

## 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.

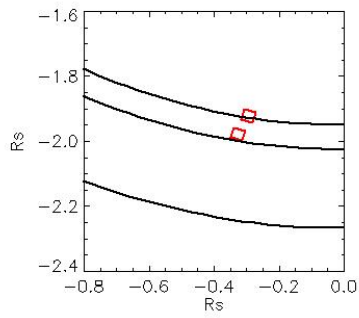
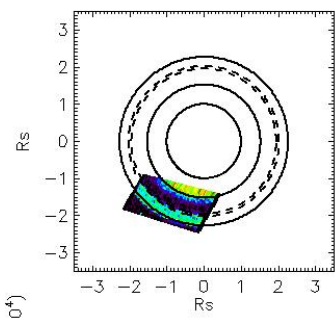
Middle center: Maximum projected smeared pixel size for all data records plotted against the radial location of the projected pixel at the middle of the integration period.

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.

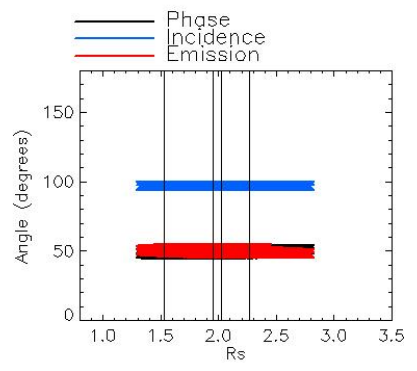
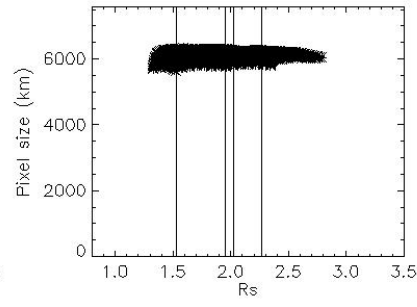
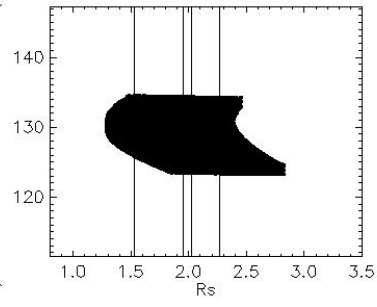
Bottom center: Location of spacecraft throughout an observation looking down on Saturn North Pole with the Sun to the left.

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

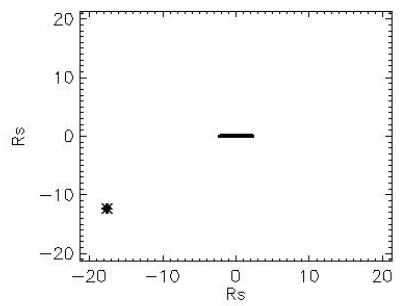
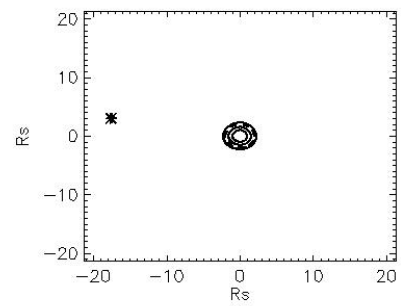
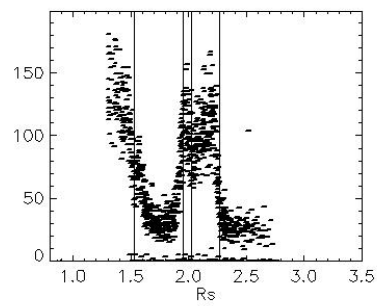


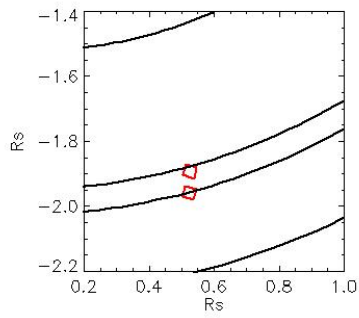
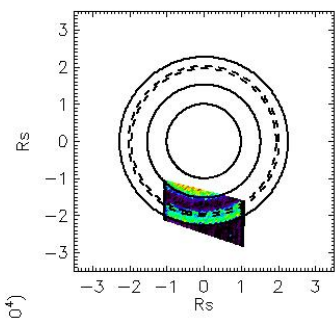
Observation Name:  
 UVS\_066RLSUBMU40MP001\_CIRS  
 Observation Date:  
 2008\_118\_14\_51\_51  
 Observation Duration:  
 5100 S  
 Integration time = 300 S

S/C—Observation Point Distance ( $10^4$ )

