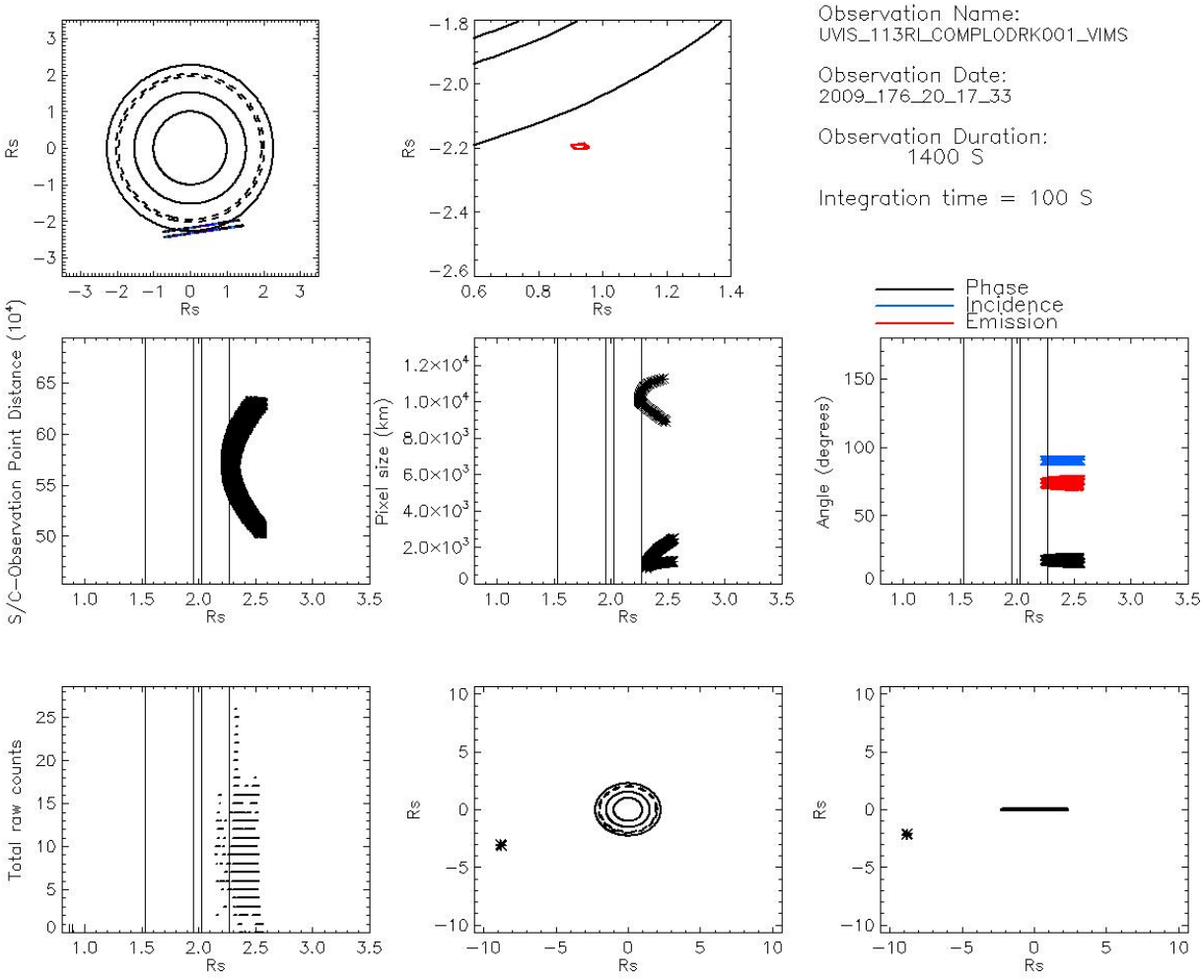


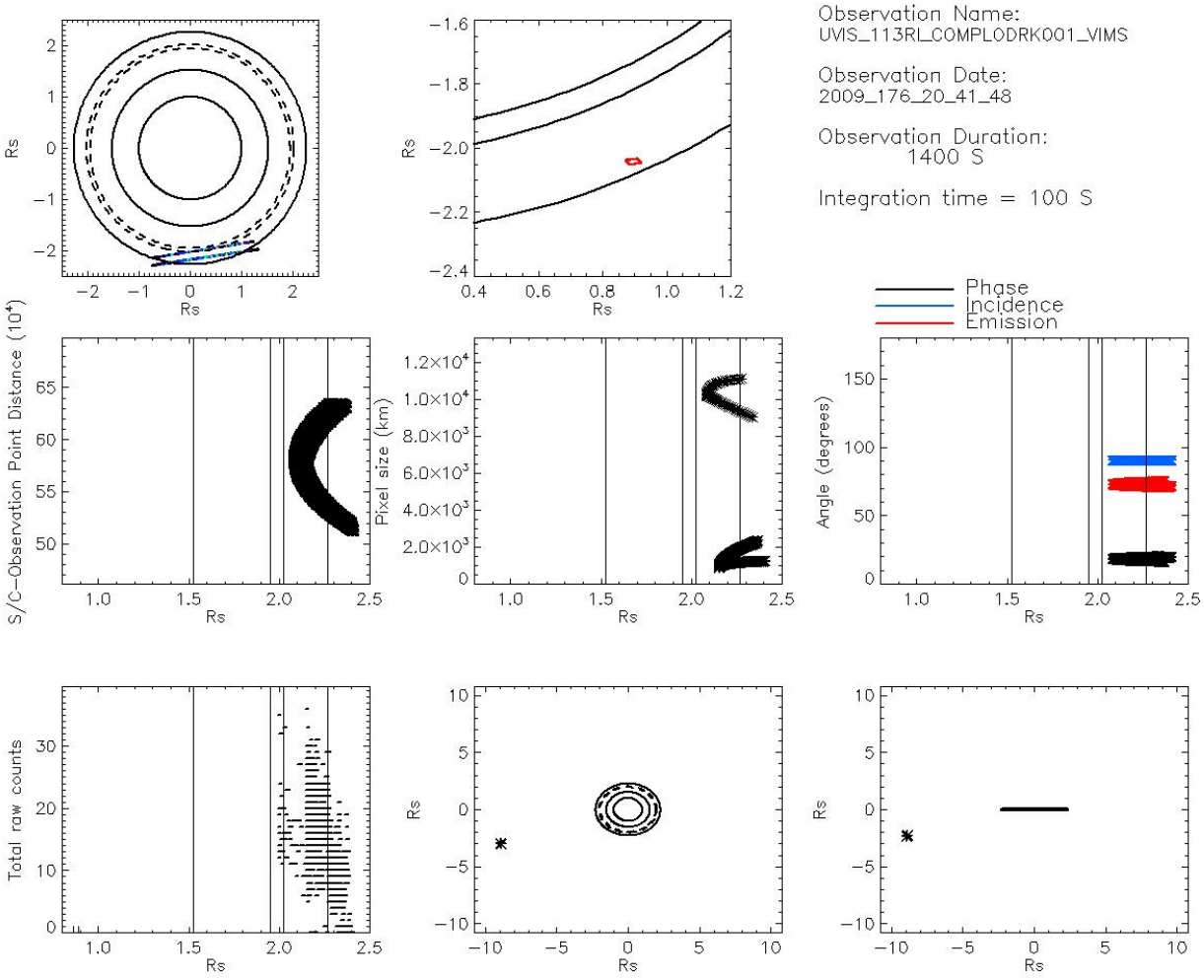


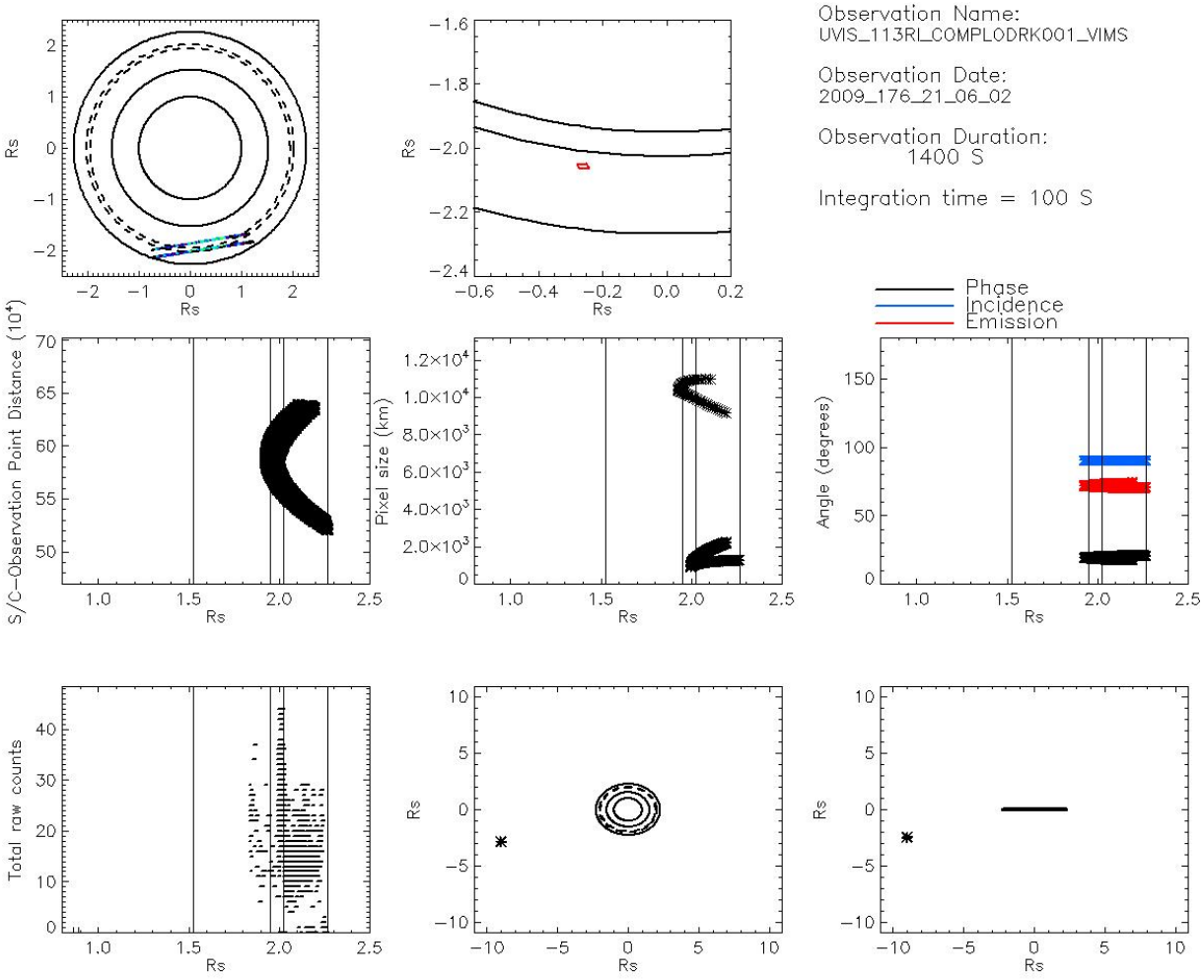


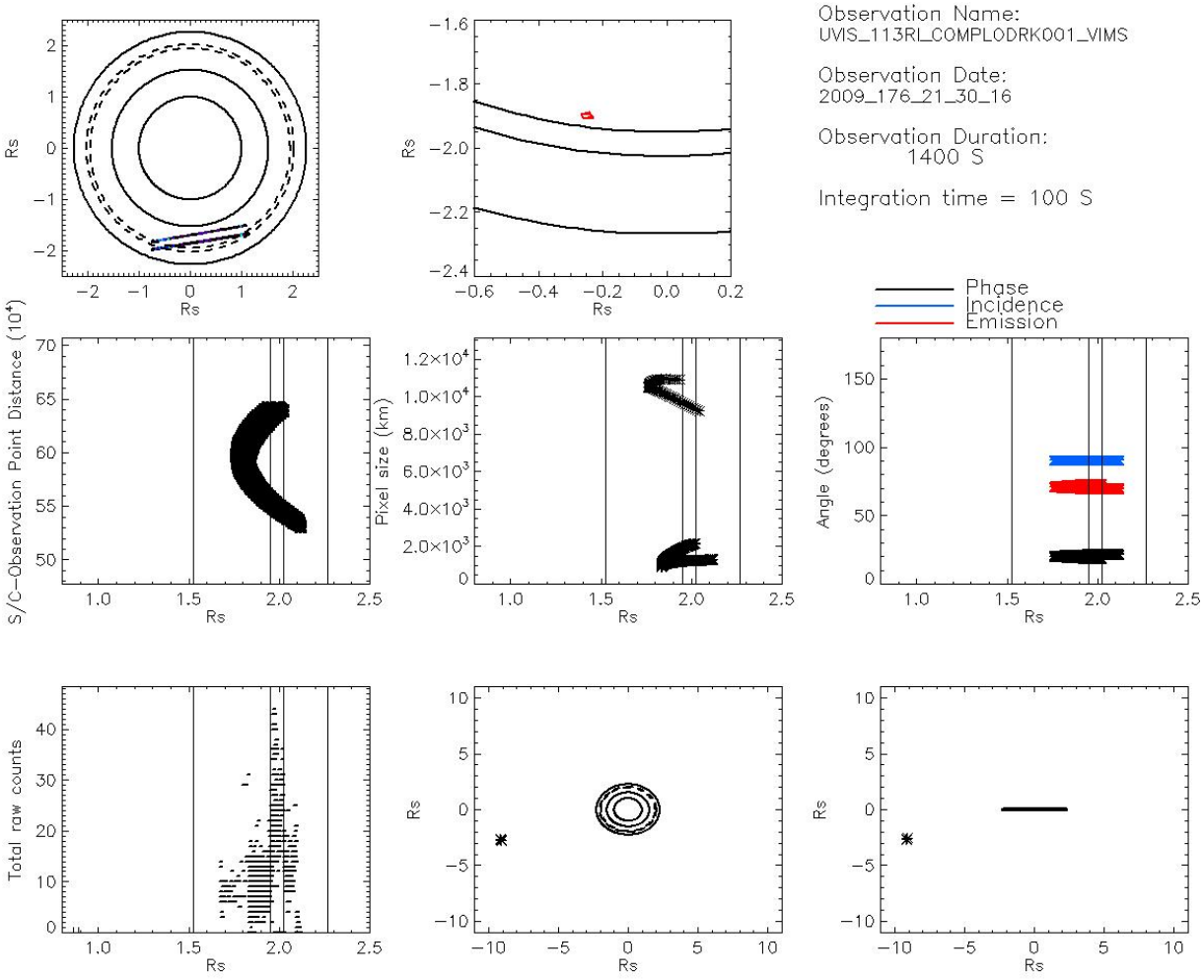


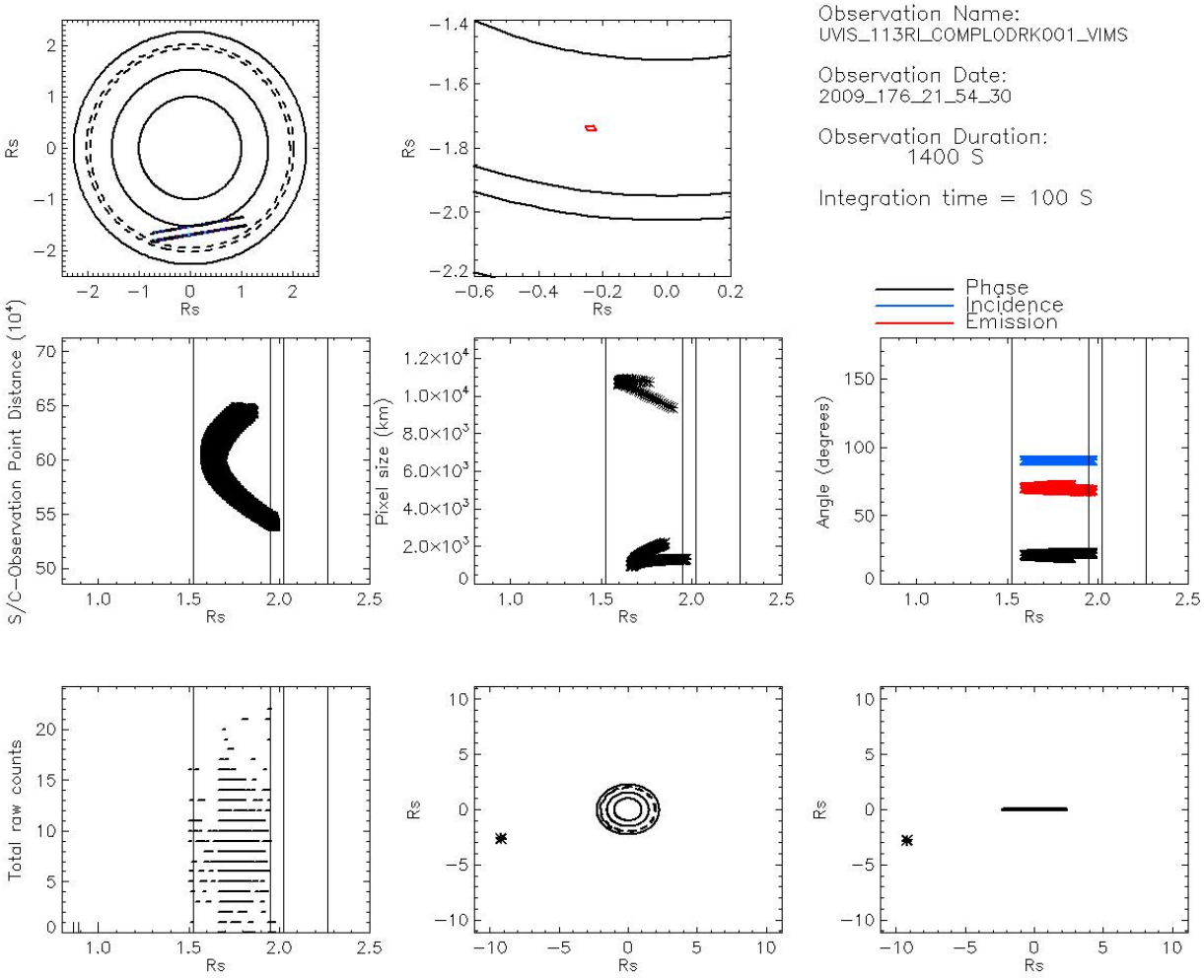


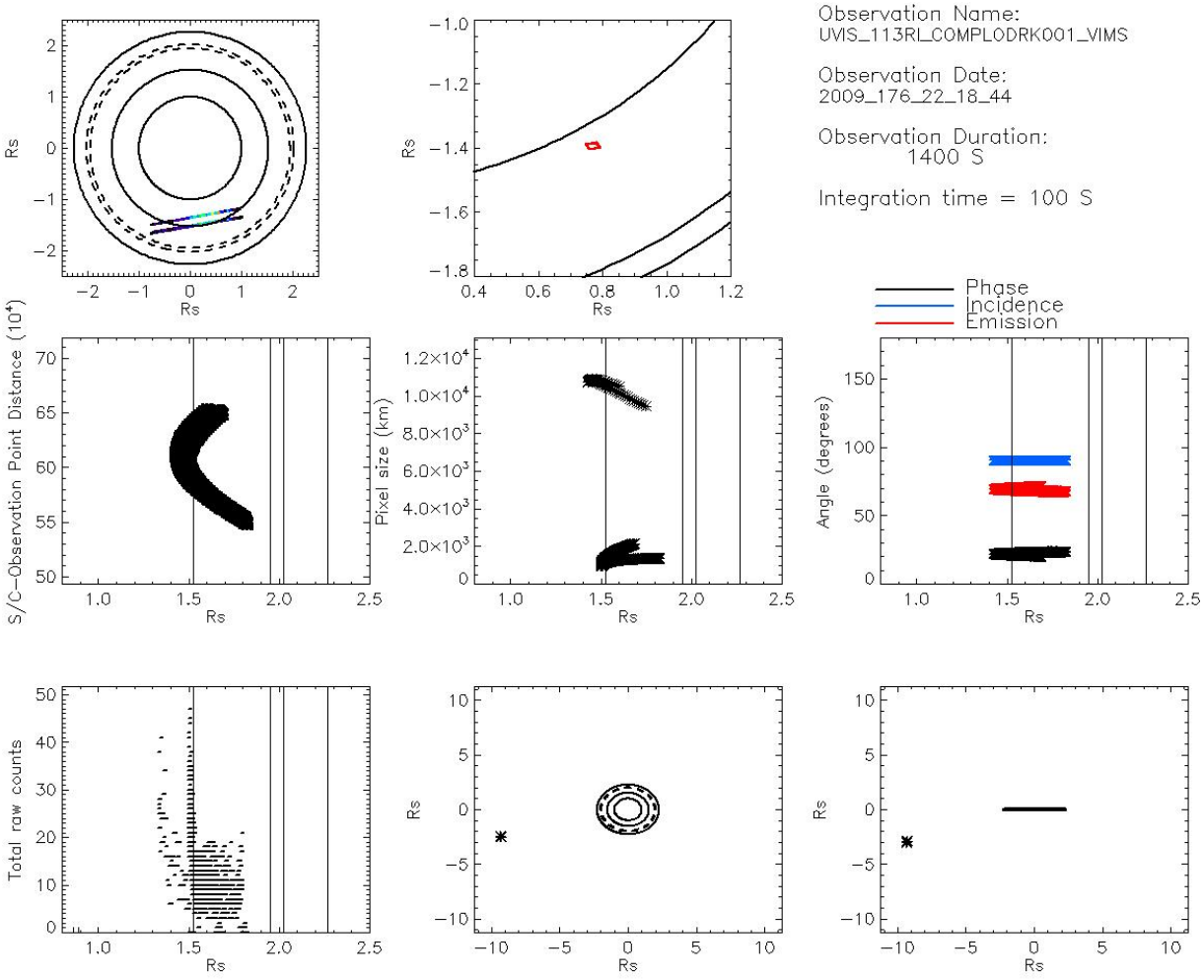

Observation Name:
UVIS_113RI_COMPLODRK001_VIMS
Observation Date:
2009_176_20_17_33
Observation Duration:
1400 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C-Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts

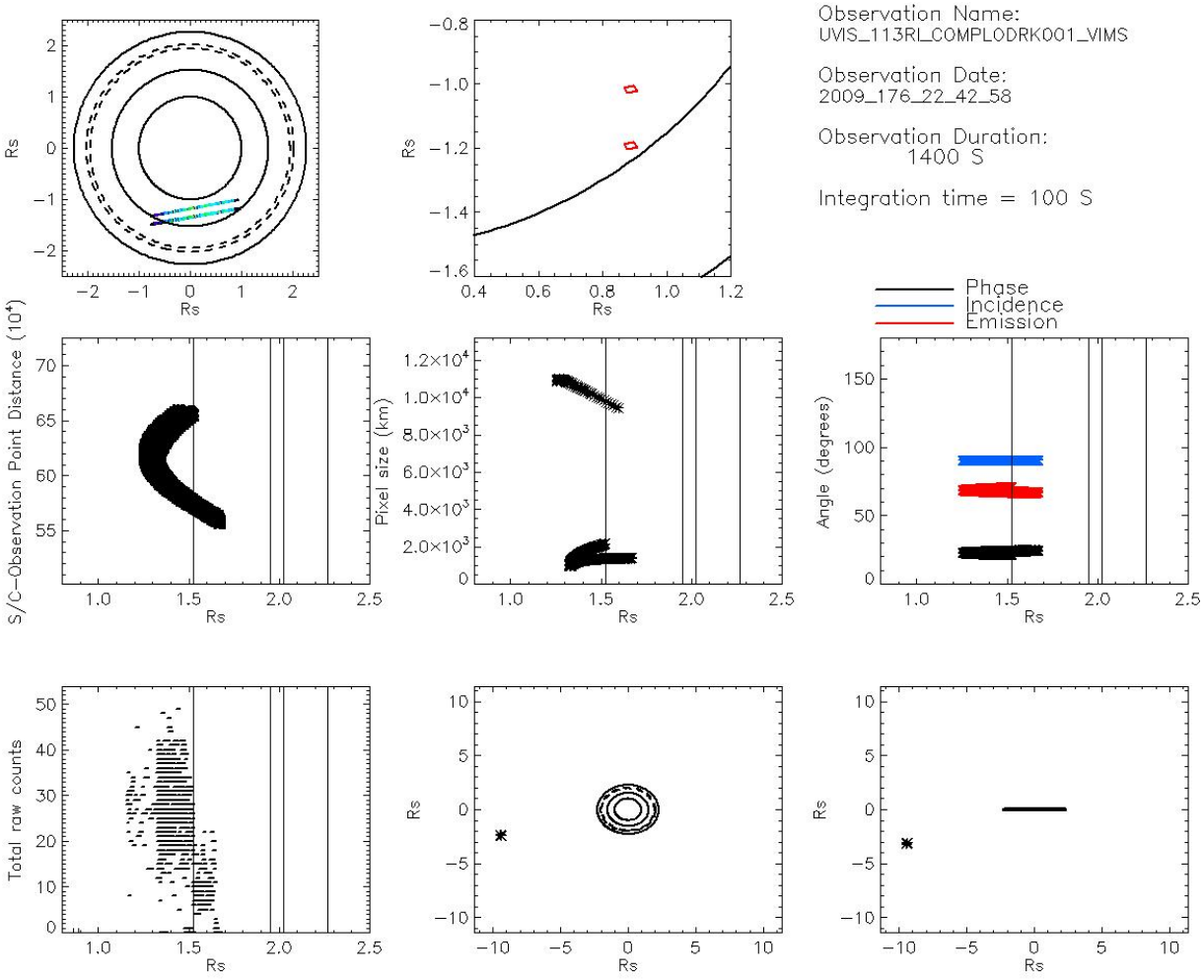

Observation Name:
UVIS_113RI_COMPLODRK001_VIMS
Observation Date:
2009_176_20_41_48
Observation Duration:
1400 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts

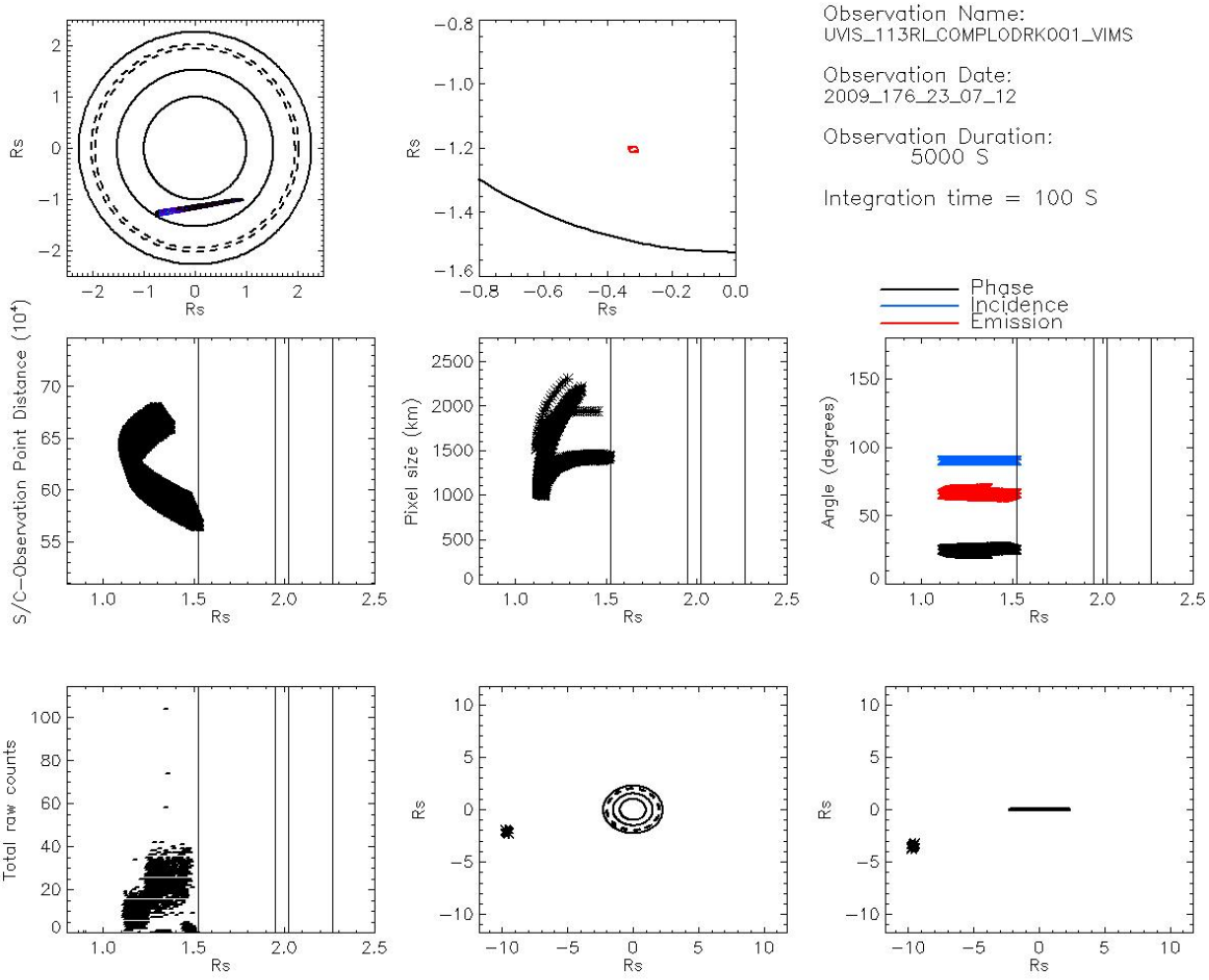

Observation Name:
UVIS_113RI_COMPLODRK001_VIMS
Observation Date:
2009_176_21_06_02
Observation Duration:
1400 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts

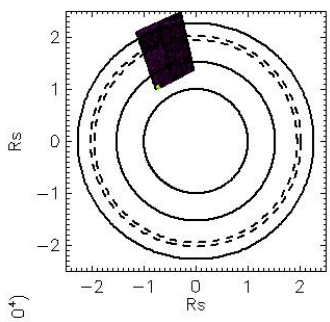

Observation Name:
UVIS_113RI_COMPLODRK001_VIMS
Observation Date:
2009_176_21_30_16
Observation Duration:
1400 S
Integration time = 100 S
Phase
Incidence
Emission
S/C–Observation Point Distance (10⁴)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs

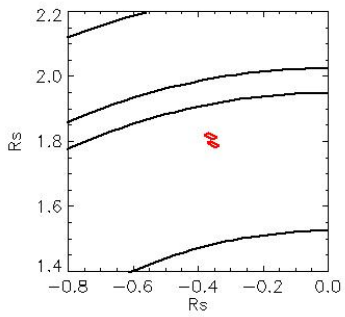

Observation Name:
UVIS_113RI_COMPLODRK001_VIMS
Observation Date:
2009_176_21_54_30
Observation Duration:
1400 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10⁴)
Pixel size (km)
Angle (degrees)
Total raw counts


Observation Name:
UVIS_113RI_COMPLODRK001_VIMS
Observation Date:
2009_176_22_18_44
Observation Duration:
1400 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts


Observation Name:
UVIS_113RI_COMPLODRK001_VIMS
Observation Date:
2009_176_22_42_58
Observation Duration:
1400 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts


Observation Name:
UVIS_113RI_COMPLODRK001_VIMS
Observation Date:
2009_176_23_07_12
Observation Duration:
5000 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts



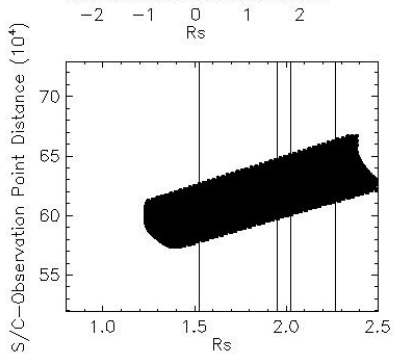


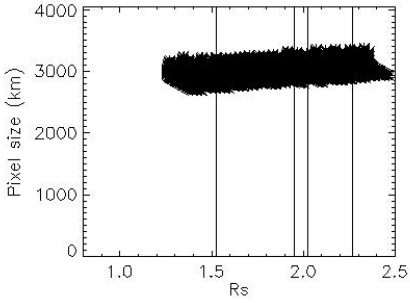
Observation Name:
UVIS_114RI_EQLBS001_CIRS

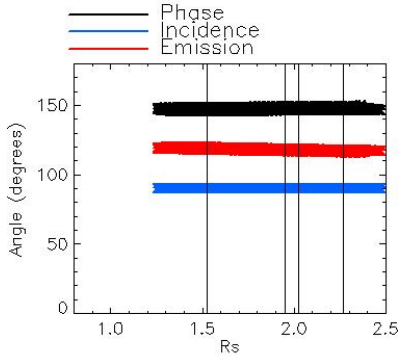
Observation Date:
2009_191_06_01_33

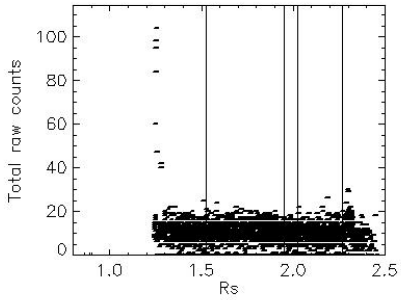
Observation Duration:
4300 S

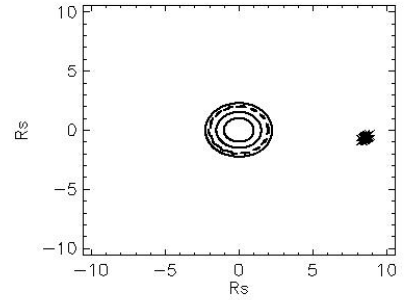
Integration time = 100 S

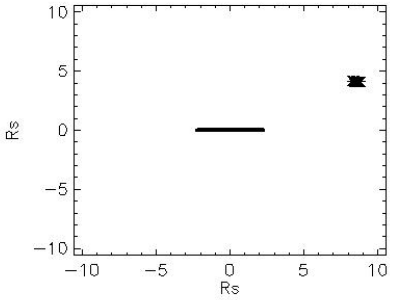


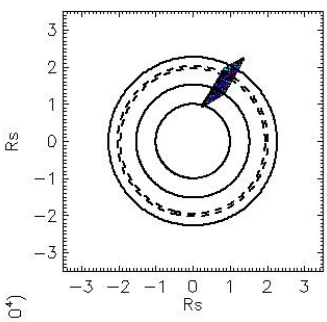


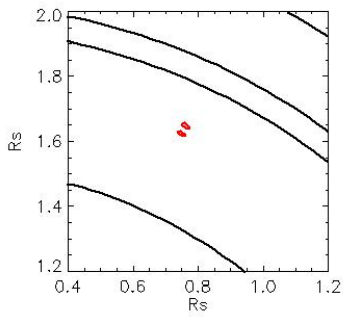










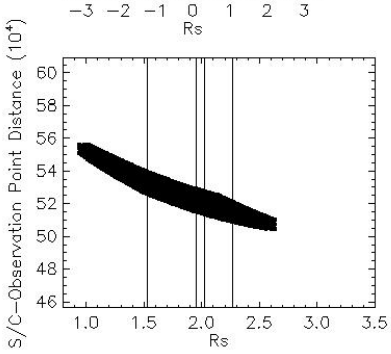


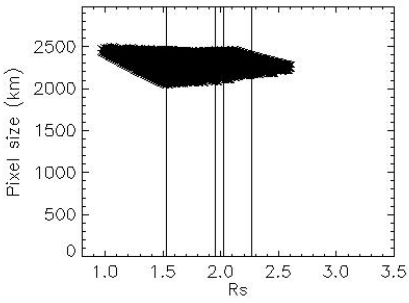
Observation Name:
UVIS_114RI_EQLBS001_CIRS

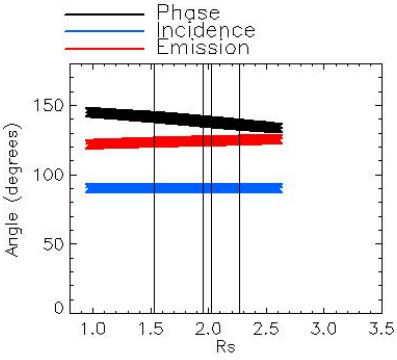
Observation Date:
2009_191_07_20_33

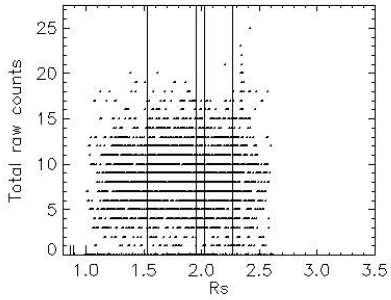
Observation Duration:
4300 S

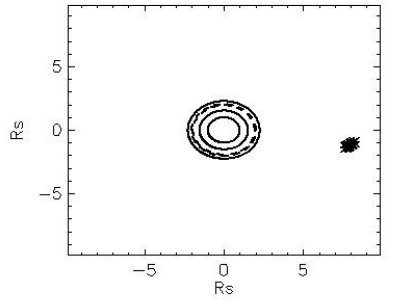
Integration time = 100 S

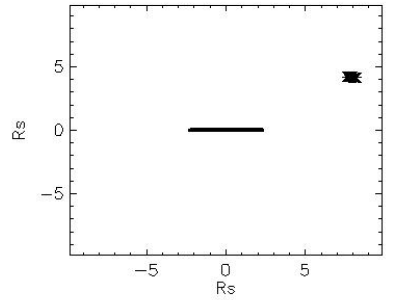


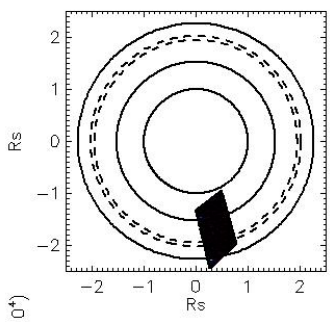


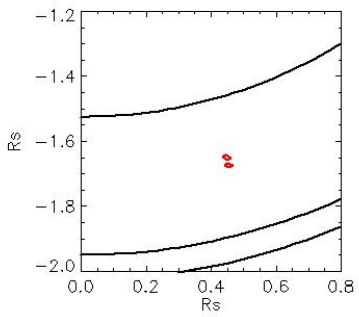










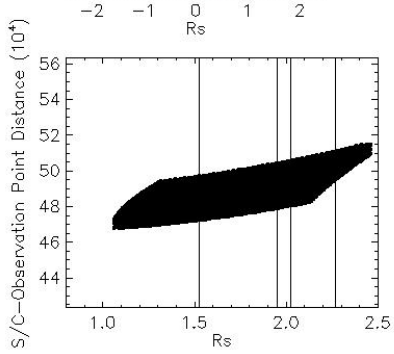


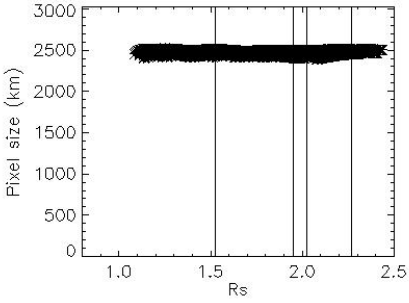
Observation Name:
UVIS_114RI_EQLBS001_CIRS

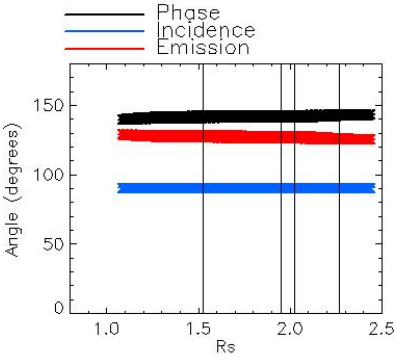
Observation Date:
2009_191_08_41_33

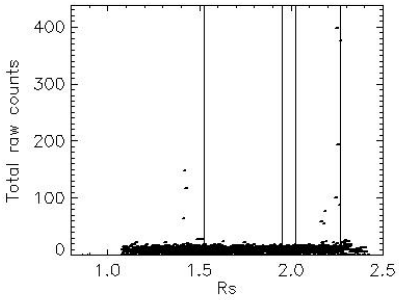
Observation Duration:
4200 S

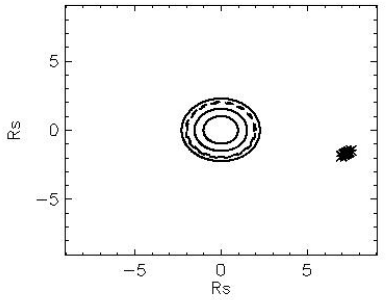
Integration time = 100 S

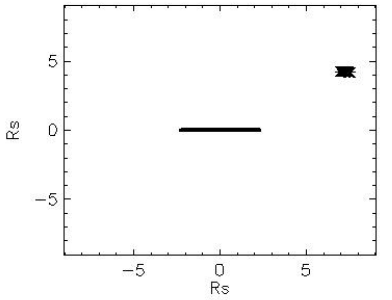


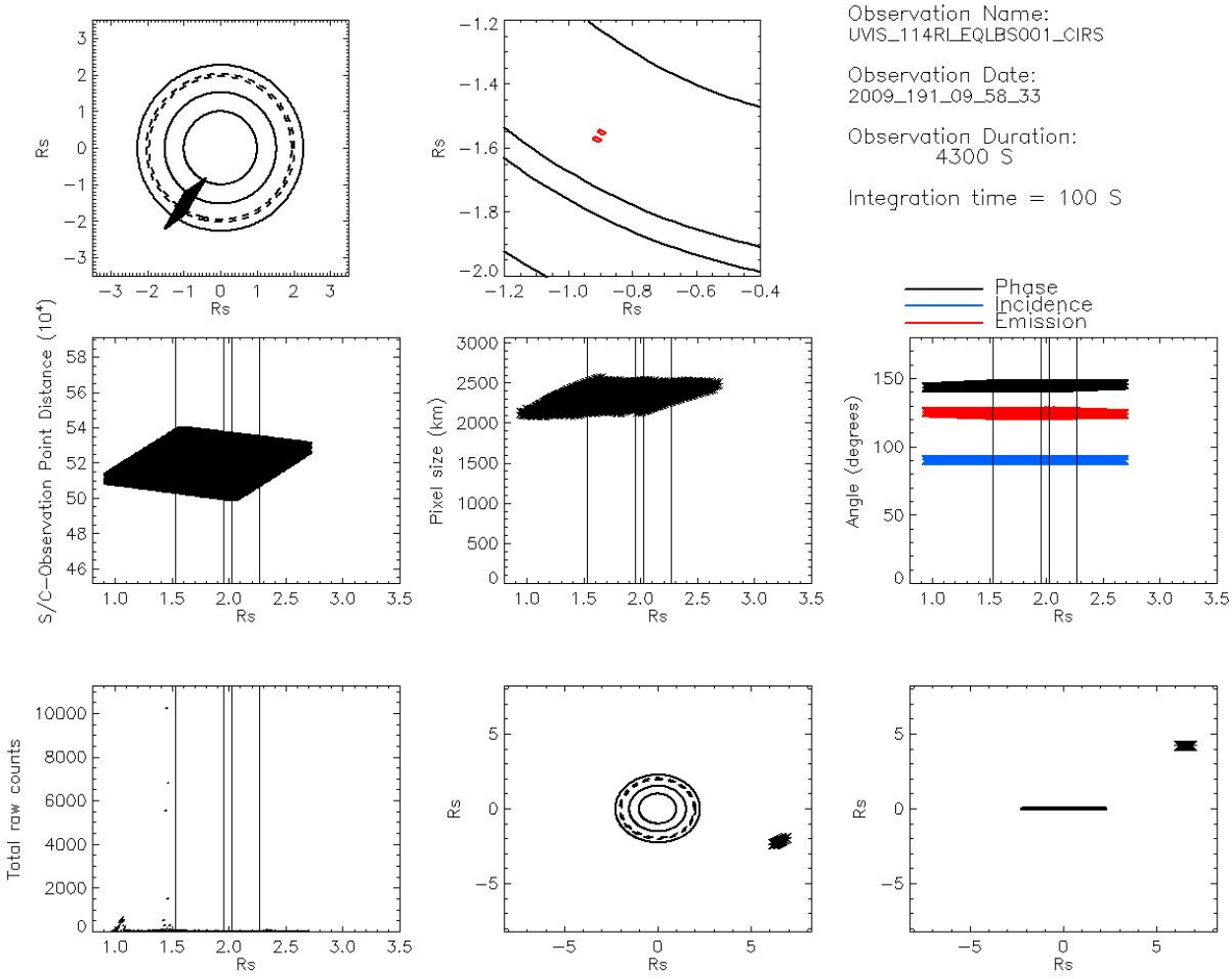


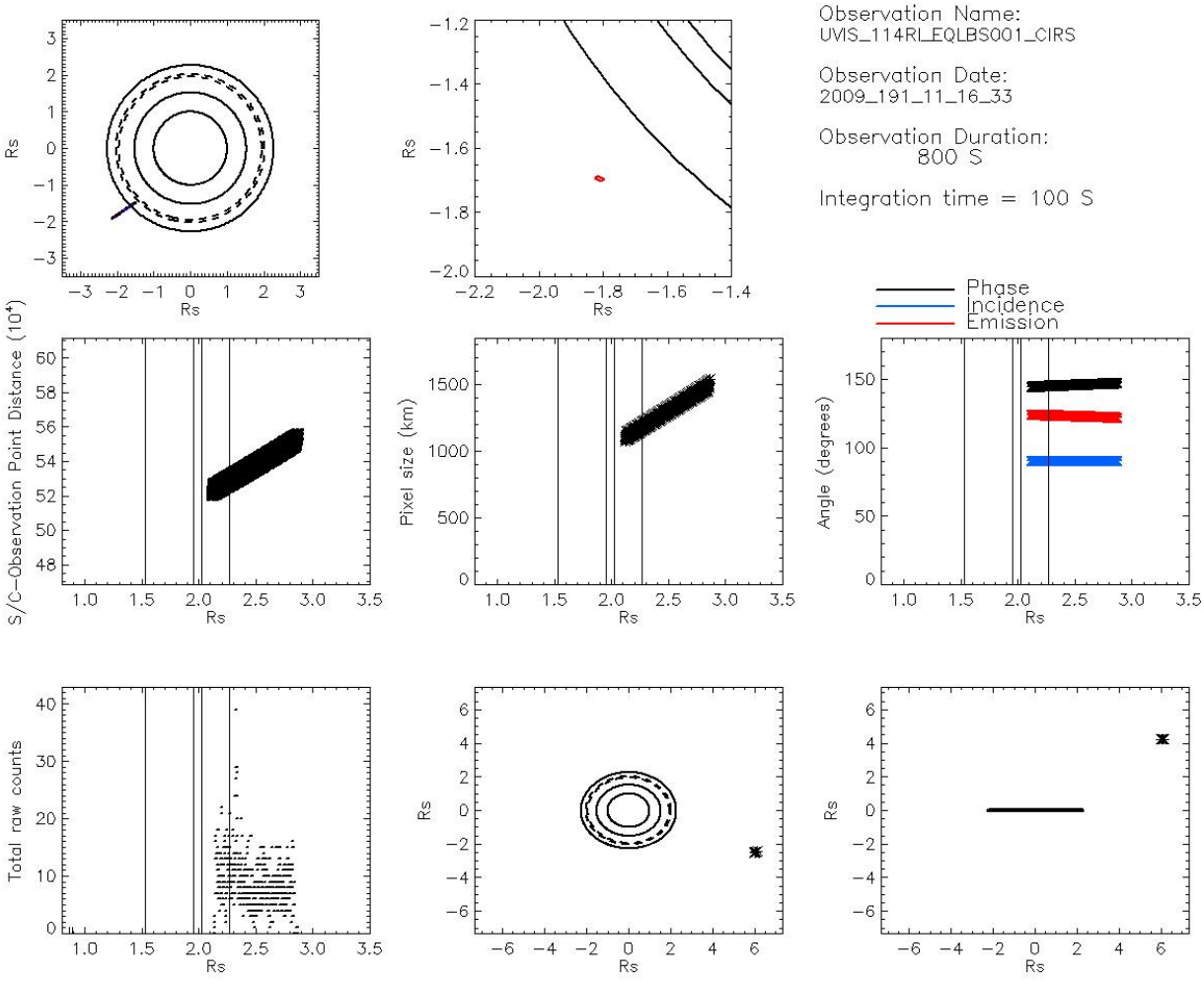


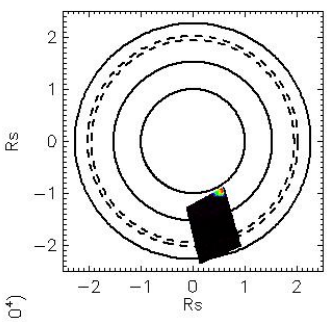


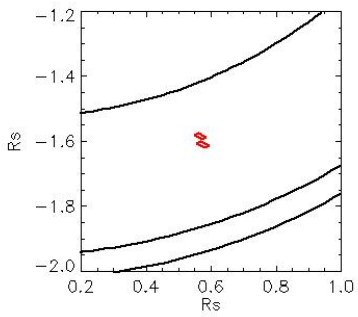





Observation Name:
UVIS_114RI_EQLBS001_CIRS
Observation Date:
2009_191_09_58_33
Observation Duration:
4300 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts