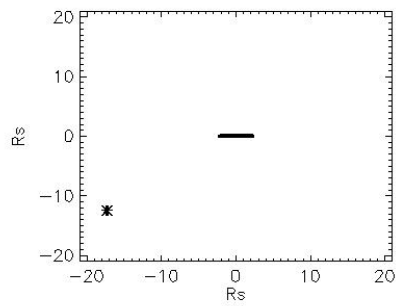
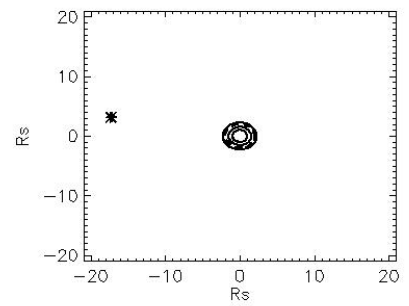
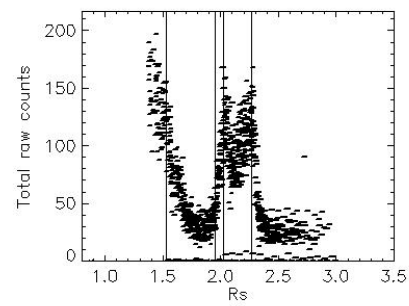
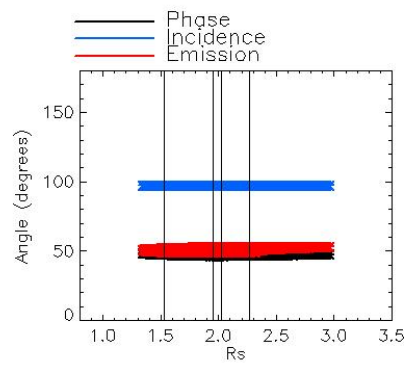
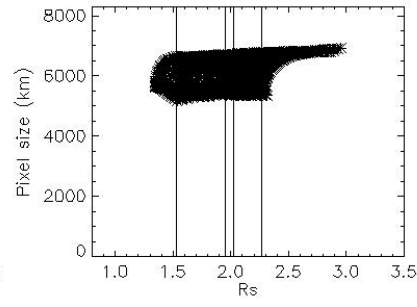
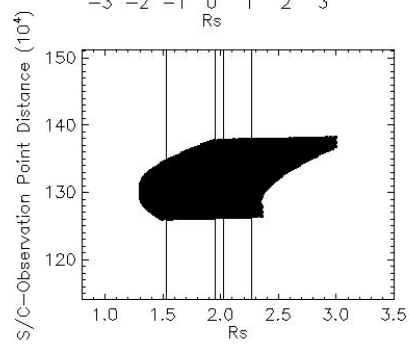


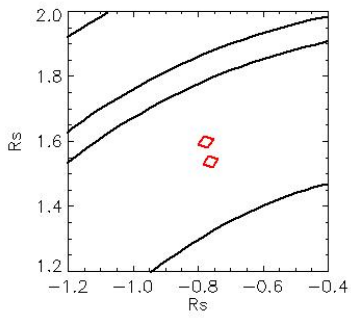
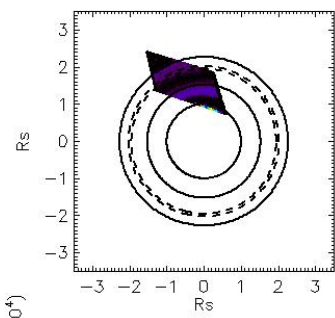
Total raw counts





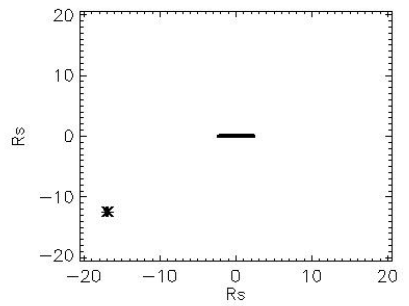
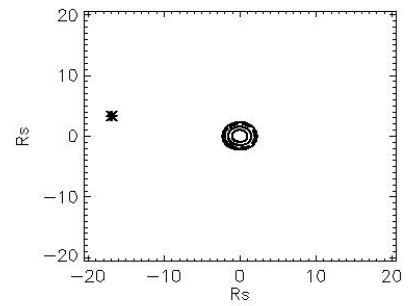
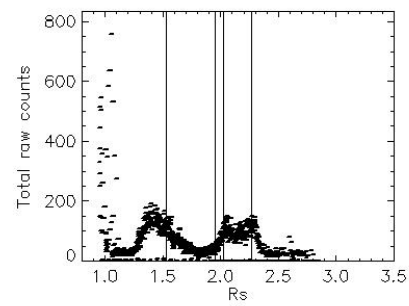
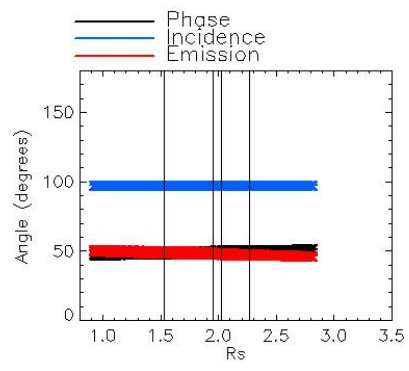
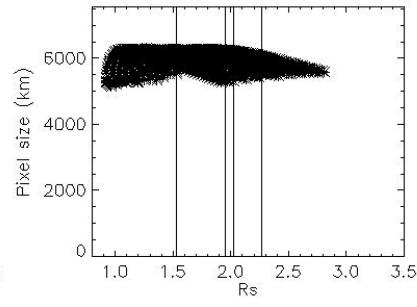
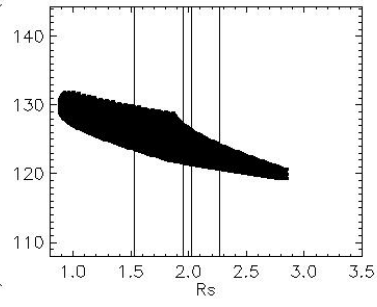
Observation Name:  
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 Observation Date:  
 2008\_118\_16\_21\_51  
 Observation Duration:  
 5100 S  
 Integration time = 300 S