Observation Name:
UVIS_114RI_EQLBS001_CIRS
Observation Date:
2009_191_11_16_33
Observation Duration:
800 S
Integration time = 100 S
Phase
Incidence
Emission
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs



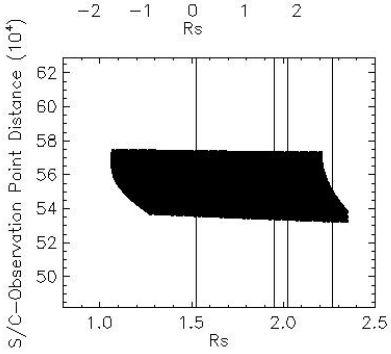


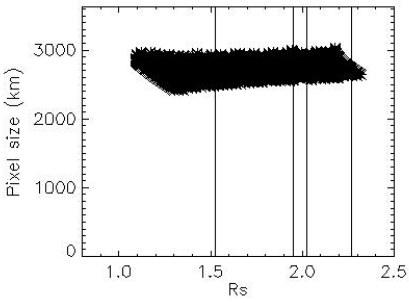
Observation Name:
UVIS_114RI_EQLBS002_CIRS

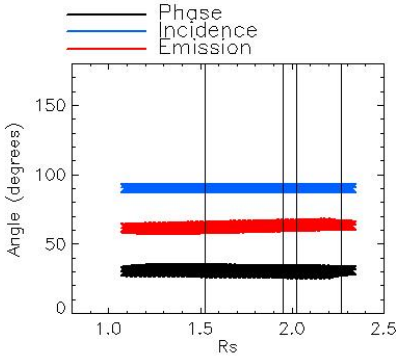
Observation Date:
2009_192_10_49_32

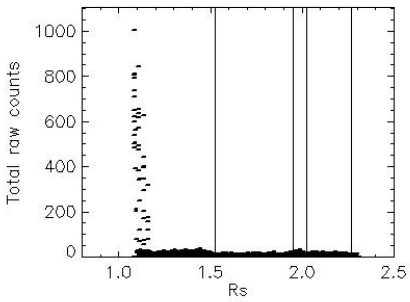
Observation Duration:
4300 S

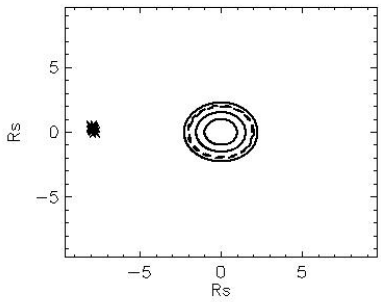
Integration time = 100 S

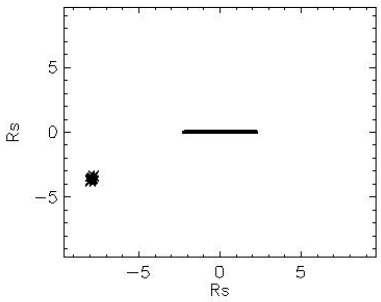


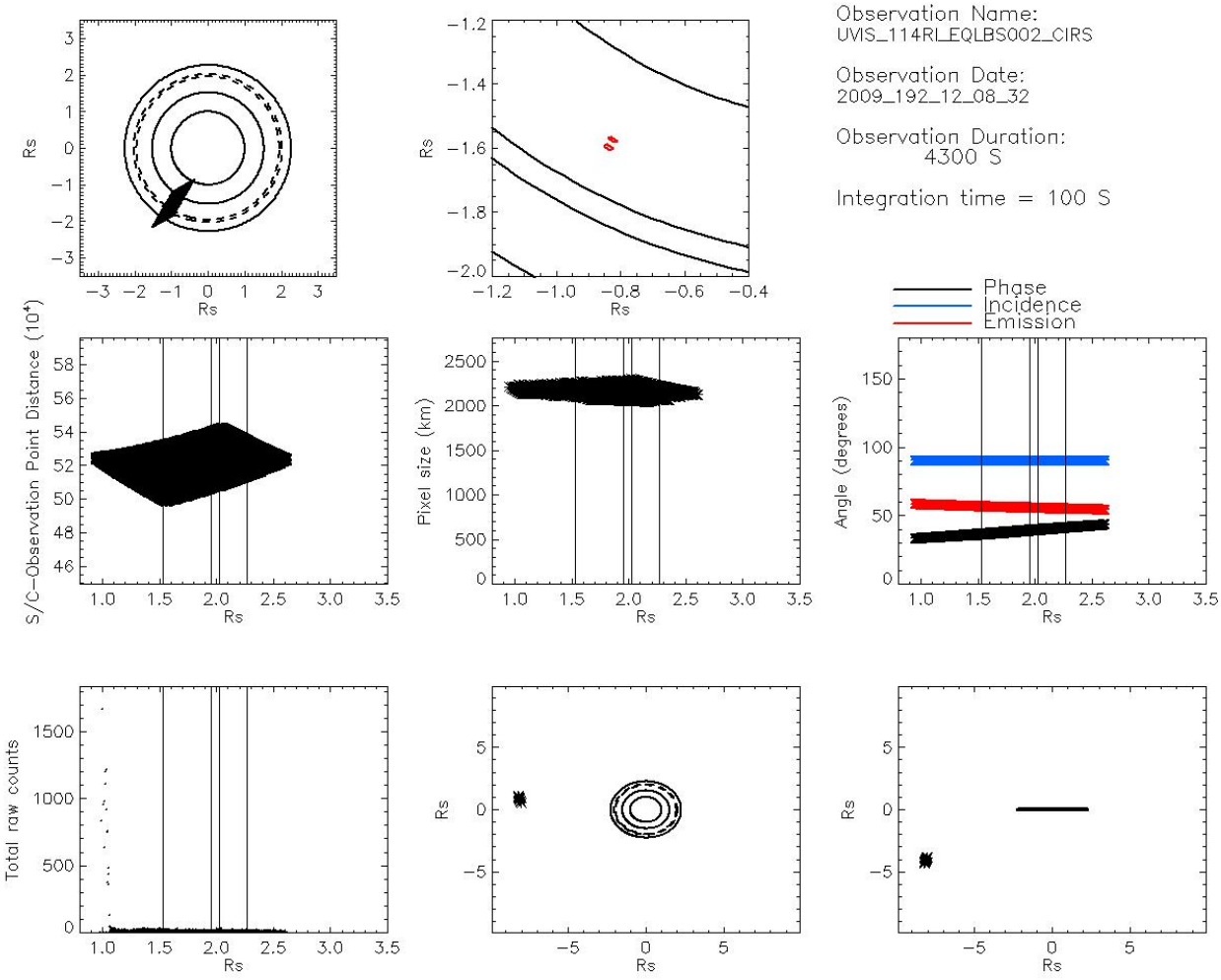


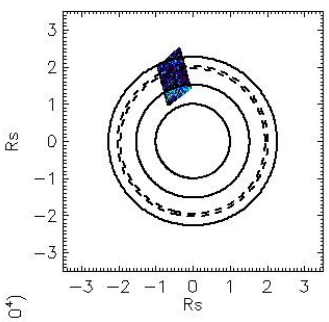


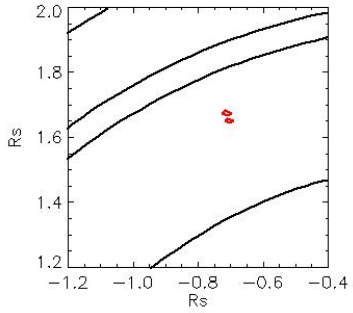







Observation Name:
UVIS_114RI_EQLBS002_CIRS
Observation Date:
2009_192_12_08_32
Observation Duration:
4300 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts



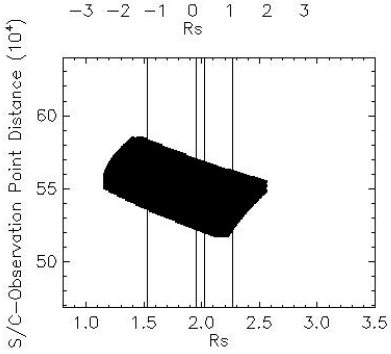


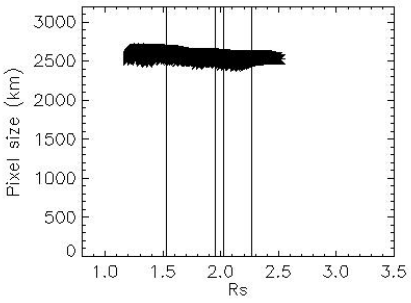
Observation Name:
UVIS_114RI_EQLBS002_CIRS

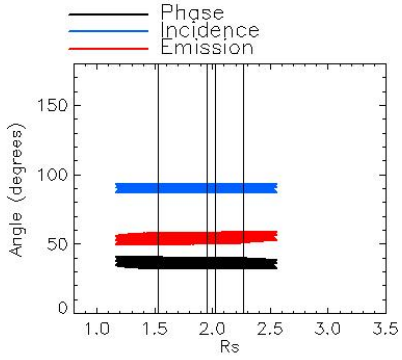
Observation Date:
2009_192_13_29_32

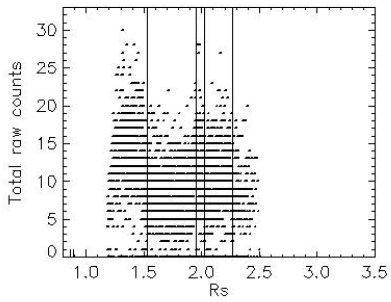
Observation Duration:
4200 S

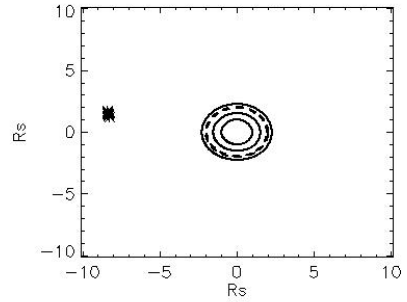
Integration time = 100 S

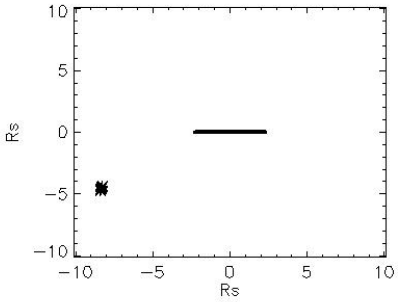


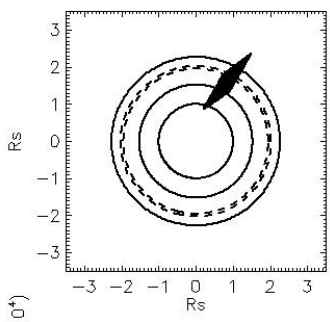


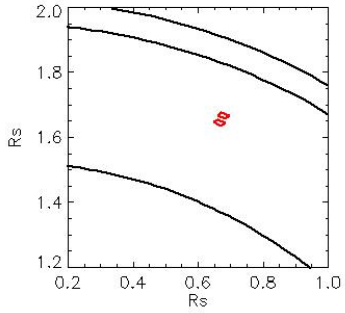










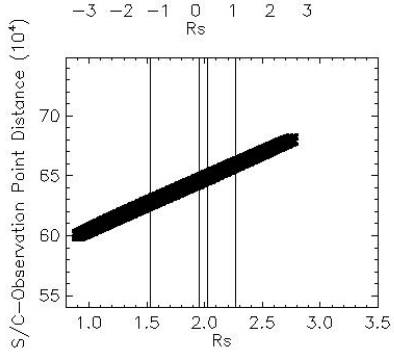


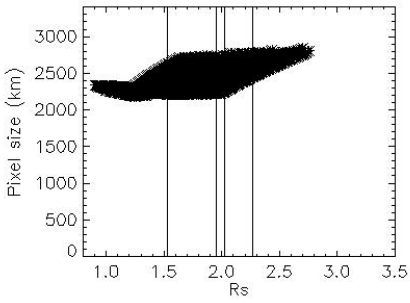
Observation Name:
UVIS_114RI_EQLBS002_CIRS

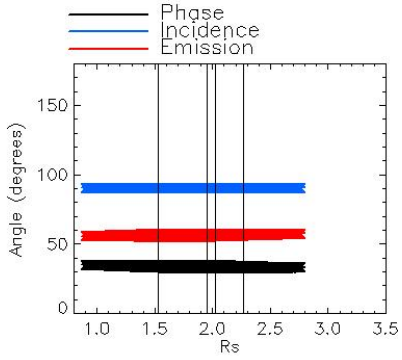
Observation Date:
2009_192_14_46_32

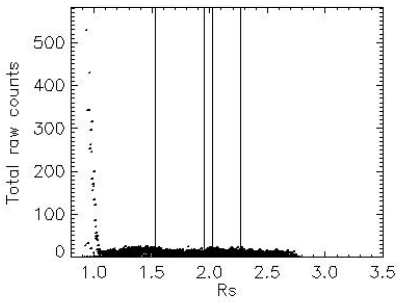
Observation Duration:
4300 S

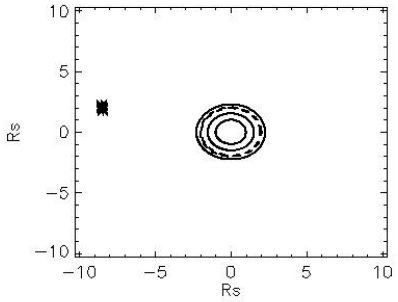
Integration time = 100 S

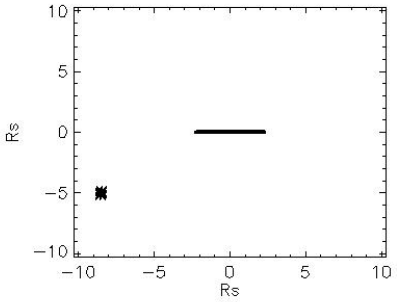


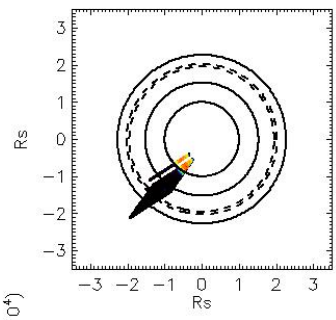


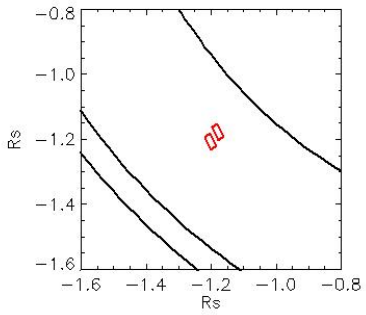










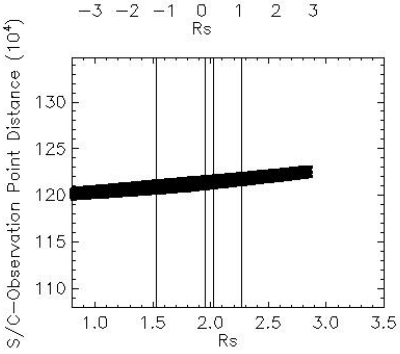


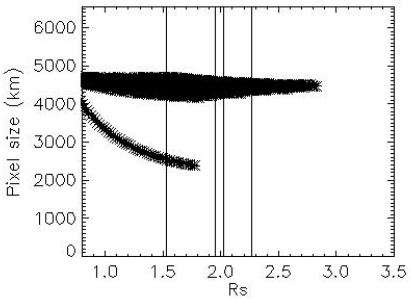
Observation Name:
UVIS_114RI_TMAPN45MP001_CIRS

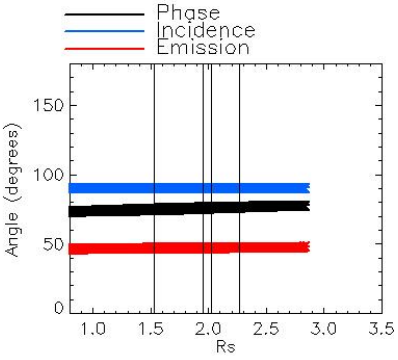
Observation Date:
2009_193_21_31_32

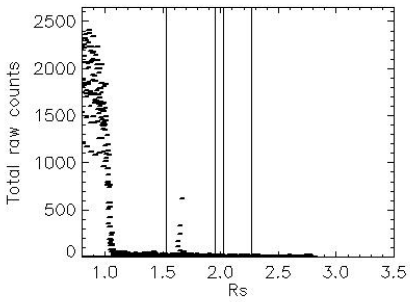
Observation Duration:
3000 S

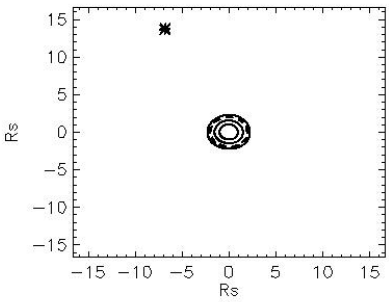
Integration time = 100 S

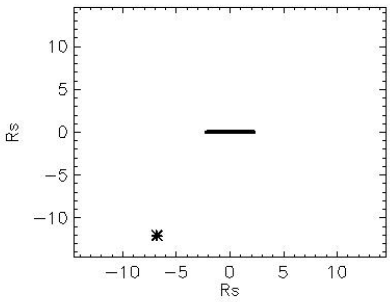


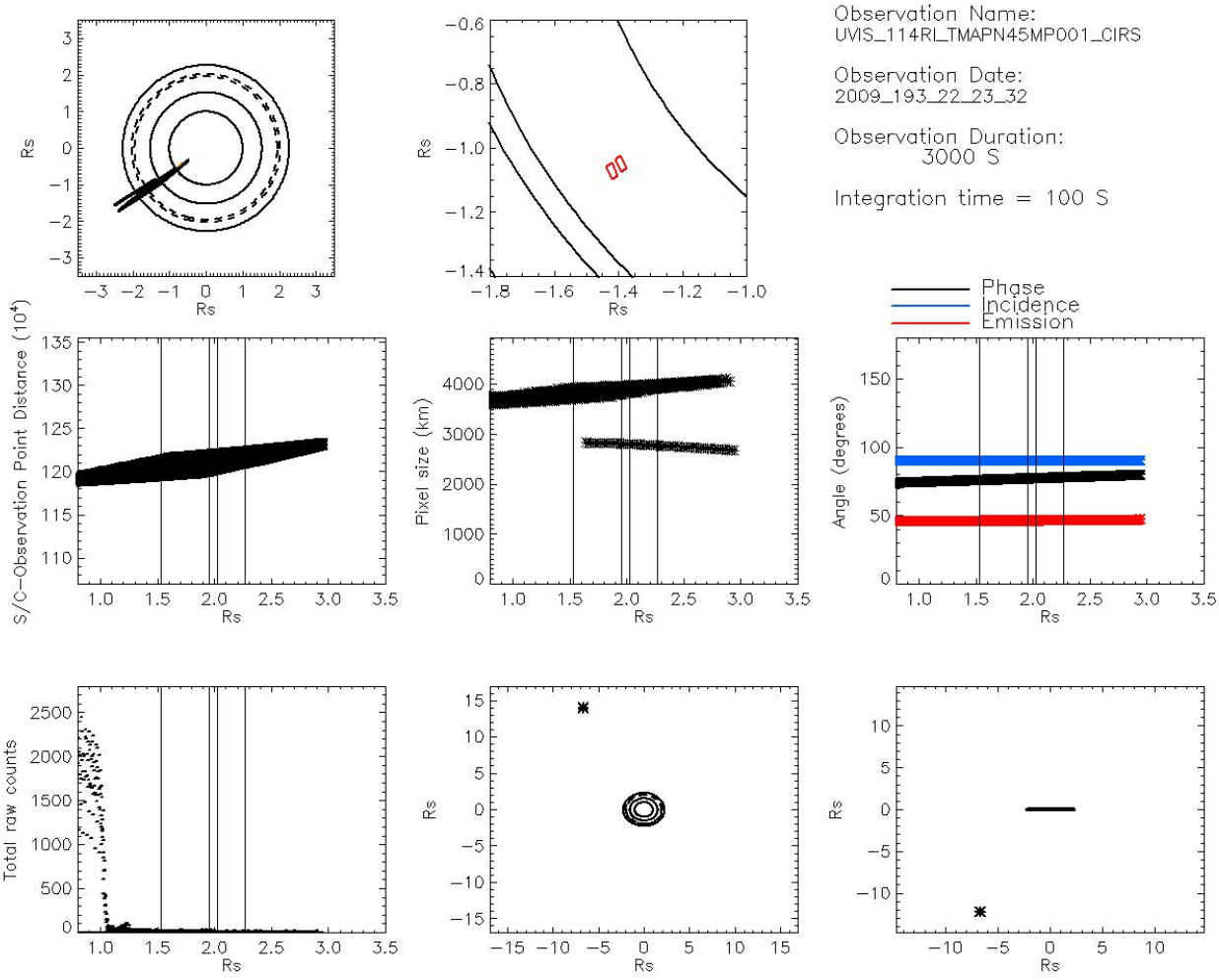


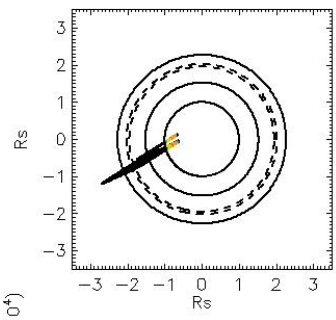


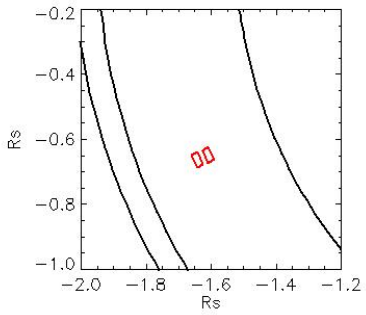







Observation Name:
UVIS_114RI_TMAPN45MP001_CIRS
Observation Date:
2009_193_22_23_32
Observation Duration:
3000 S
Integration time = 100 S
Phase
Incidence
Emission
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs



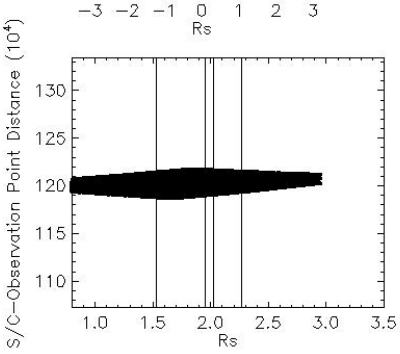


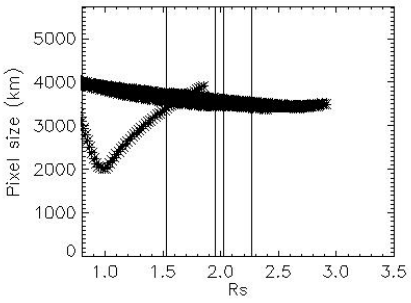
Observation Name:
UVIS_114RI_TMAPN45MP001_CIRS

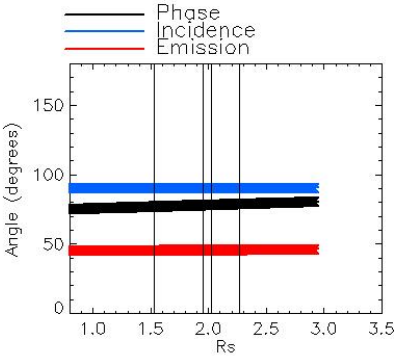
Observation Date:
2009_193_23_15_32

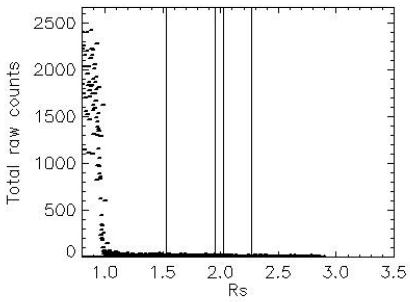
Observation Duration:
3000 S

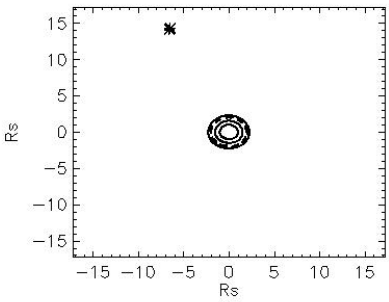
Integration time = 100 S

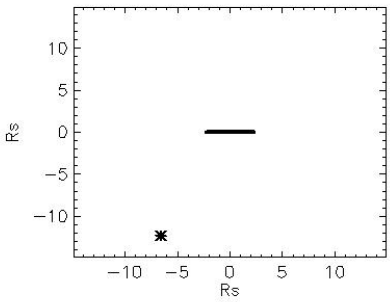


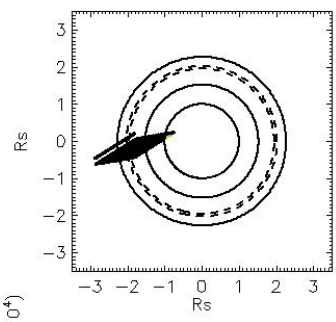


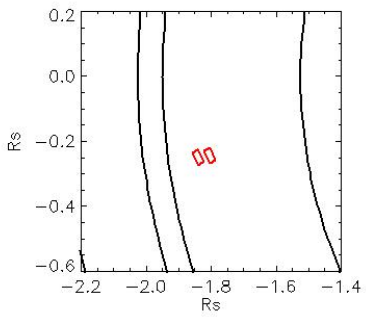










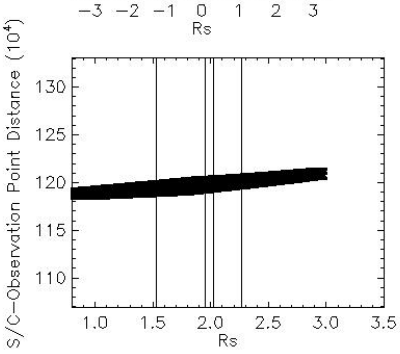


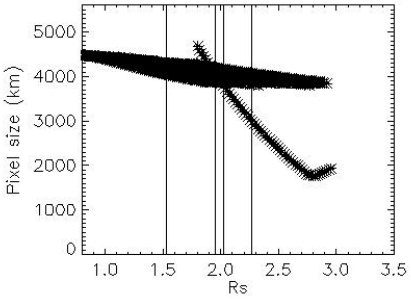
Observation Name:
UVIS_114RI_TMAPN45MP001_CIRS

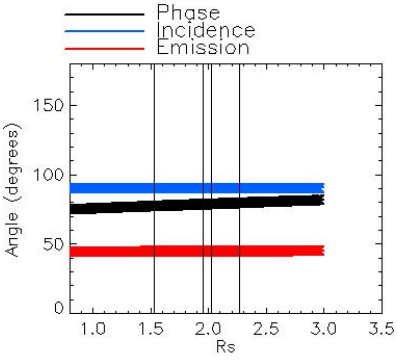
Observation Date:
2009_194_00_07_32

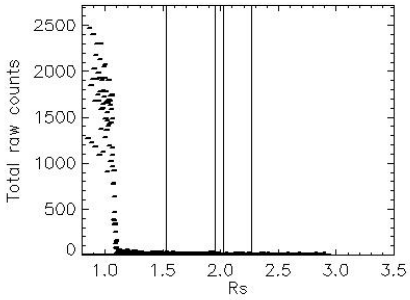
Observation Duration:
3000 S

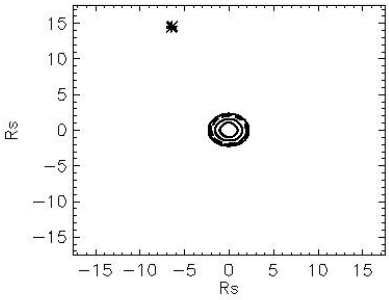
Integration time = 100 S

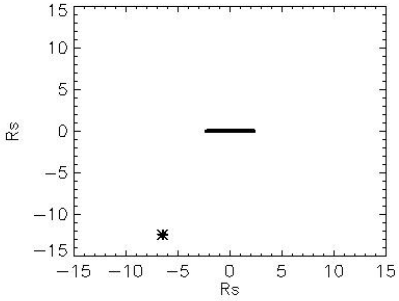


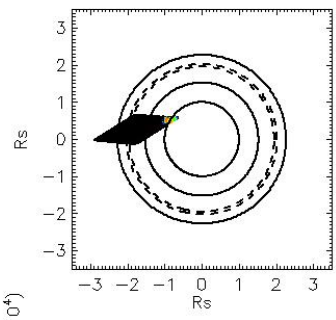


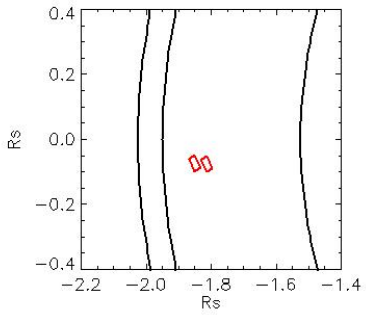










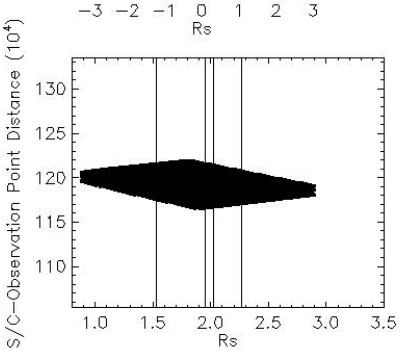


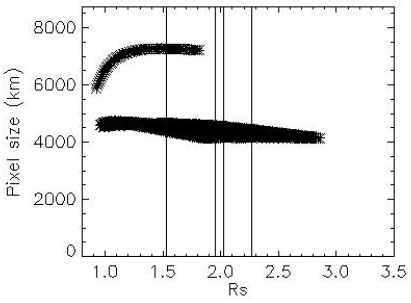
Observation Name:
UVIS_114RI_TMAPN45MP001_CIRS

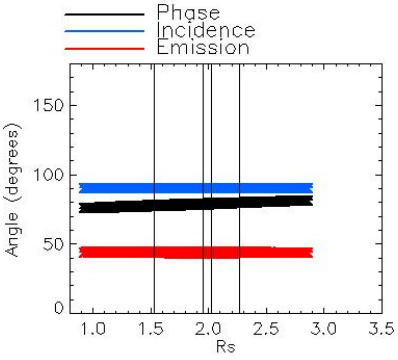
Observation Date:
2009_194_00_59_32

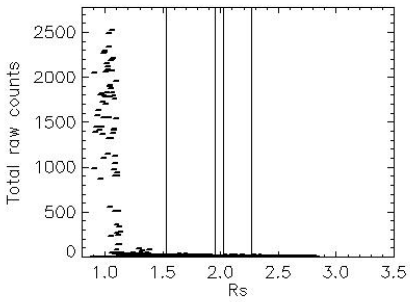
Observation Duration:
3000 S

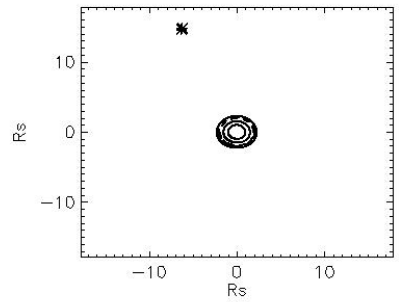
Integration time = 100 S

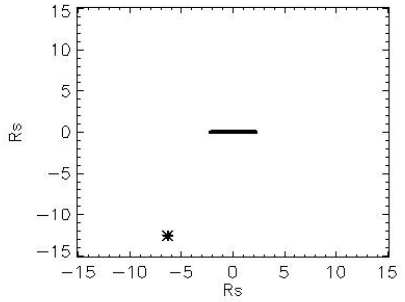


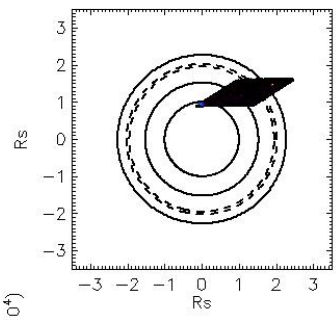


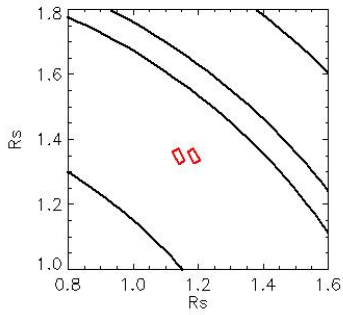










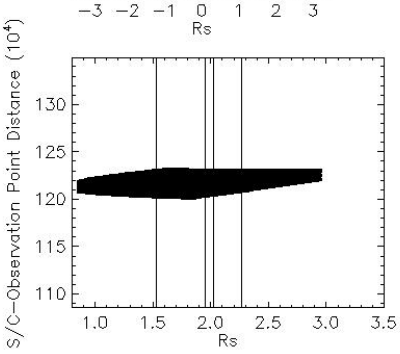


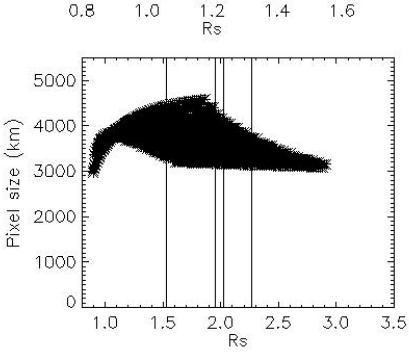
Observation Name:
UVIS_114RI_TMAPN45MP001_CIRS

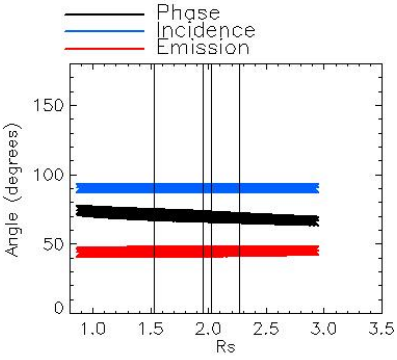
Observation Date:
2009_194_01_54_32

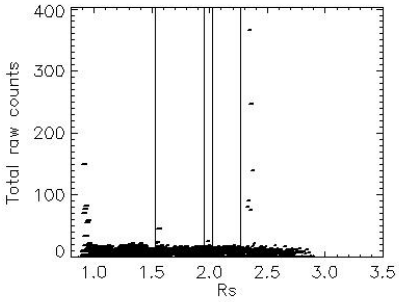
Observation Duration:
3400 S

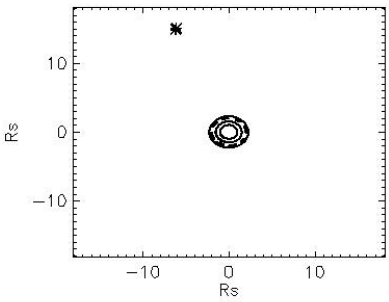
Integration time = 100 S

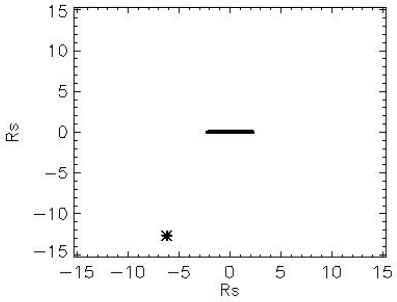


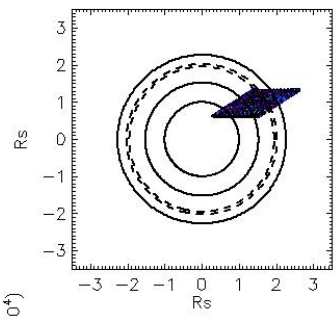


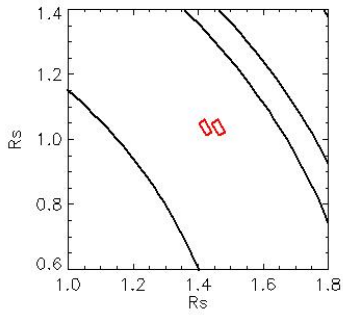










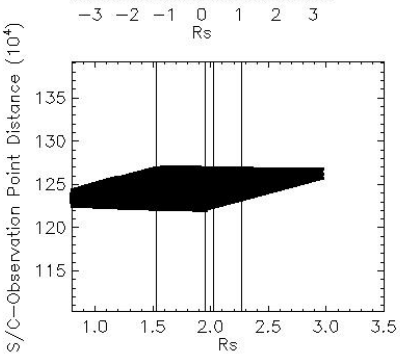


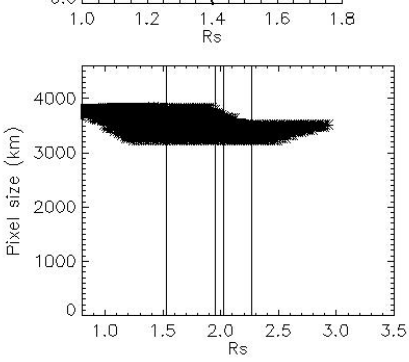
Observation Name:
UVIS_114RI_TMAPN45MP001_CIRS

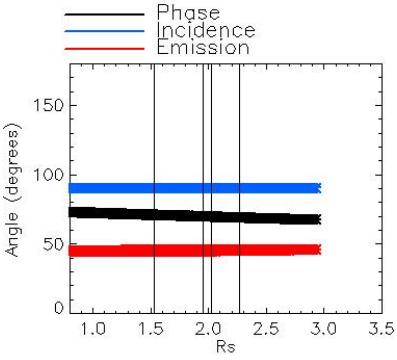
Observation Date:
2009_194_02_53_32

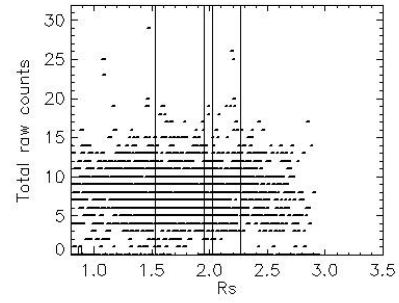
Observation Duration:
3100 S

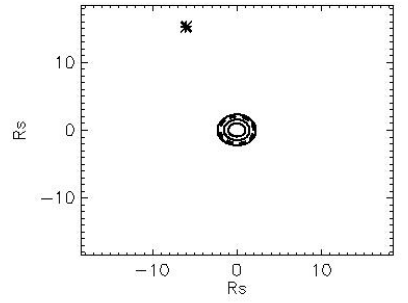
Integration time = 100 S

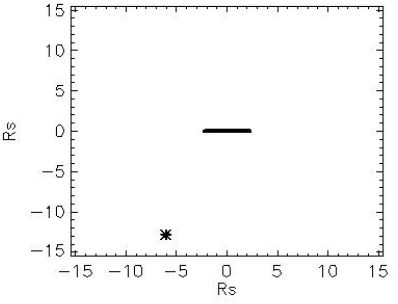


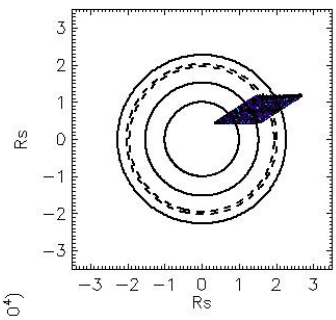


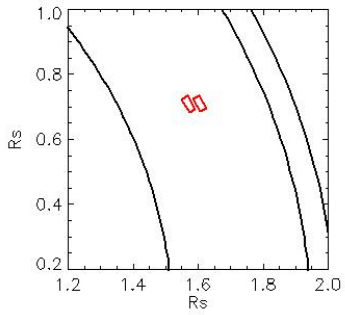










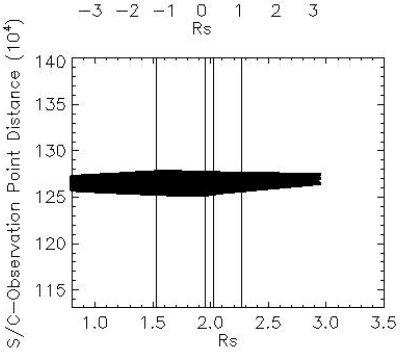


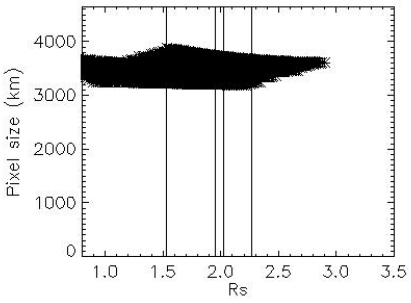
Observation Name:
UVIS_114RI_TMAPN45MP001_CIRS

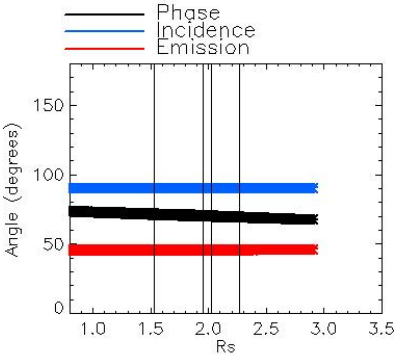
Observation Date:
2009_194_03_47_32

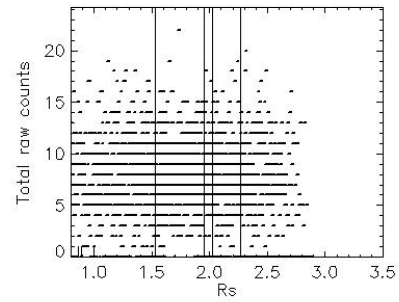
Observation Duration:
3200 S

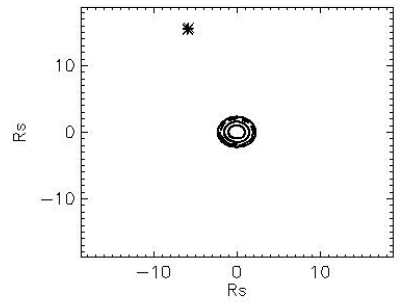
Integration time = 100 S

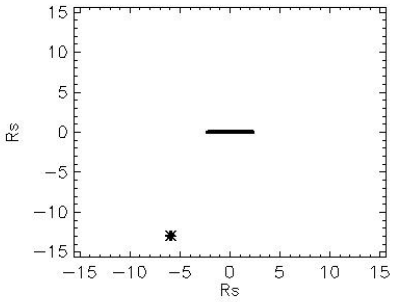


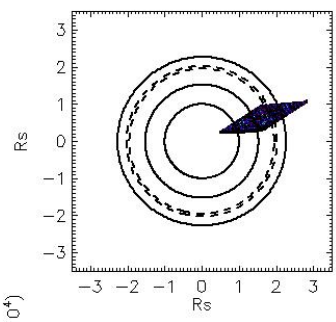


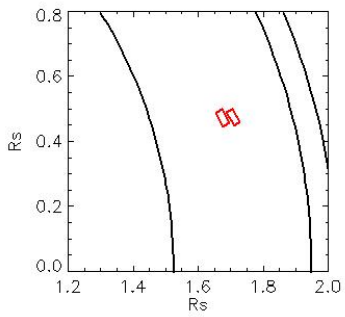










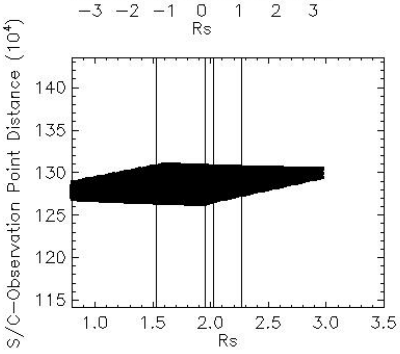


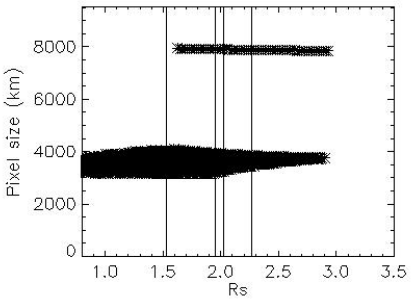
Observation Name:
UVIS_114RI_TMAPN45MP001_CIRS