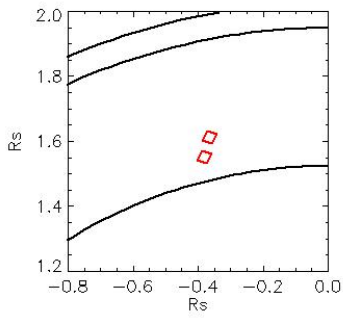
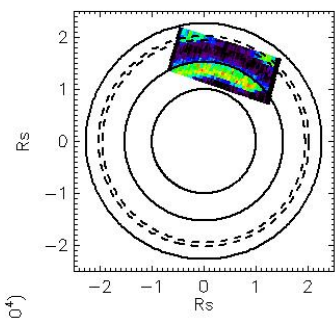




Observation Name:  
 UVS\_066RLSUBMU40MP001\_CIRS  
 Observation Date:  
 2008\_118\_17\_56\_51  
 Observation Duration:  
 5100 S  
 Integration time = 300 S

S/C—Observation Point Distance ( $10^4$ )



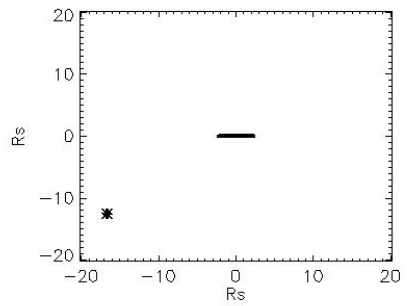
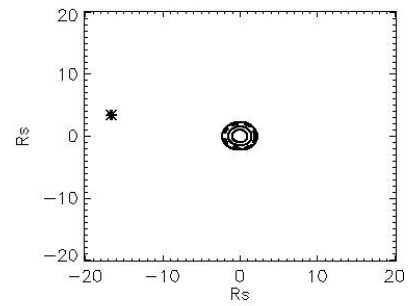
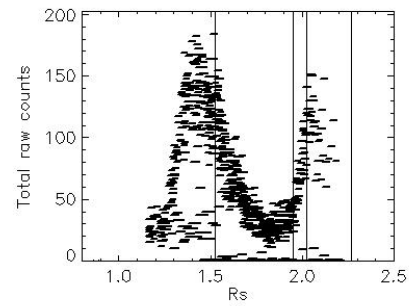
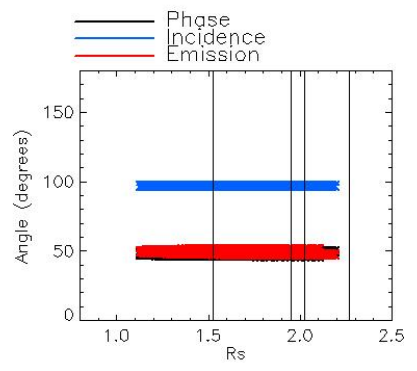
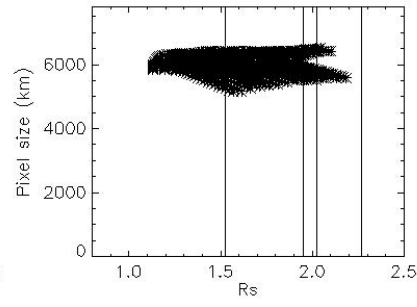
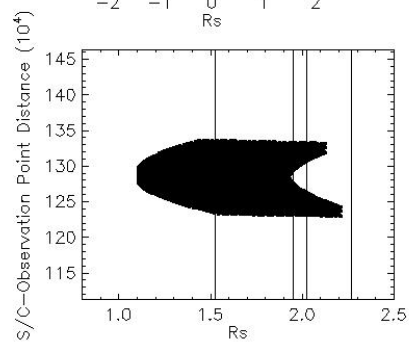


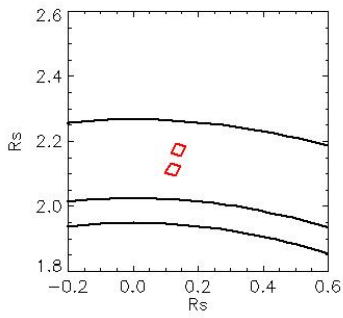
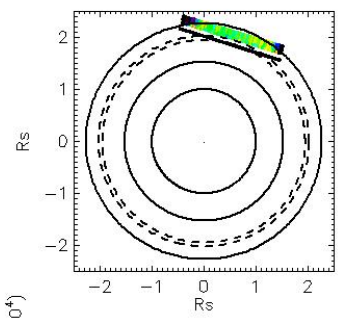
Observation Name:  
UMS\_066RLSUBMU40MP001\_CIRS

Observation Date:  
2008\_118\_19\_26\_51

Observation Duration:  
3900 S

Integration time = 300 S



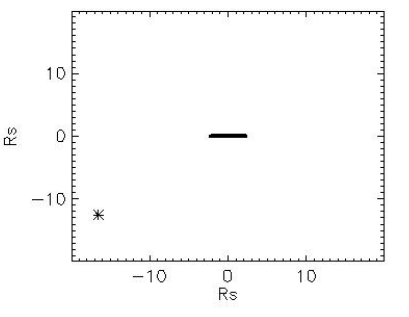
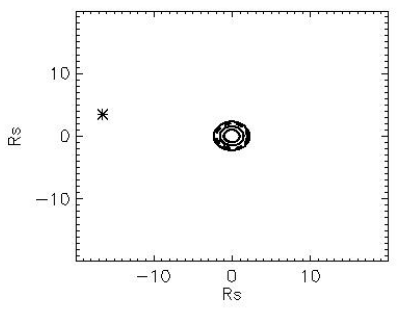
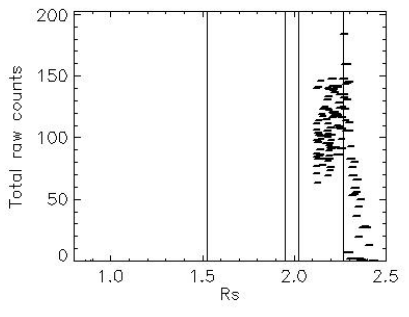
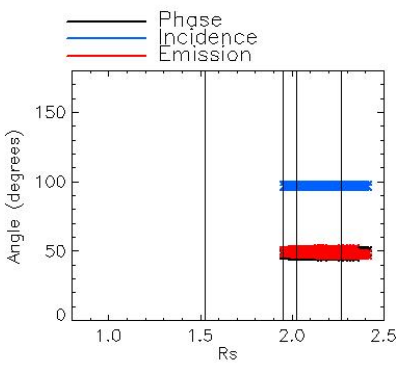
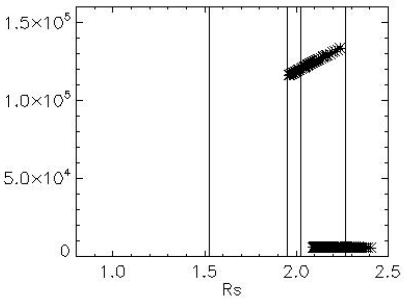
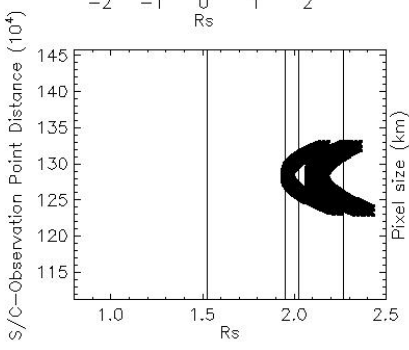


Observation Name:  
UVS\_066RLSUBMU40MP001\_CIRS

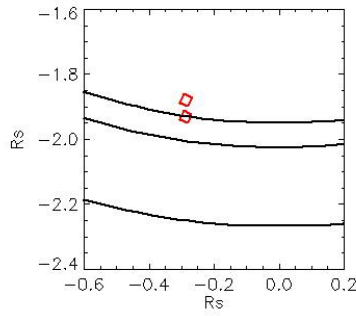
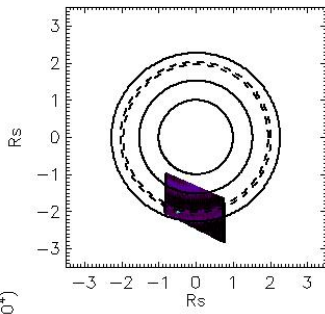
Observation Date:  
2008\_118\_20\_31\_51