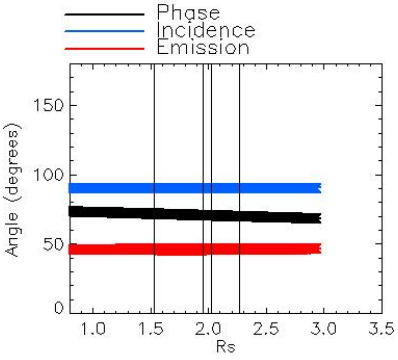
Observation Date:
2009_194_04_43_32

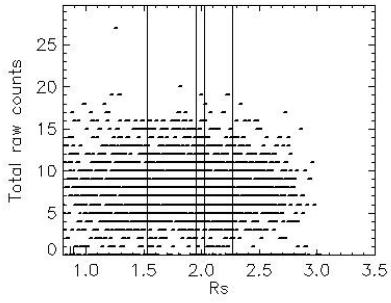
Observation Duration:
3300 S

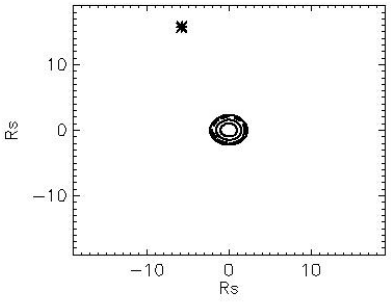
Integration time = 100 S

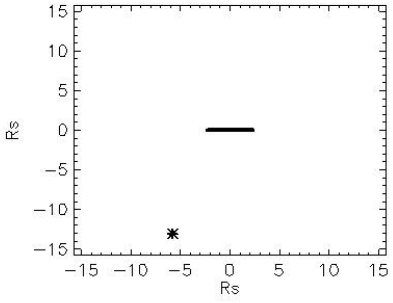


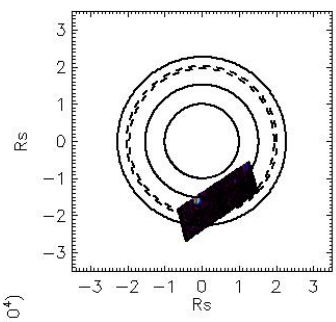


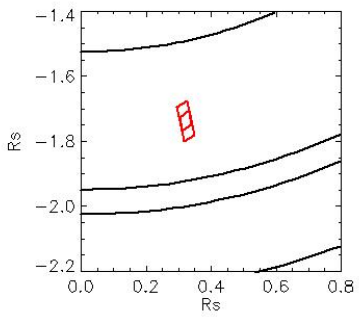










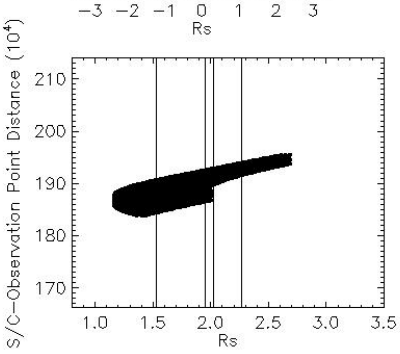


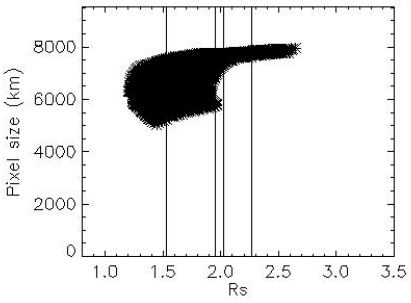
Observation Name:
UVIS_114RI_TMAPN30MP001_CIRS

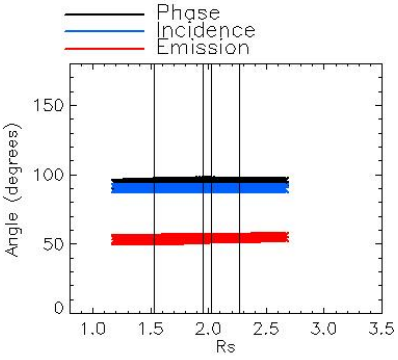
Observation Date:
2009_196_08_07_33

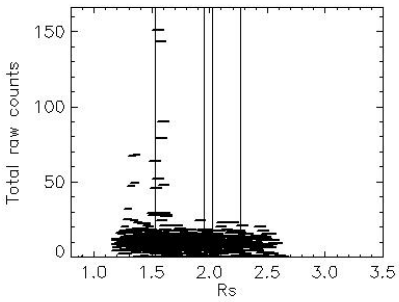
Observation Duration:
2500 S

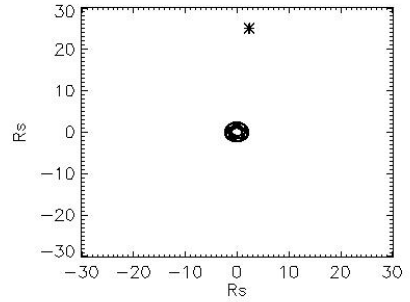
Integration time = 100 S

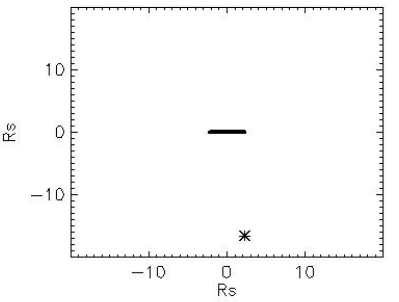


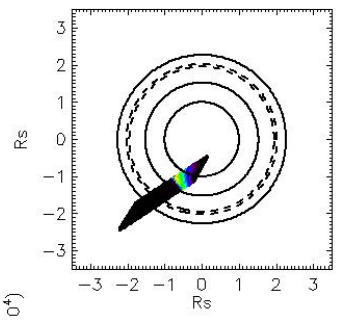


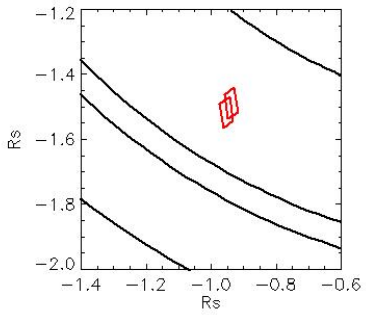










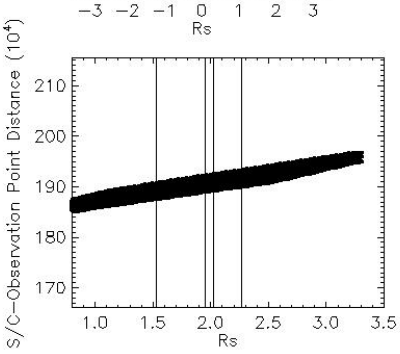


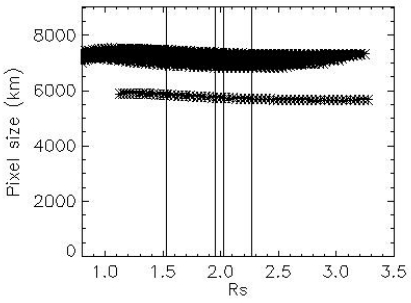
Observation Name:
UVIS_114RI_TMAPN30MP001_CIRS

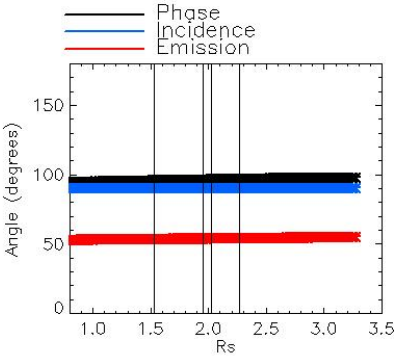
Observation Date:
2009_196_08_52_33

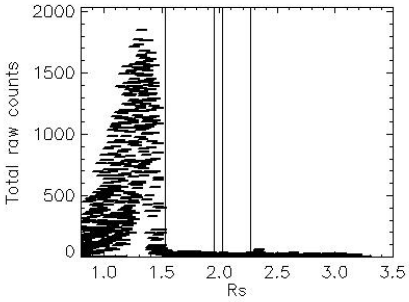
Observation Duration:
2500 S

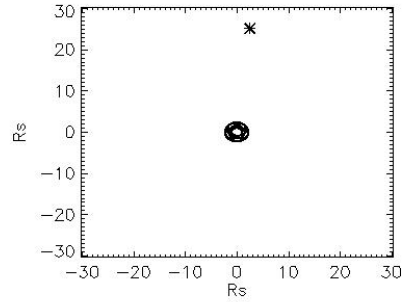
Integration time = 100 S

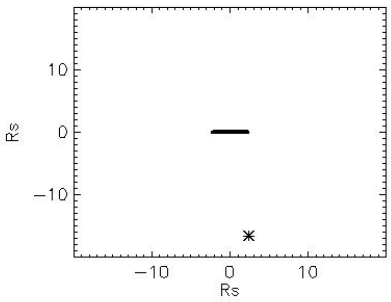


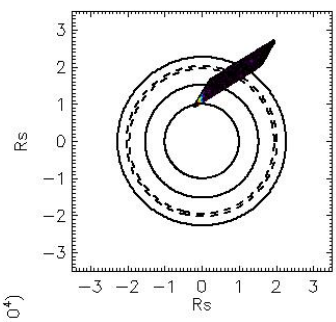


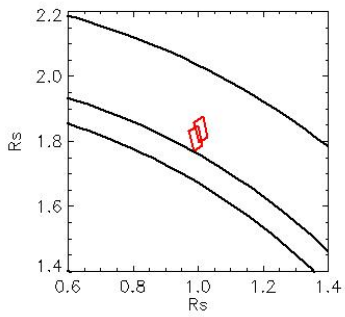










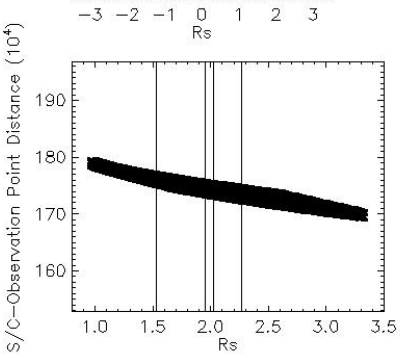


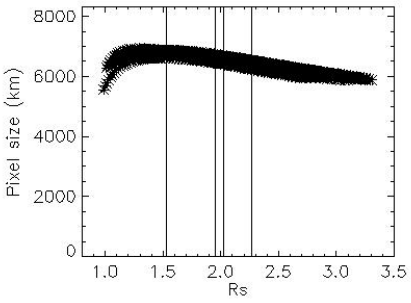
Observation Name:
UVIS_114RI_TMAPN30MP001_CIRS

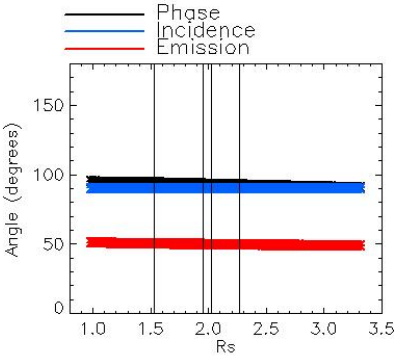
Observation Date:
2009_196_09_38_33

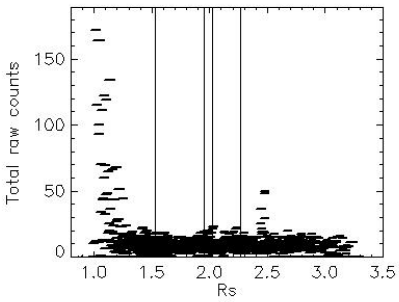
Observation Duration:
2500 S

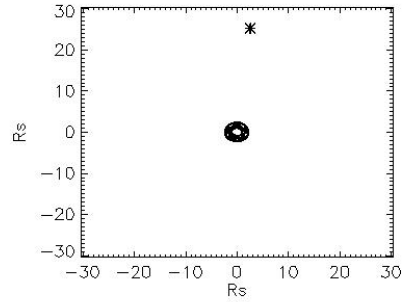
Integration time = 100 S

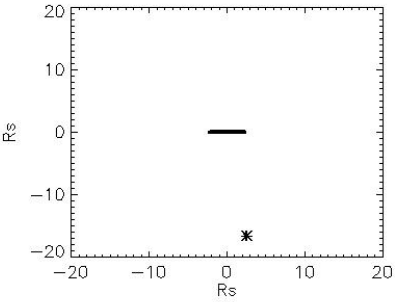


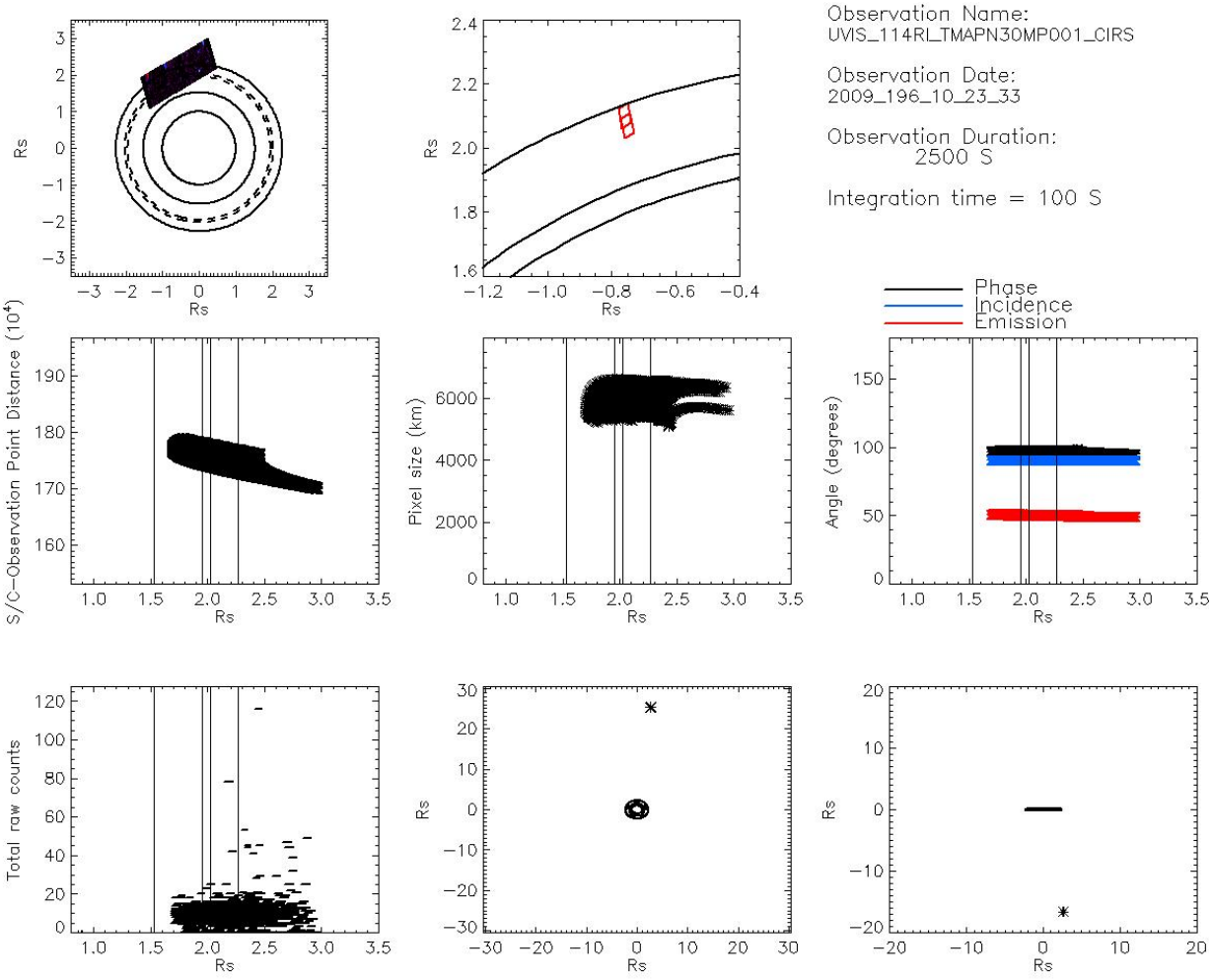


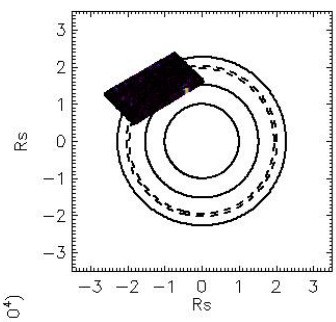


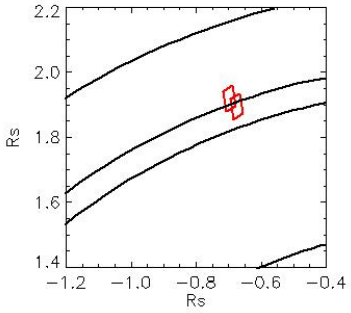







Observation Name:
UVIS_114RI_TMAPN30MP001_CIRS
Observation Date:
2009_196_10_23_33
Observation Duration:
2500 S
Integration time = 100 S
Phase
Incidence
Emission
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs



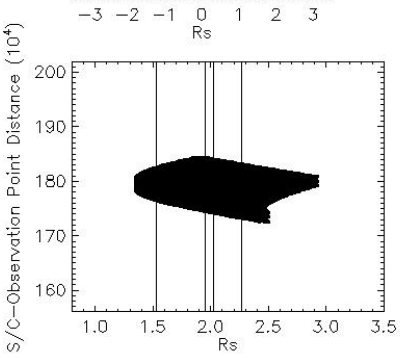


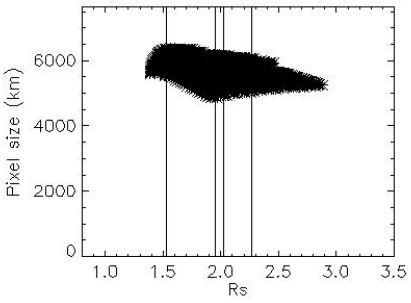
Observation Name:
UVIS_114RI_TMAPN30MP001_CIRS

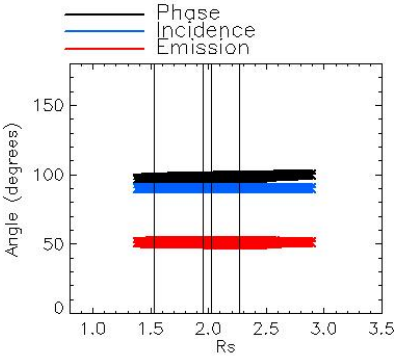
Observation Date:
2009_196_11_08_33

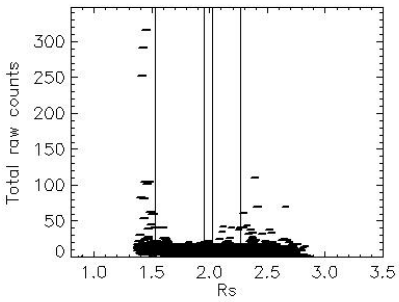
Observation Duration:
3300 S

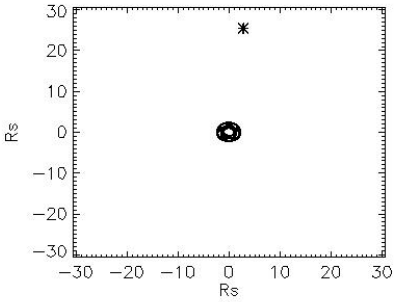
Integration time = 100 S

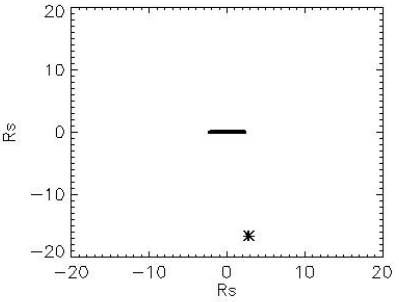


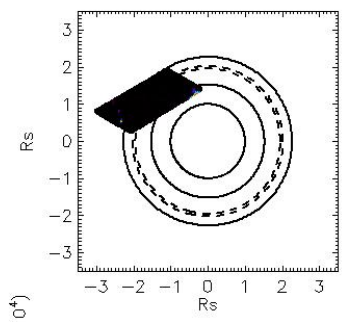


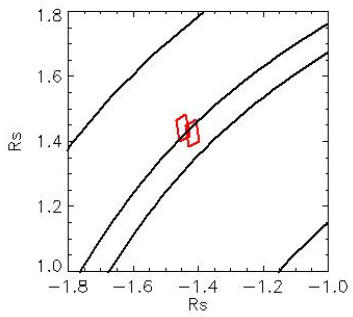










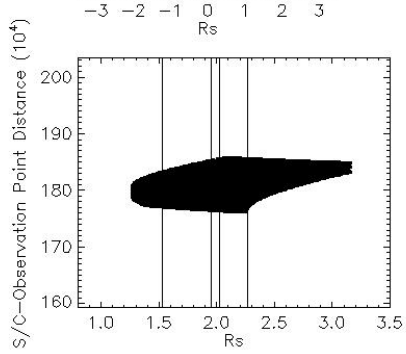


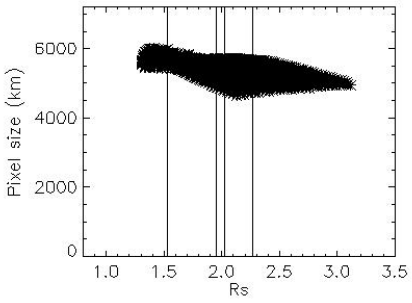
Observation Name:
UVIS_114RI_TMAPN30MP001_CIRS

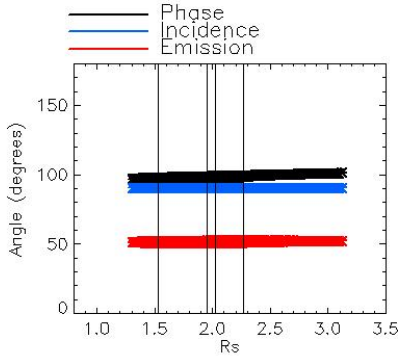
Observation Date:
2009_196_12_06_33

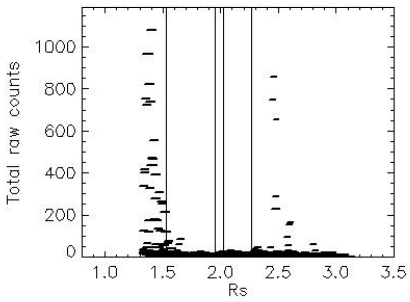
Observation Duration:
3300 S

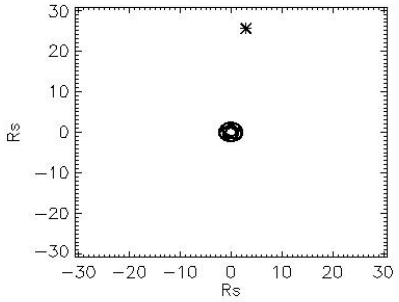
Integration time = 100 S

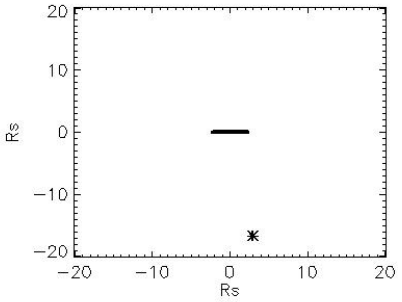


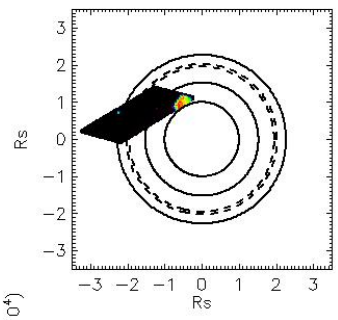


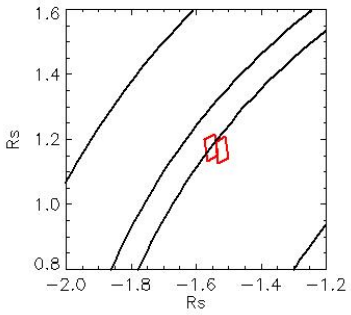










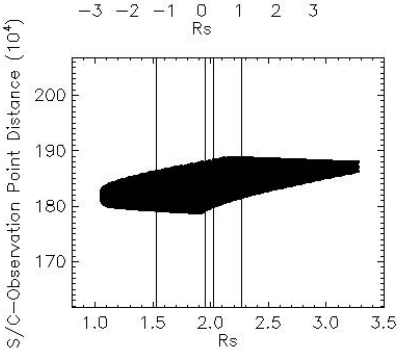


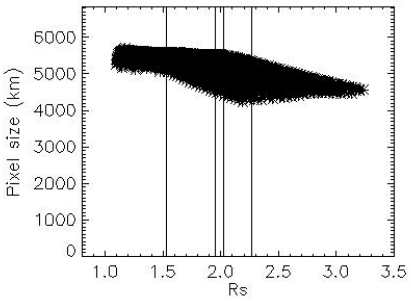
Observation Name:
UVIS_114RI_TMAPN30MP001_CIRS