Observation Duration:  
1200 S

Integration time = 300 S



— Phase  
— Incidence  
— Emission

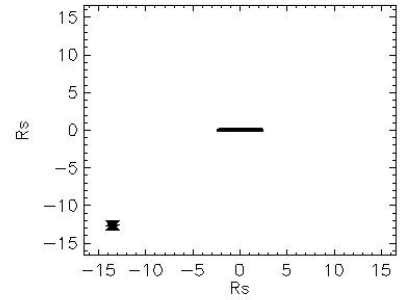
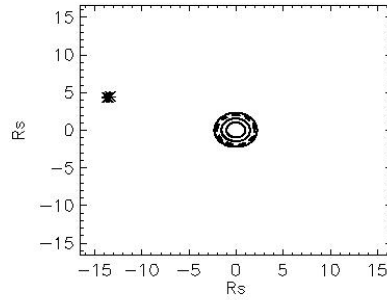
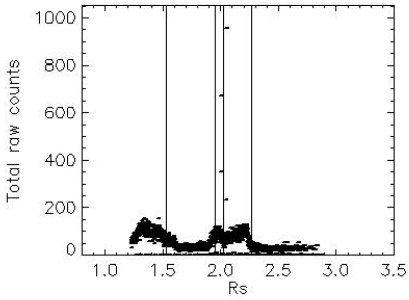
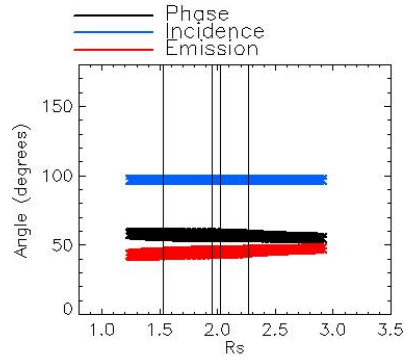
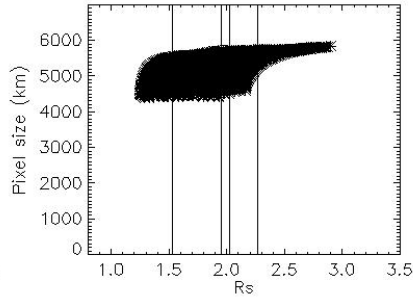
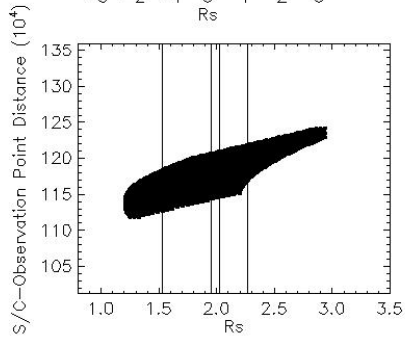


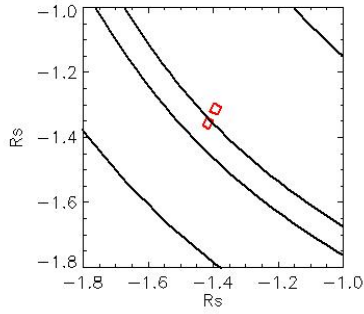
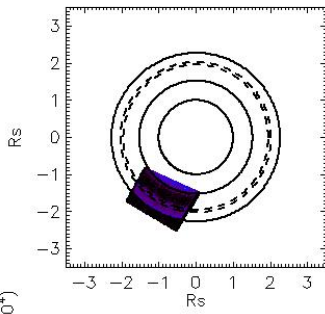
Observation Name:  
UVS\_066RLSUBMU50MP001\_CIRS

Observation Date:  
2008\_119\_07\_55\_51

Observation Duration:  
6300 S

Integration time = 300 S





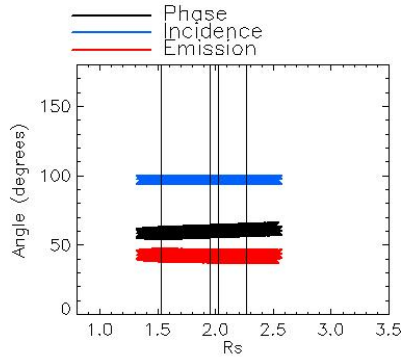
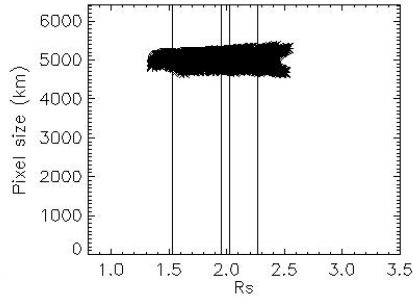
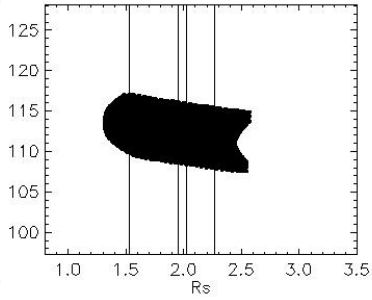
Observation Name:  
UVS\_066RLSUBMU50MP001\_CIRS

Observation Date:  
2008\_119\_09\_45\_51

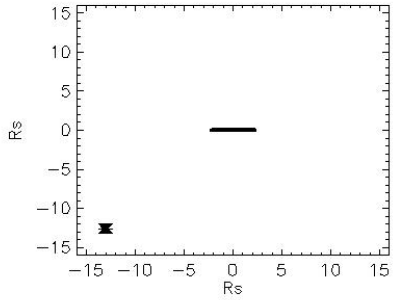
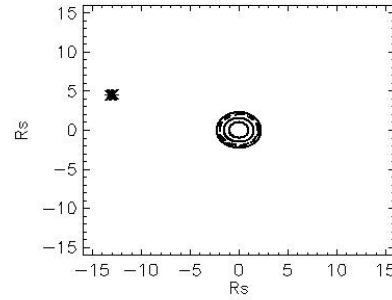
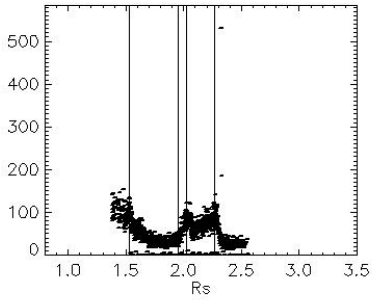
Observation Duration:  
6300 S

Integration time = 300 S

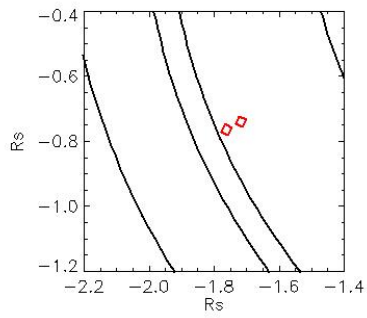
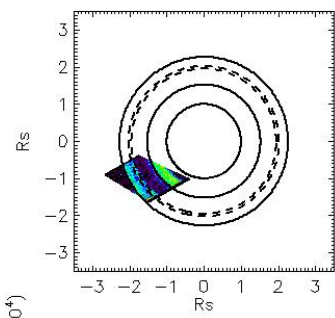
S/C—Observation Point Distance ( $10^4$ )



Total raw counts





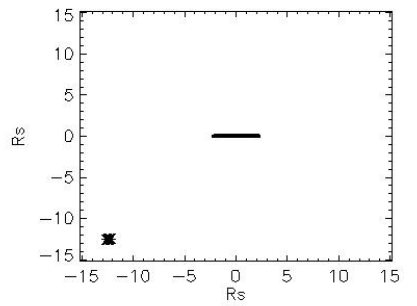
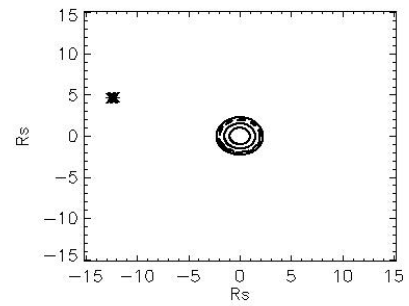
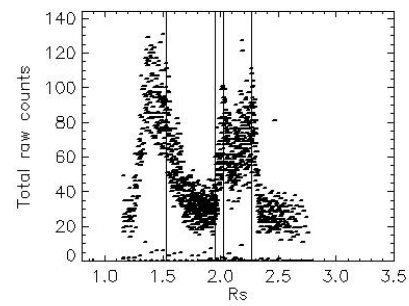
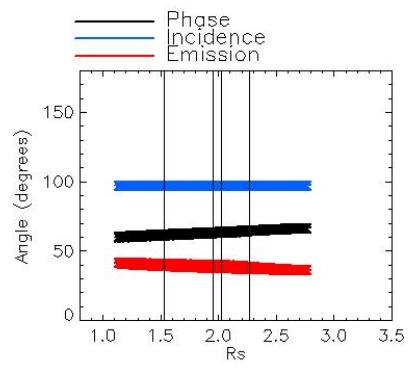
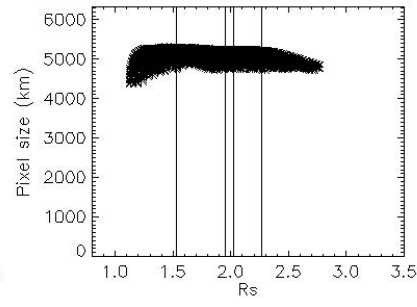
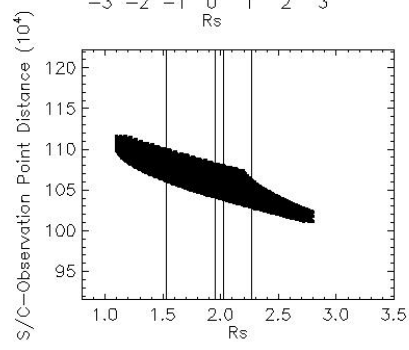


Observation Name:  
UVIS\_066RLSUBMU50MP001\_CIRS

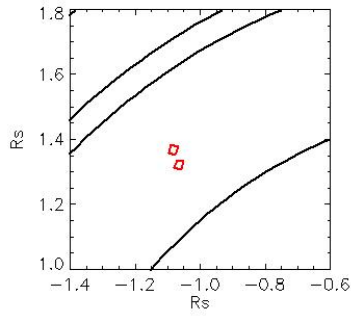
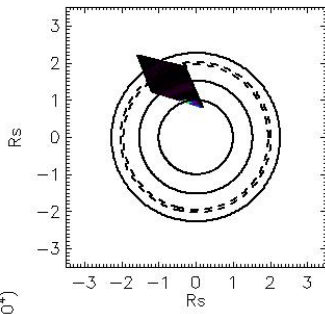
Observation Date:  
2008\_119\_12\_04\_51