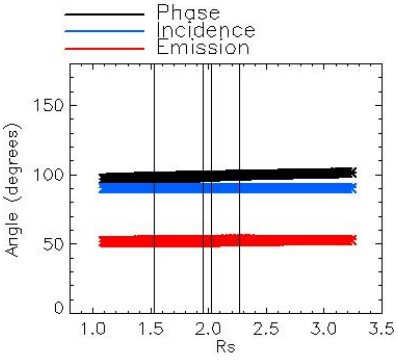
Observation Date:
2009_196_13_04_33

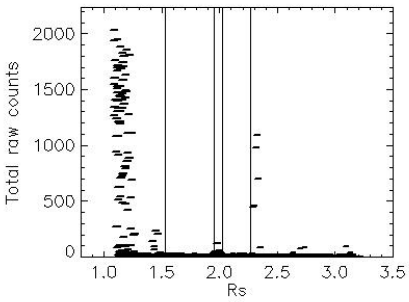
Observation Duration:
3300 S

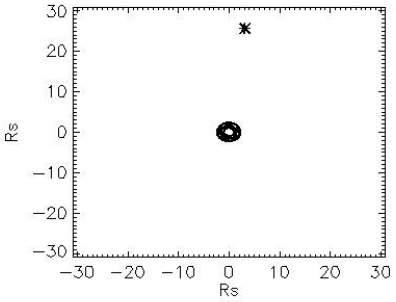
Integration time = 100 S

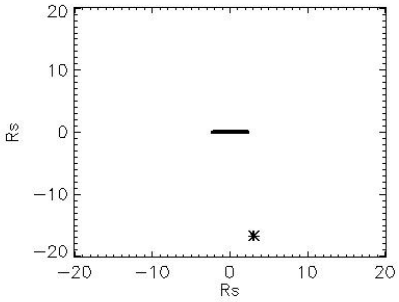


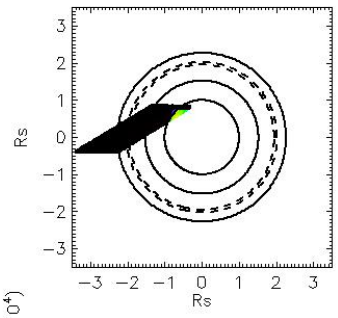


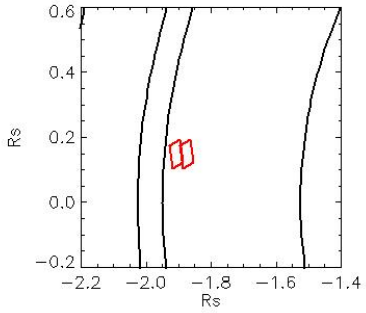










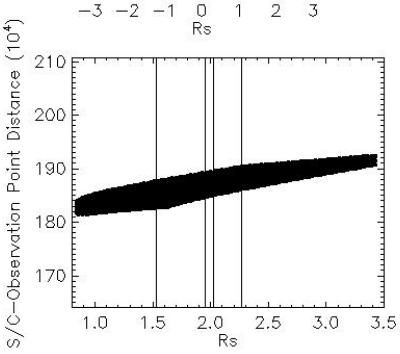


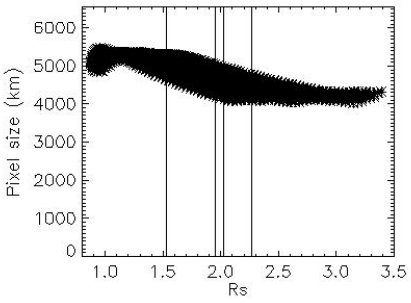
Observation Name:
UVIS_114RI_TMAPN30MP001_CIRS

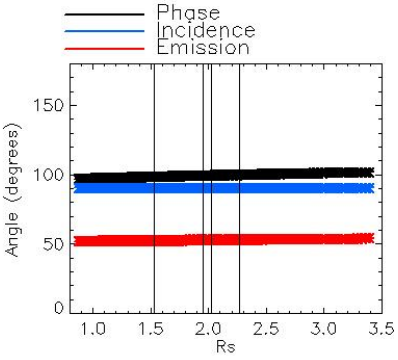
Observation Date:
2009_196_14_02_33

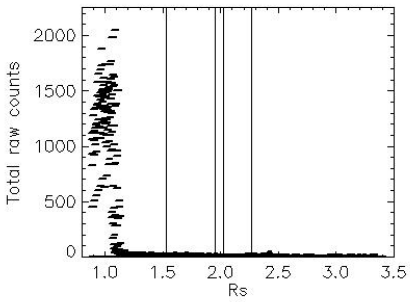
Observation Duration:
3300 S

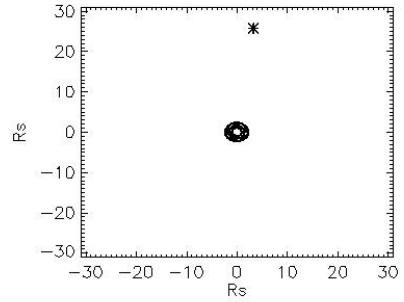
Integration time = 100 S

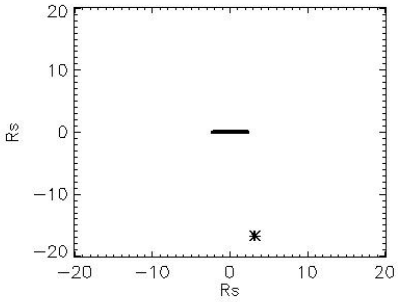


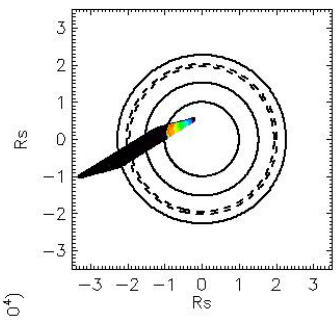


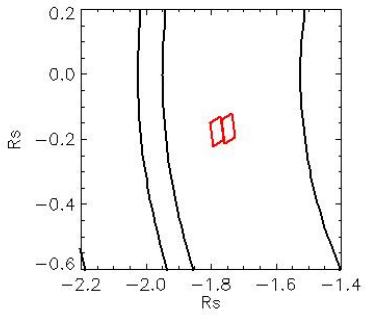










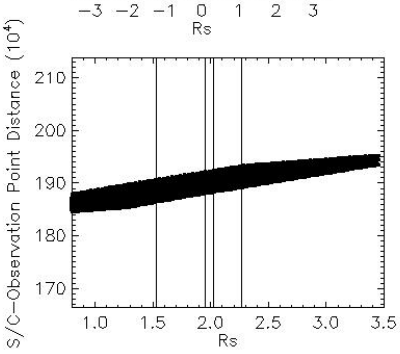


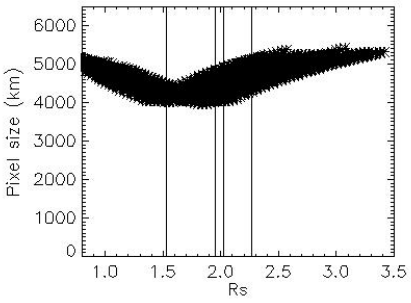
Observation Name:
UVIS_114RI_TMAPN30MP001_CIRS

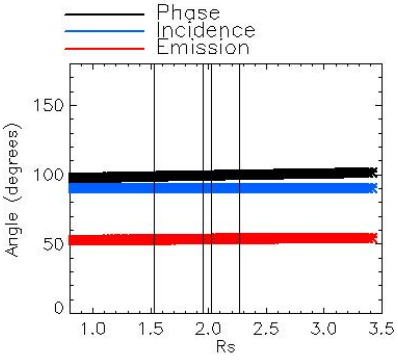
Observation Date:
2009_196_15_00_33

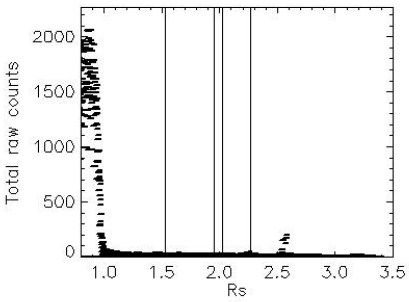
Observation Duration:
3300 S

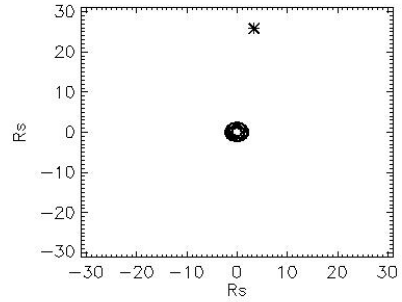
Integration time = 100 S

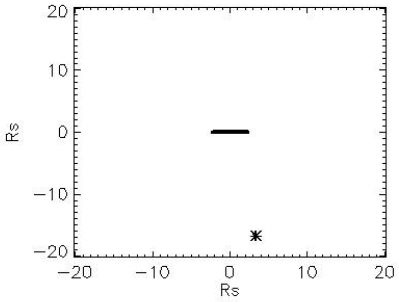


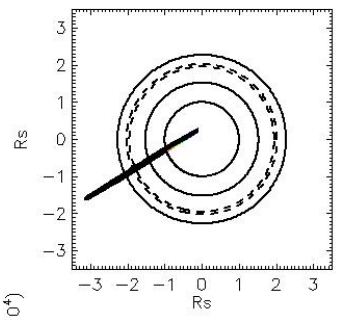


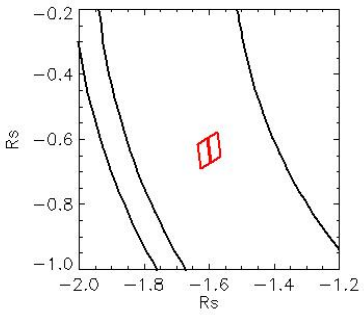










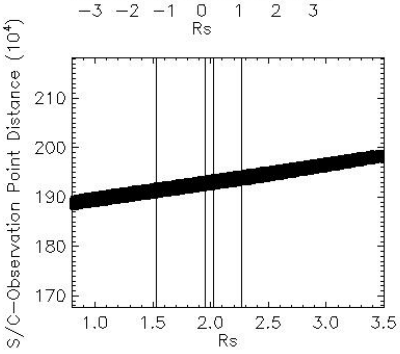


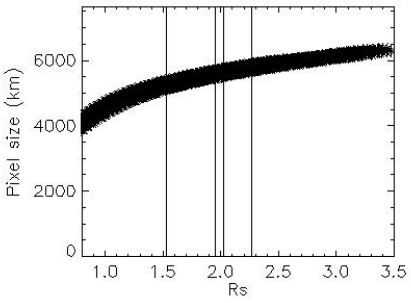
Observation Name:
UVIS_114RI_TMAPN30MP001_CIRS

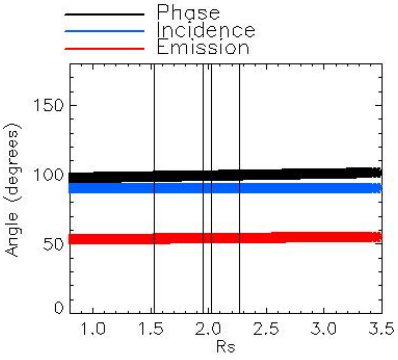
Observation Date:
2009_196_15_58_33

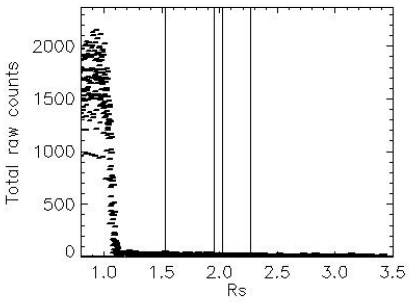
Observation Duration:
3300 S

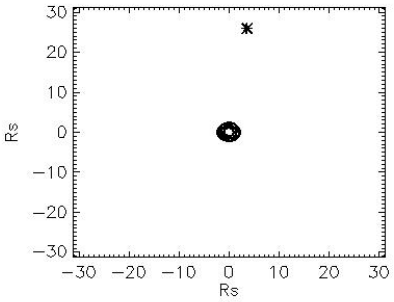
Integration time = 100 S

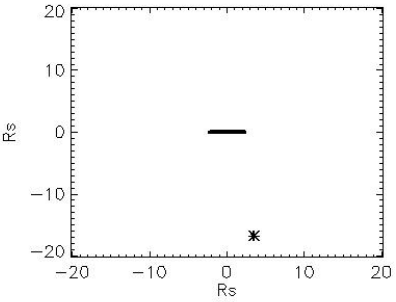


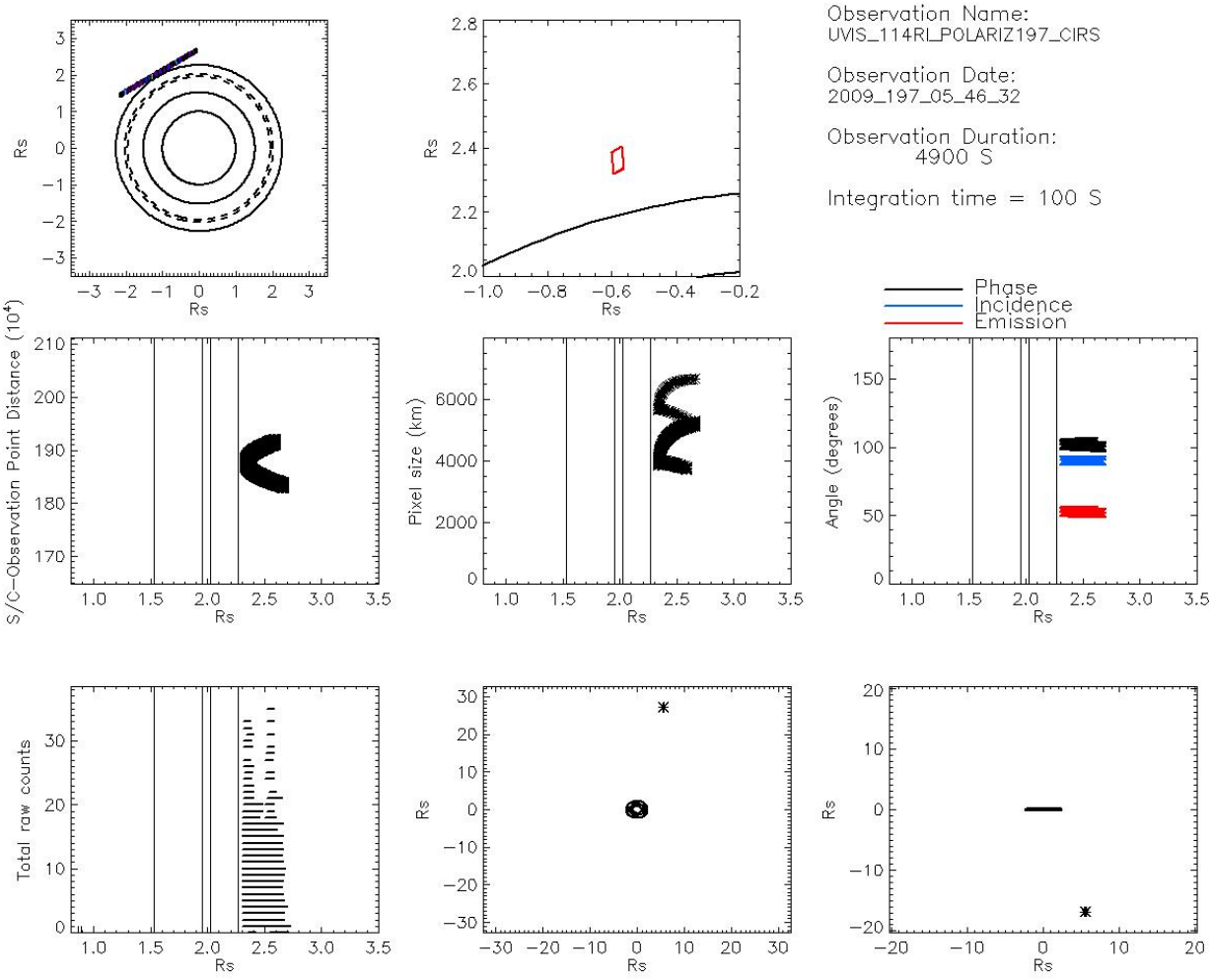


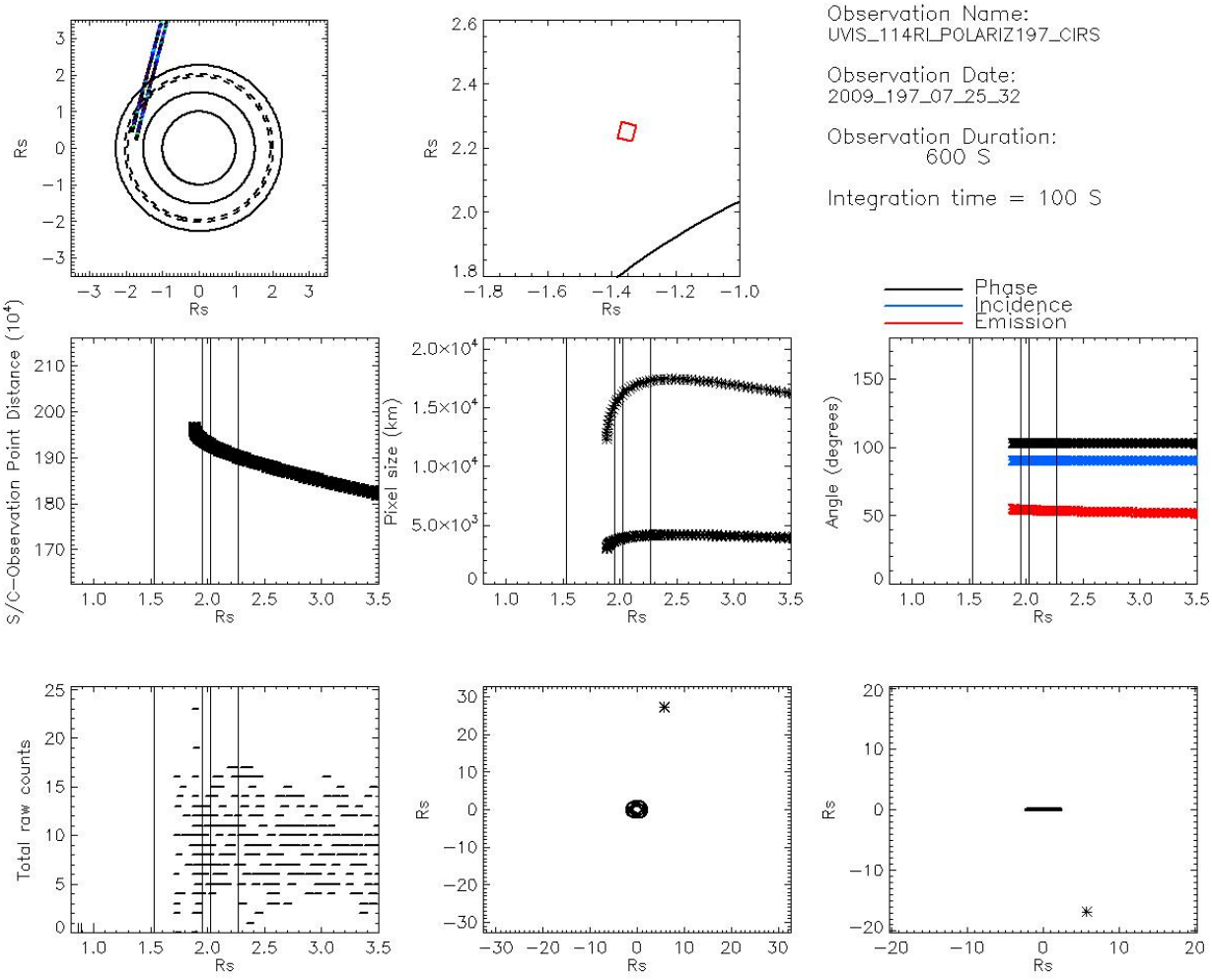


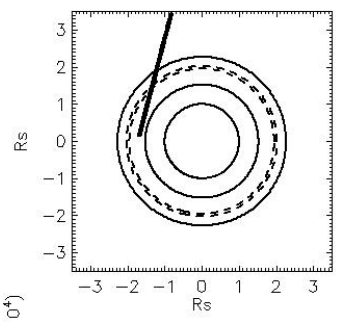


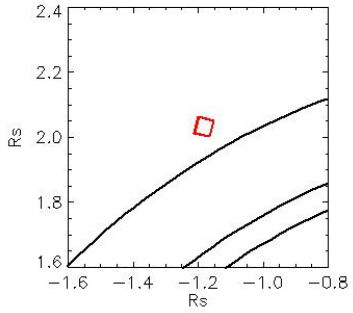





Observation Name:
UVIS_114RI_POLARIZ197_CIRS
Observation Date:
2009_197_05_46_32
Observation Duration:
4900 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts


Observation Name:
UVIS_114RI_POLARIZ197_CIRS
Observation Date:
2009_197_07_25_32
Observation Duration:
600 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts



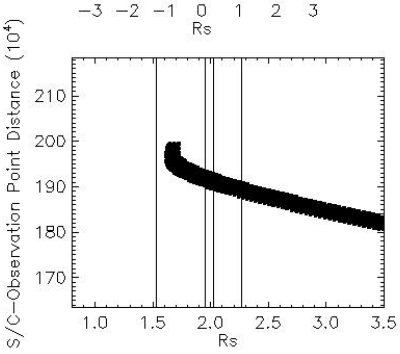


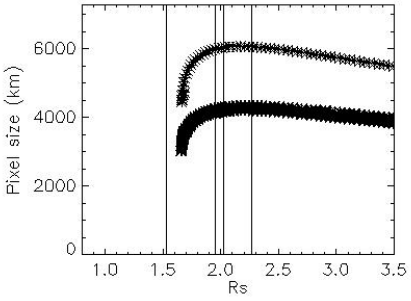
Observation Name:
UVIS_114RI_POLARIZ197_CIRS

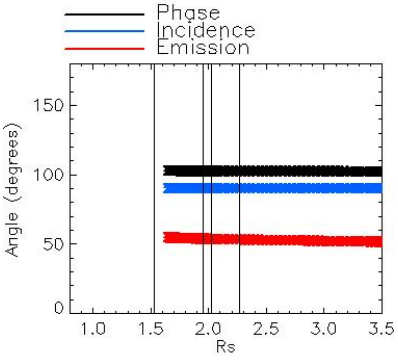
Observation Date:
2009_197_07_40_32

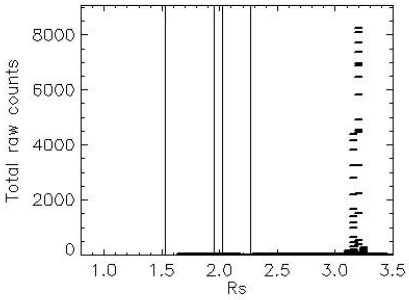
Observation Duration:
4900 S

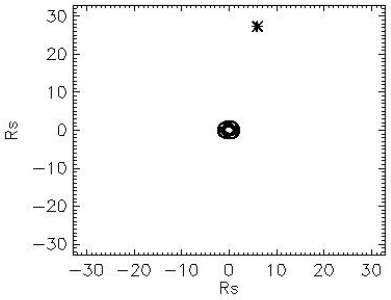
Integration time = 100 S

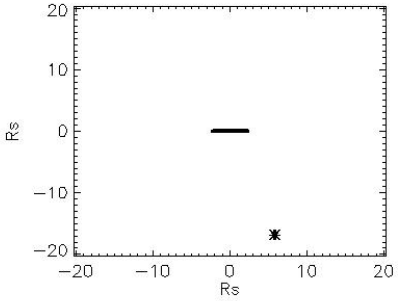


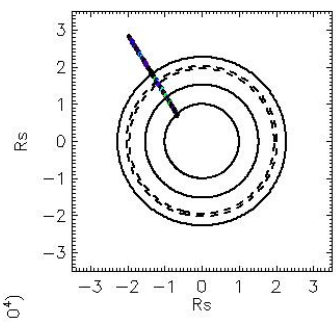


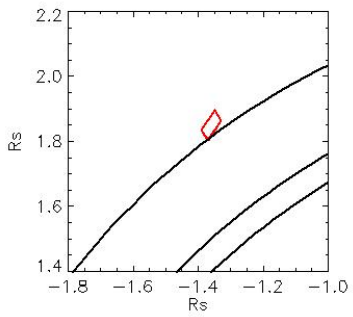










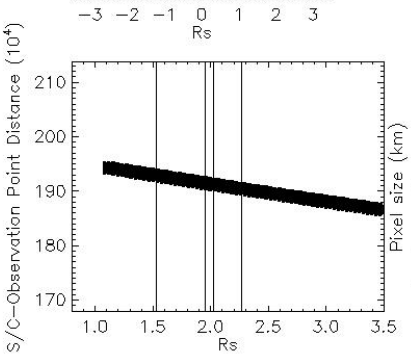


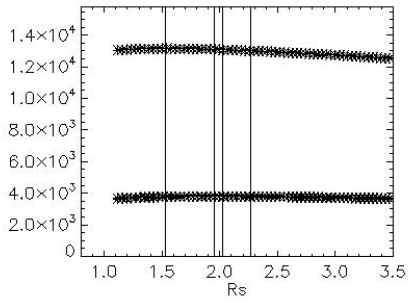
Observation Name:
UVIS_114RI_POLARIZ197_CIRS