Observation Duration:  
6300 S

Integration time = 300 S



— Phase  
— Incidence  
— Emission

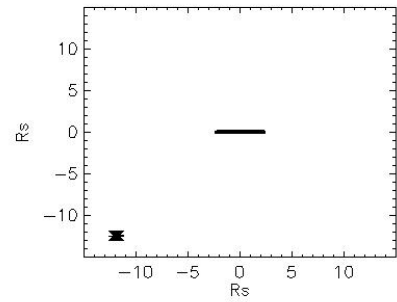
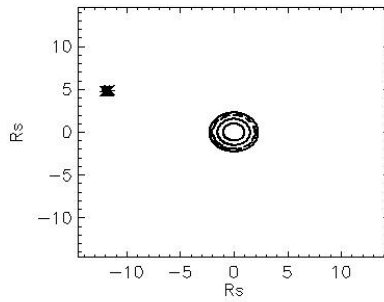
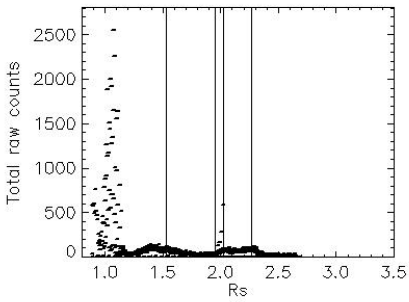
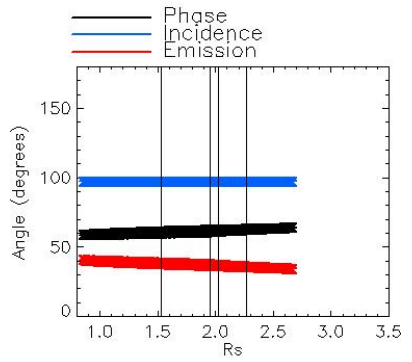
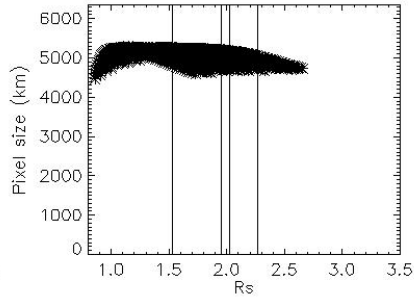
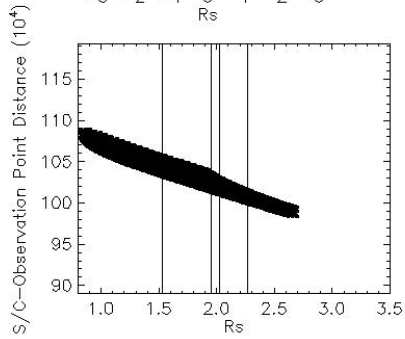


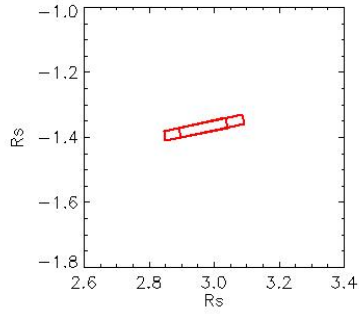
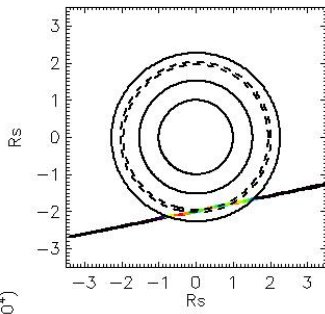
Observation Name:  
UVS\_066RLSUBMU50MP001\_CIRS

Observation Date:  
2008\_119\_13\_54\_51

Observation Duration:  
6300 S

Integration time = 300 S



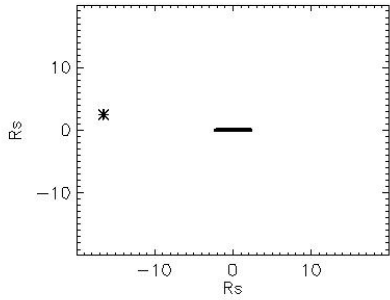
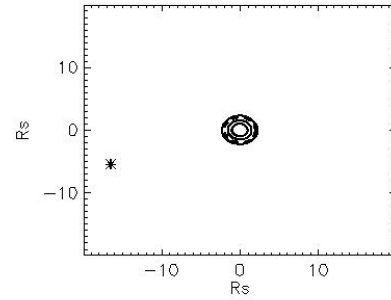
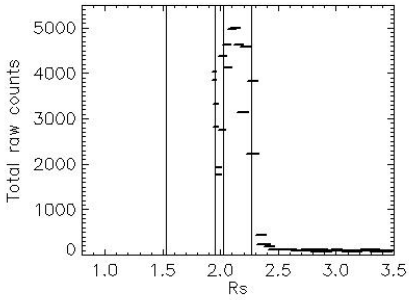
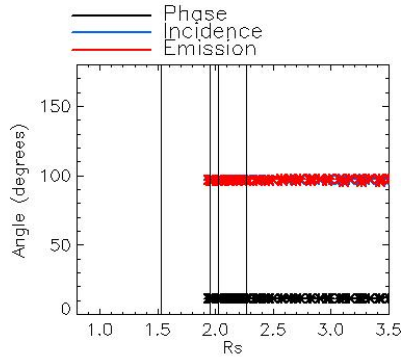
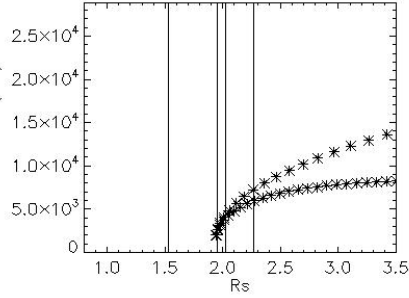
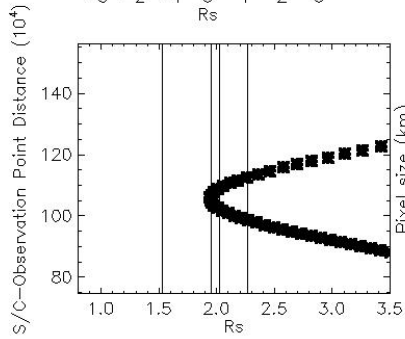