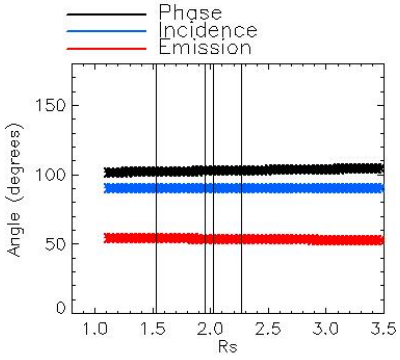
Observation Date:
2009_197_09_19_32

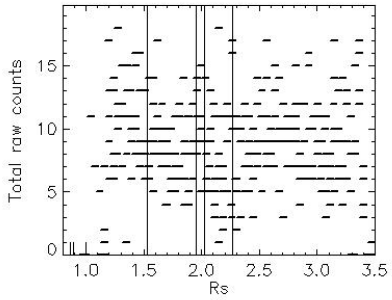
Observation Duration:
600 S

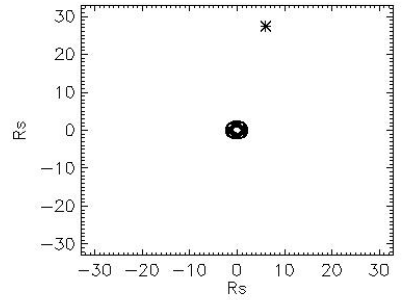
Integration time = 100 S

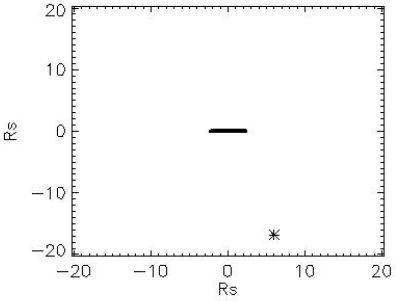


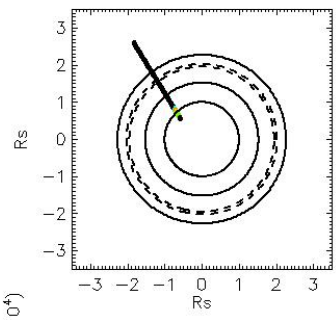


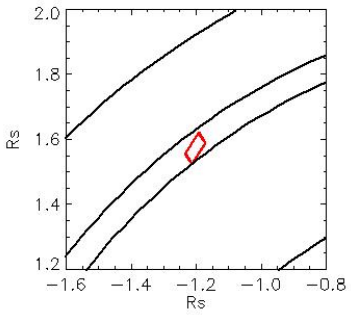










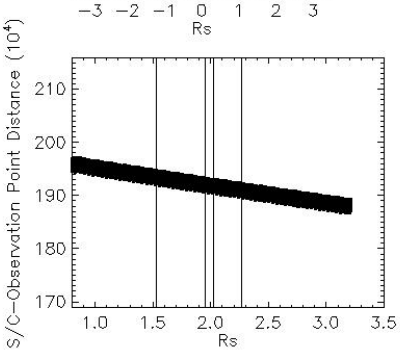


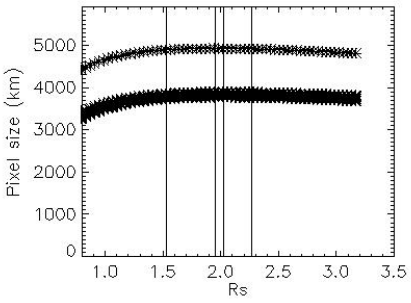
Observation Name:
UVIS_114RI_POLARIZ197_CIRS

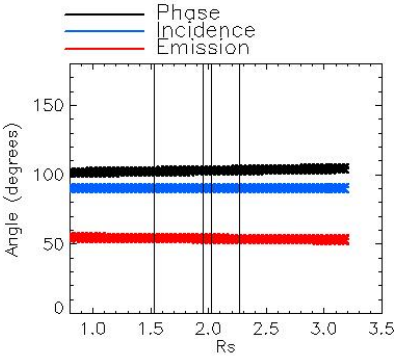
Observation Date:
2009_197_09_34_32

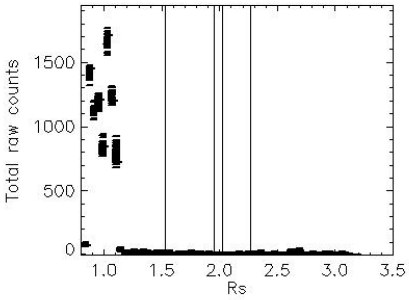
Observation Duration:
4900 S

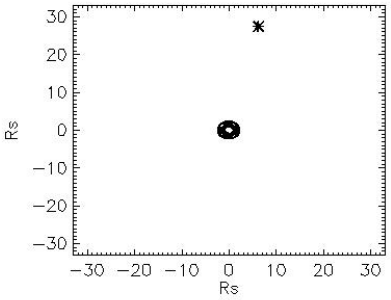
Integration time = 100 S

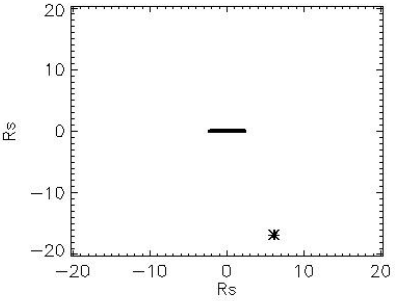


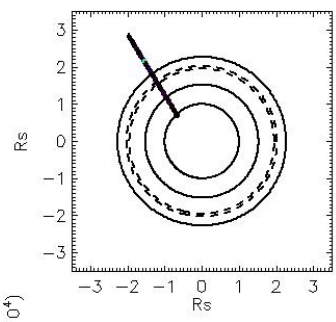


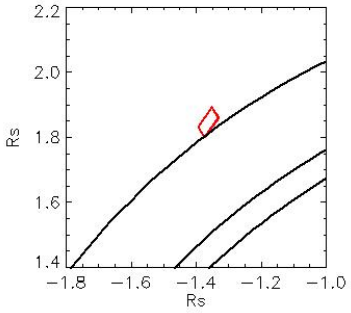










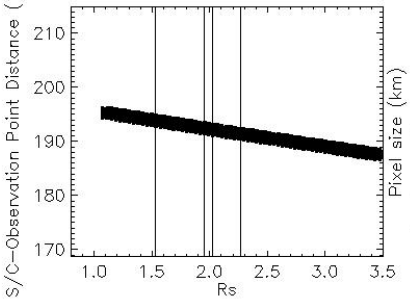


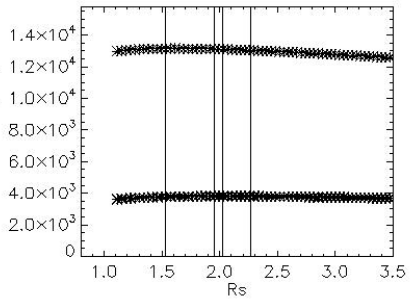
Observation Name:
UVIS_114RI_POLARIZ197_CIRS

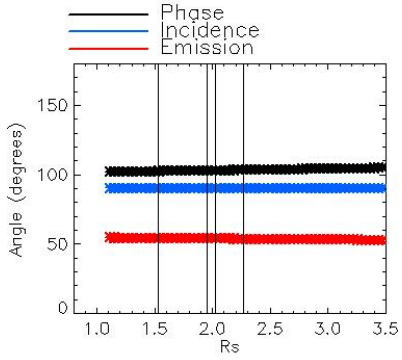
Observation Date:
2009_197_11_06_32

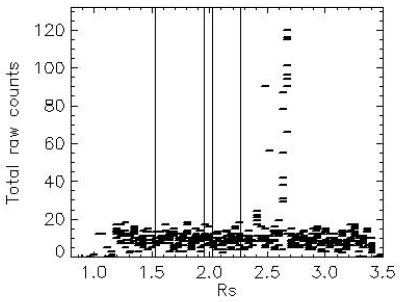
Observation Duration:
900 S

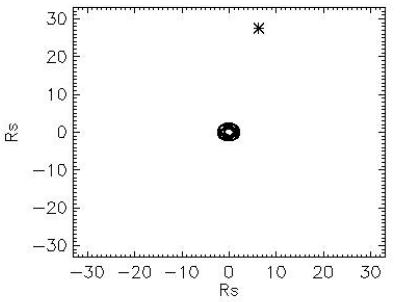
Integration time = 100 S

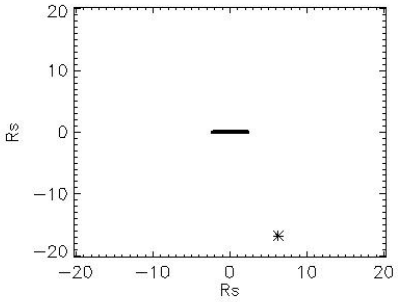


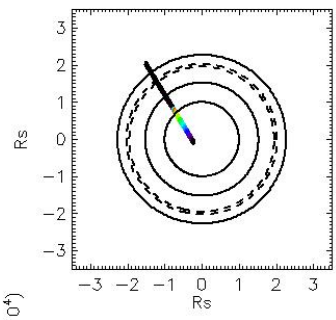


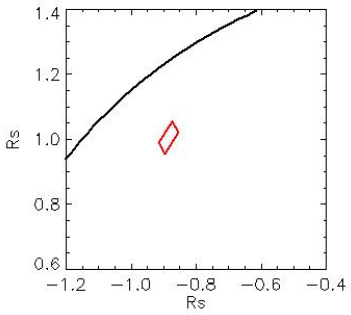










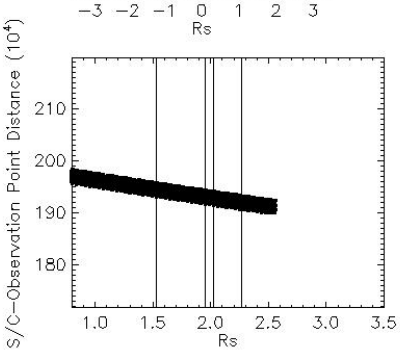


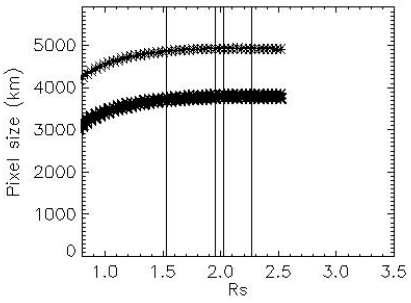
Observation Name:
UVIS_114RI_POLARIZ197_CIRS

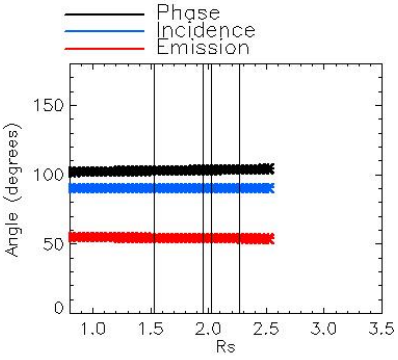
Observation Date:
2009_197_11_26_32

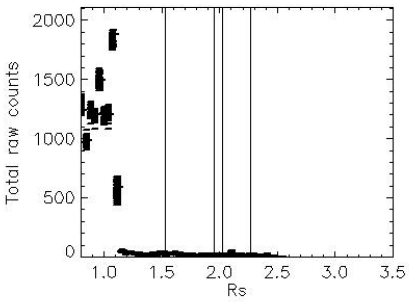
Observation Duration:
4900 S

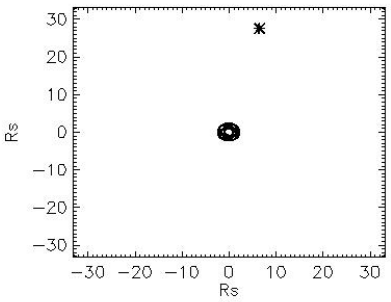
Integration time = 100 S

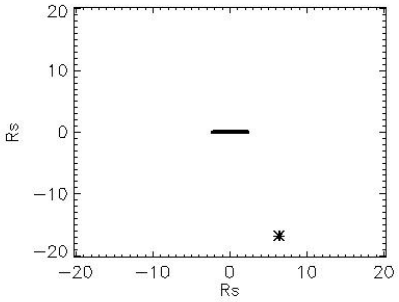


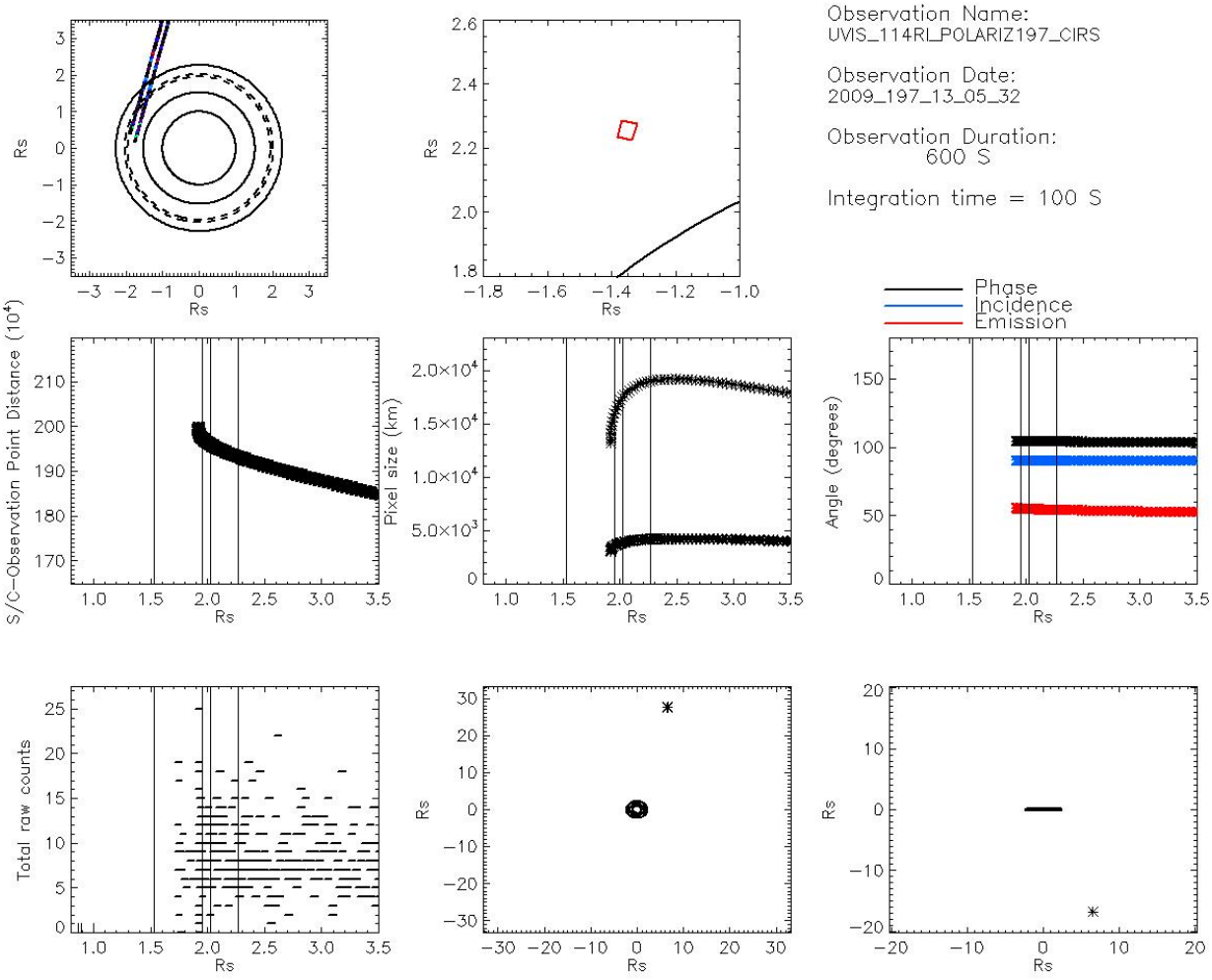


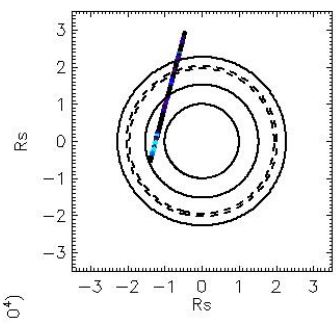


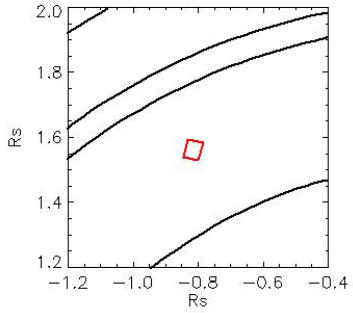







Observation Name:
UVIS_114RI_POLARIZ197_CIRS
Observation Date:
2009_197_13_05_32
Observation Duration:
600 S
Integration time = 100 S
Phase
Incidence
Emission
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs



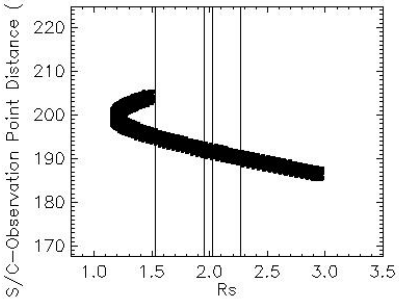


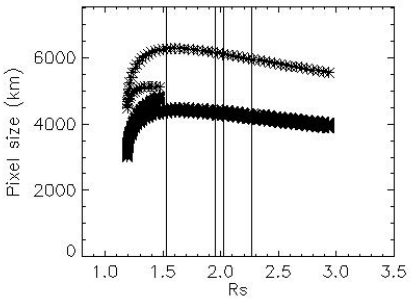
Observation Name:
UVIS_114RI_POLARIZ197_CIRS

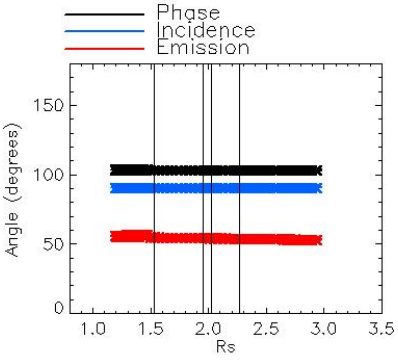
Observation Date:
2009_197_13_20_32

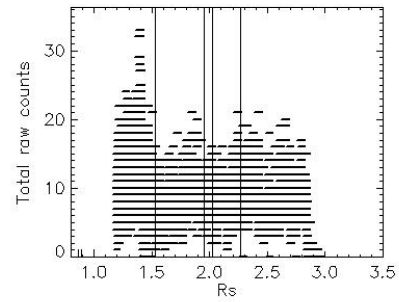
Observation Duration:
4900 S

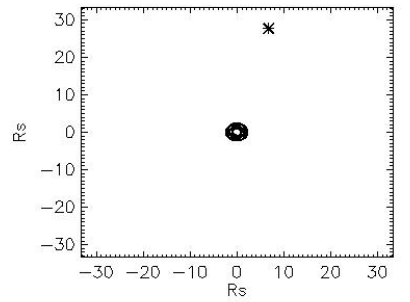
Integration time = 100 S

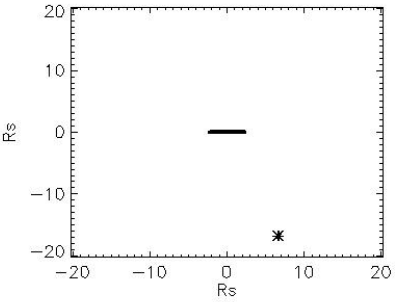


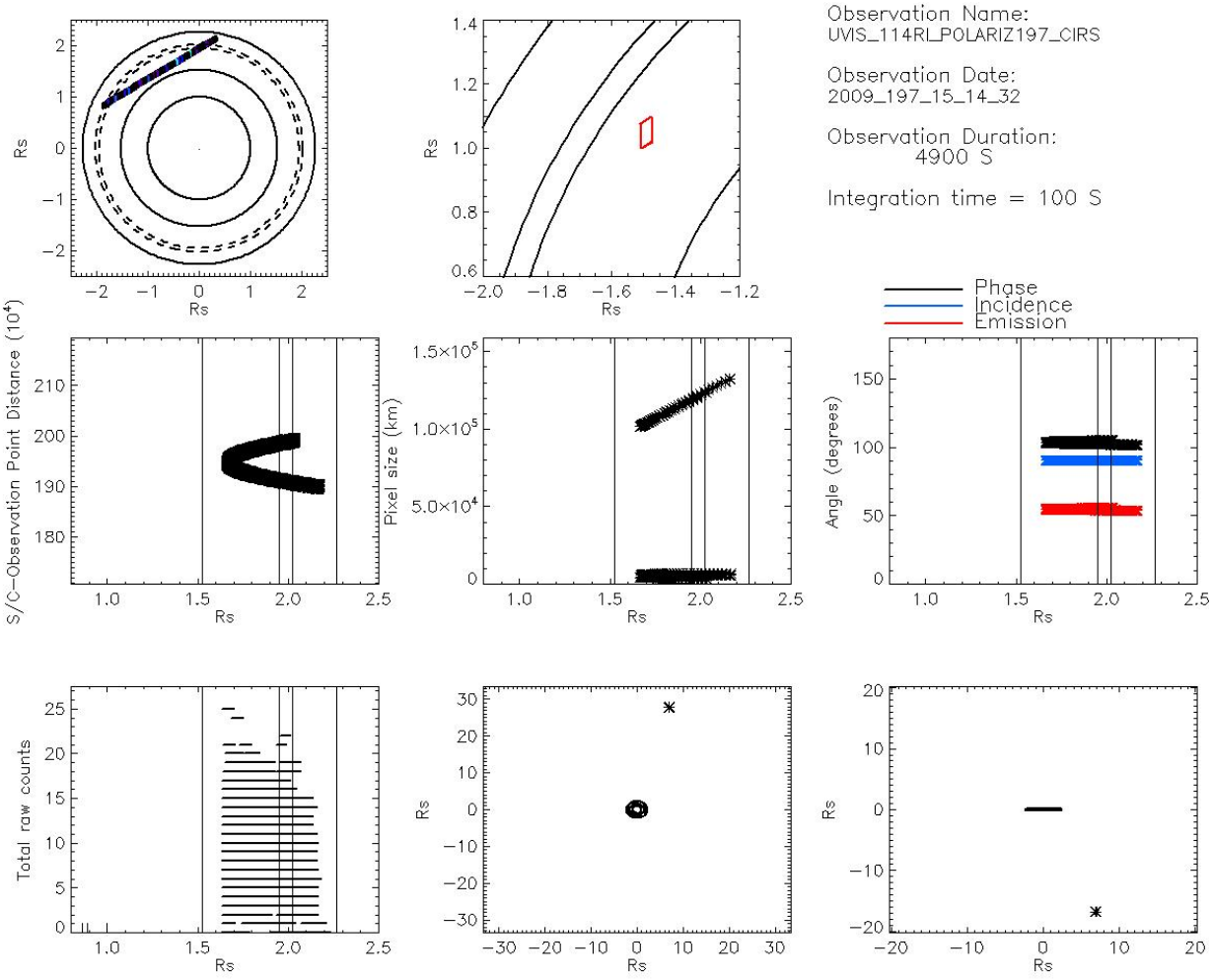


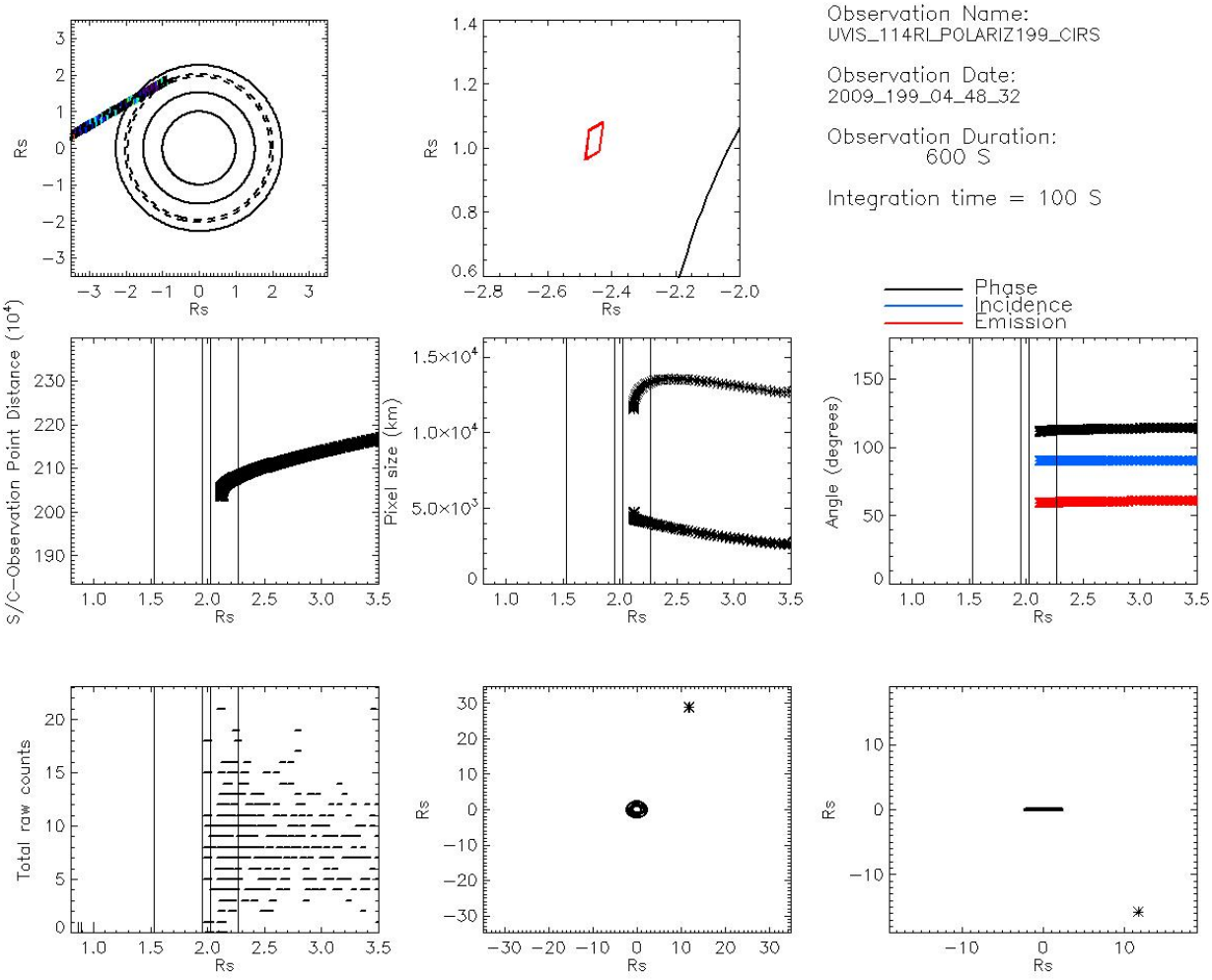


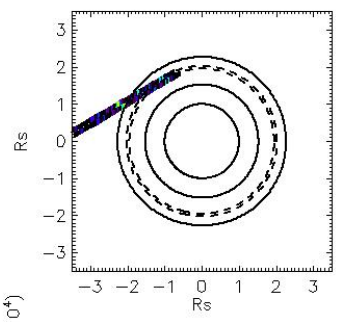


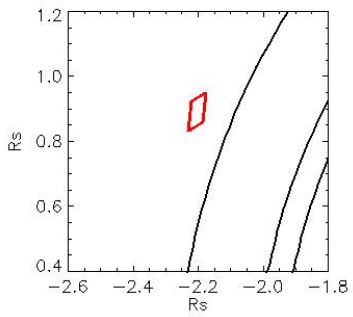





Observation Name:
UVIS_114RI_POLARIZ197_CIRS
Observation Date:
2009_197_15_14_32
Observation Duration:
4900 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts


Observation Name:
UVIS_114RI_POLARIZ199_CIRS
Observation Date:
2009_199_04_48_32
Observation Duration:
600 S
Integration time = 100 S
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Phase
Incidence
Emission
Angle (degrees)
Total raw counts



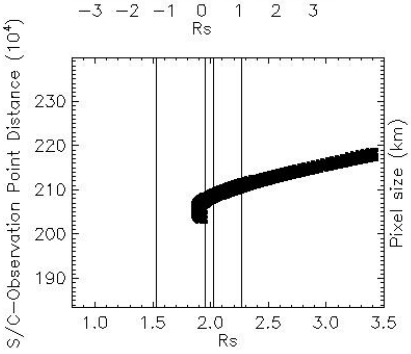


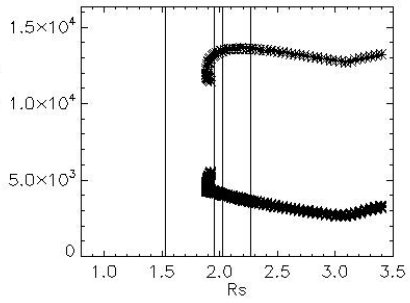
Observation Name:
UVIS_114RI_POLARIZ199_CIRS

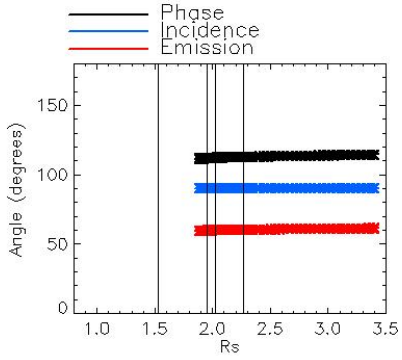
Observation Date:
2009_199_05_03_32

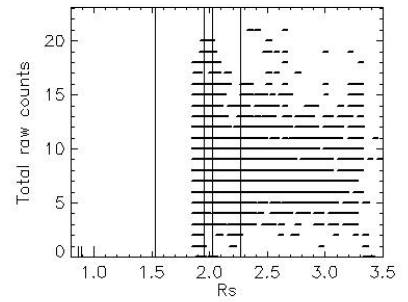
Observation Duration:
3300 S

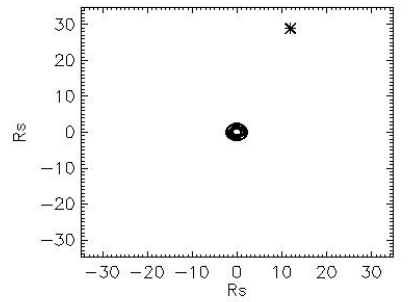
Integration time = 100 S

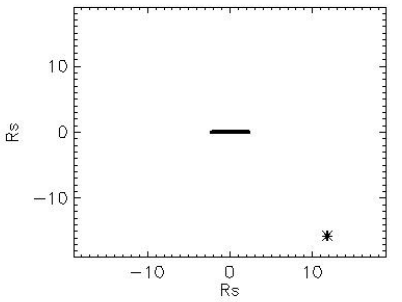


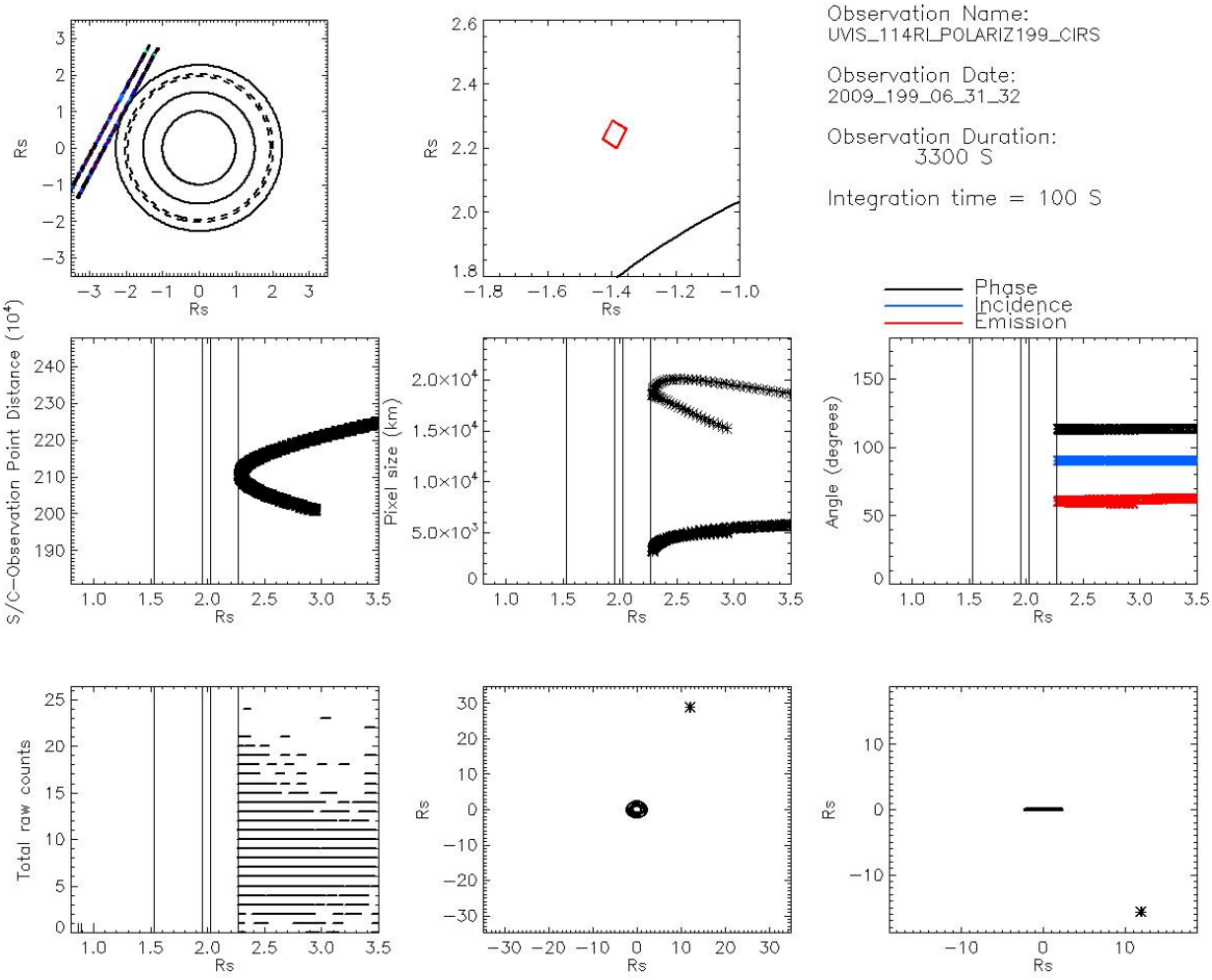


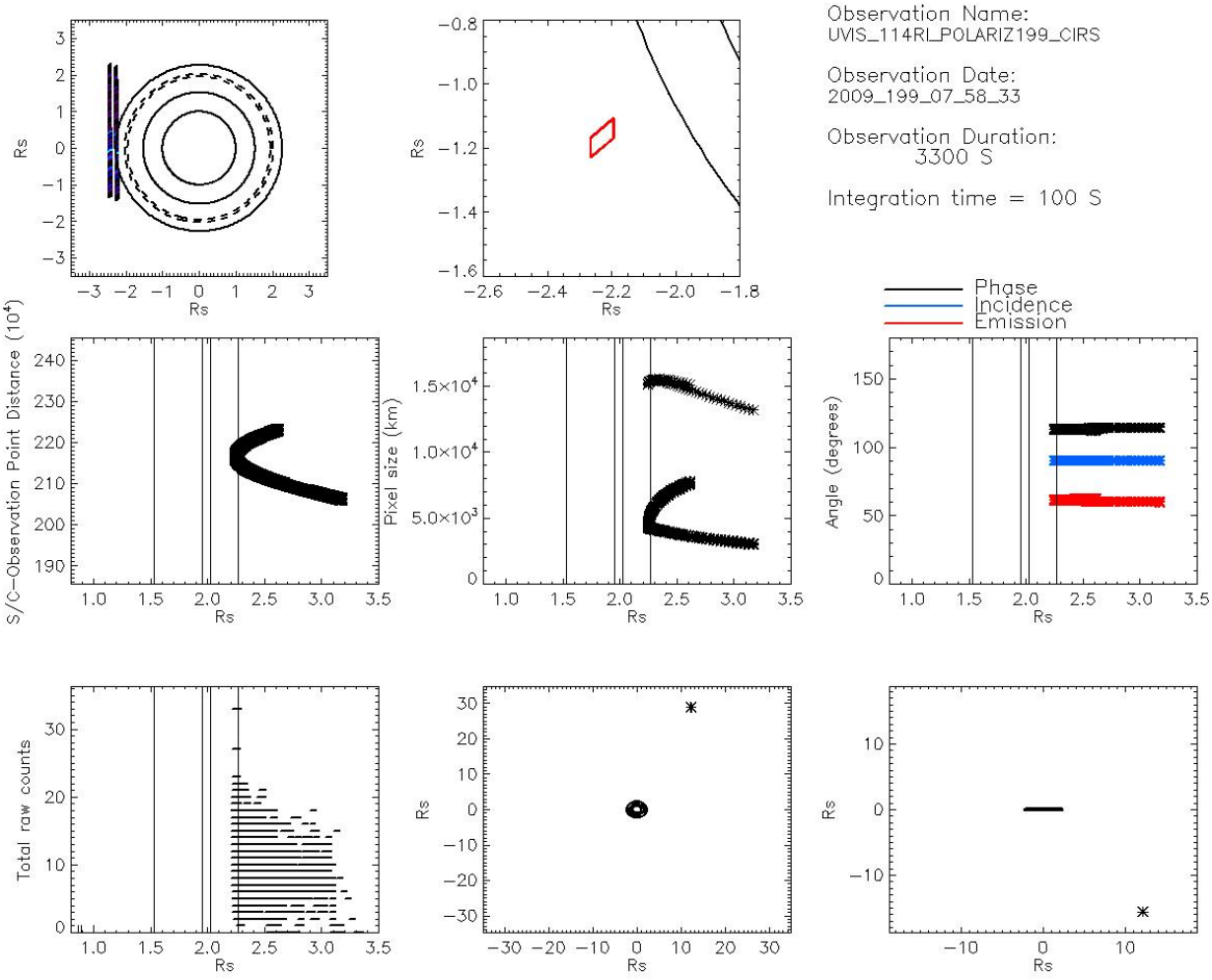


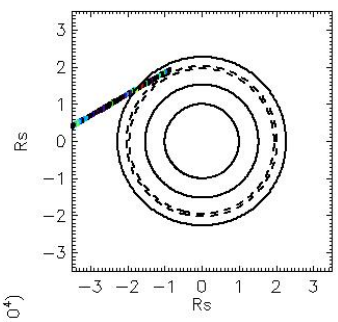


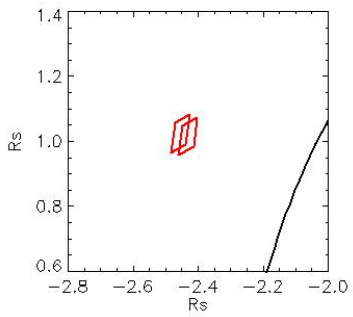





Observation Name:
UVIS_114RI_POLARIZ199_CIRS
Observation Date:
2009_199_06_31_32
Observation Duration:
3300 S
Integration time = 100 S
Phase
Incidence
Emission
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs


Observation Name:
UVIS_114RI_POLARIZ199_CIRS
Observation Date:
2009_199_07_58_33
Observation Duration:
3300 S
Integration time = 100 S
Phase
Incidence
Emission
Rs
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts



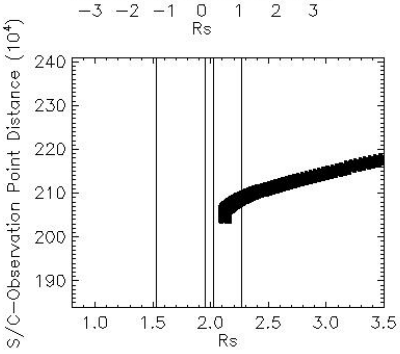


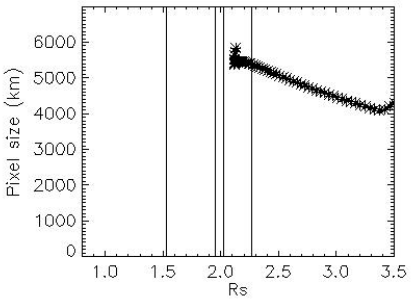
Observation Name:
UVIS_114RI_POLARIZ199_CIRS

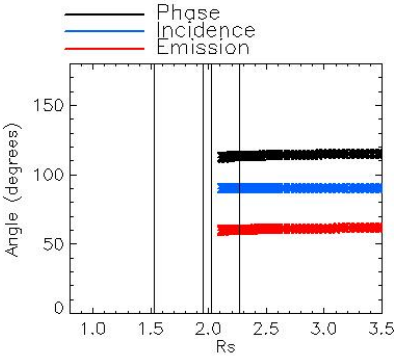
Observation Date:
2009_199_09_24_33

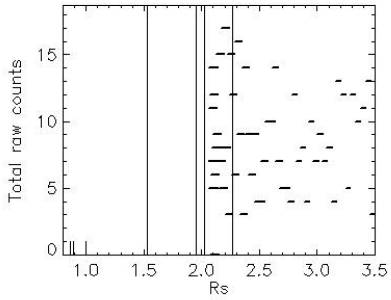
Observation Duration:
100 S

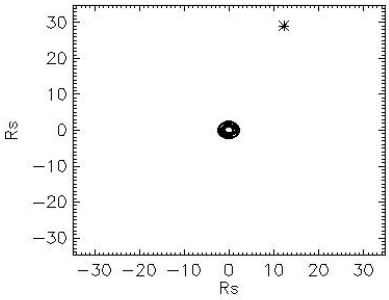
Integration time = 100 S

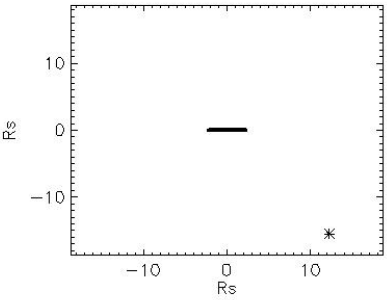


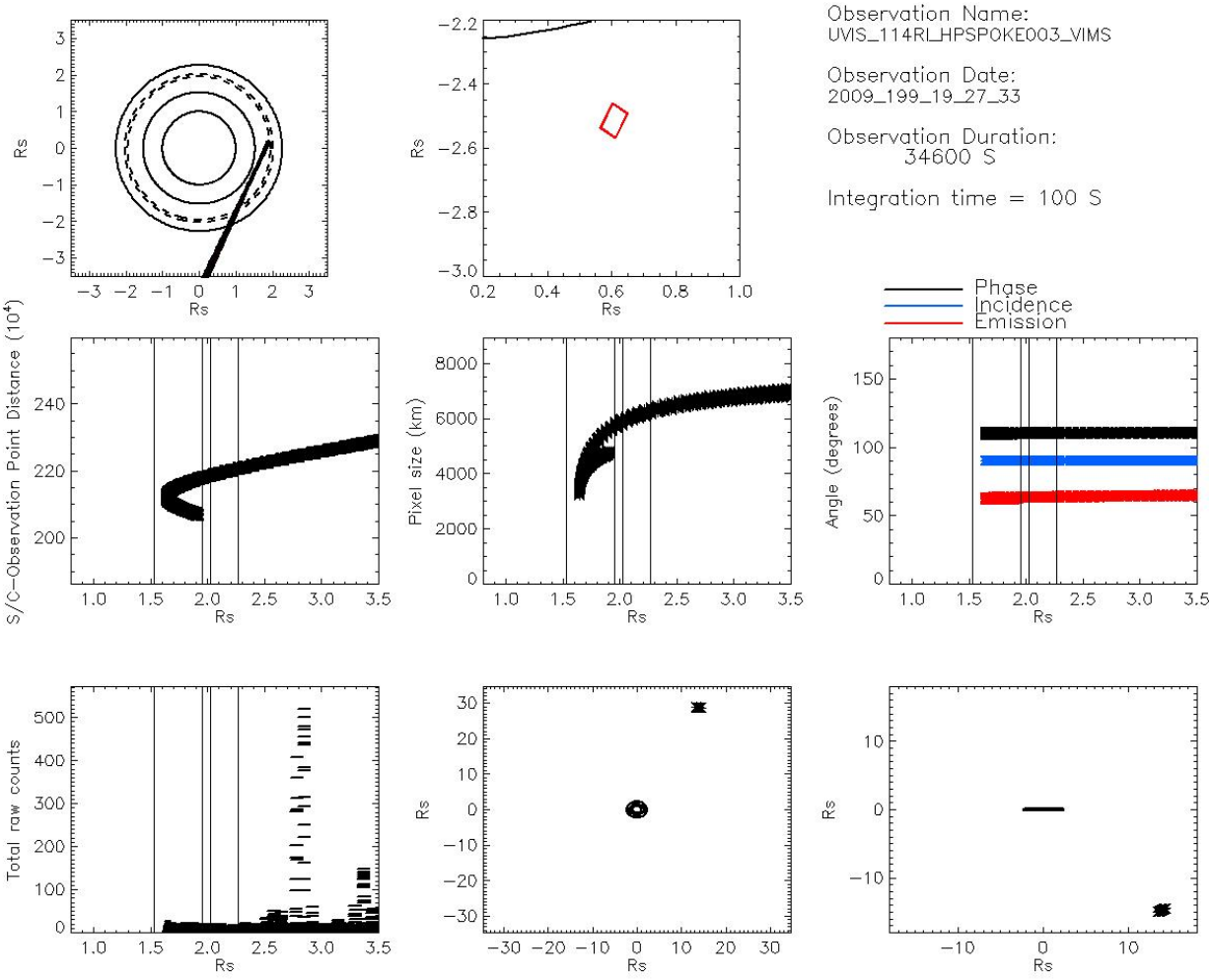











Observation Name:
UVIS_114RI_HPSPOKE003_VIMS
Observation Date:
2009_199_19_27_33
Observation Duration:
34600 S
Integration time = 100 S
Phase
Incidence
Emission
S/C–Observation Point Distance (10^4)
Pixel size (km)
Angle (degrees)
Total raw counts
Rs