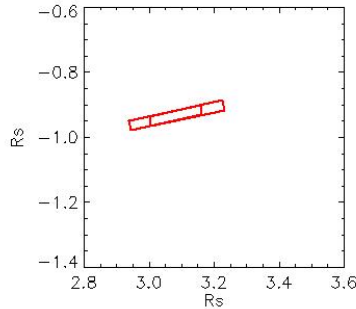
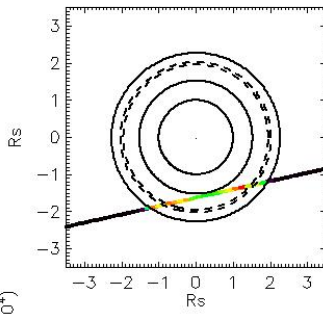
Observation Name:  
UVS\_066RLLATPHASE01\_VIMS

Observation Date:  
2008\_123\_09\_32\_06

Observation Duration:  
1800 S

Integration time = 600 S



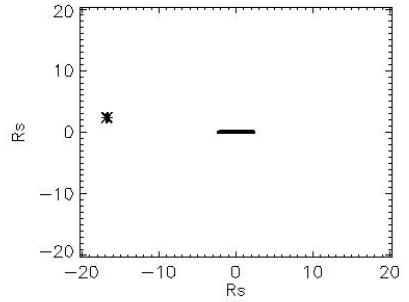
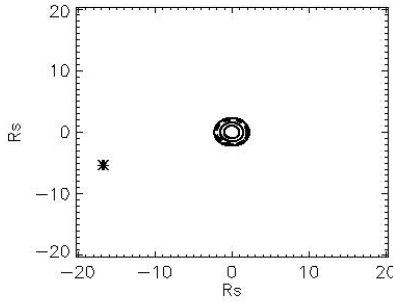
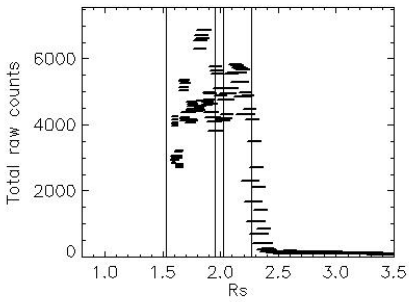
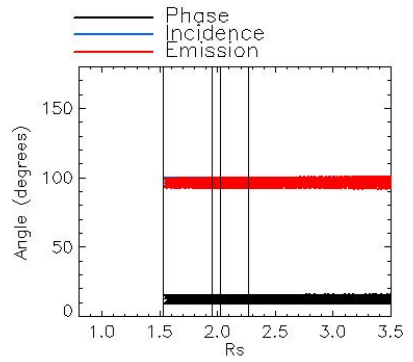
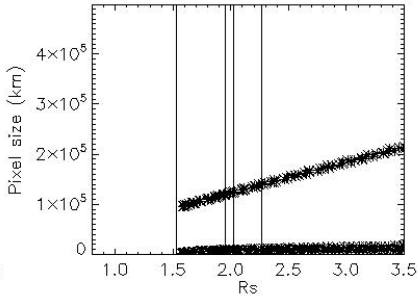
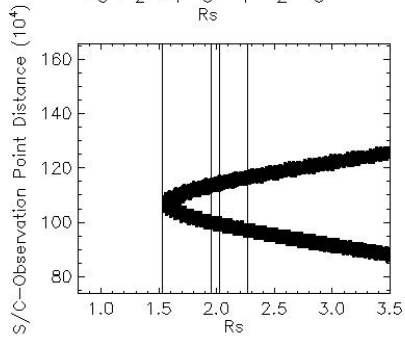


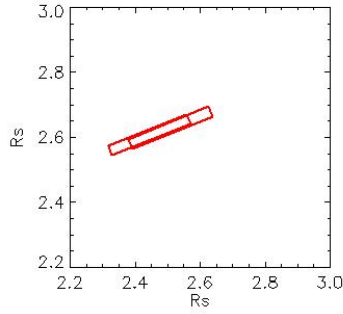
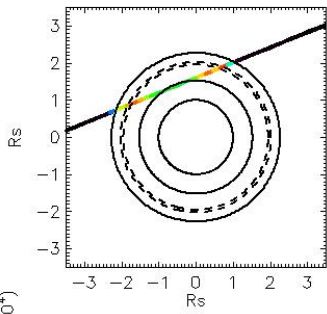
Observation Name:  
UVIS\_066RLLATPHASE001\_VIMS

Observation Date:  
2008\_123\_10\_09\_55

Observation Duration:  
3600 S

Integration time = 600 S



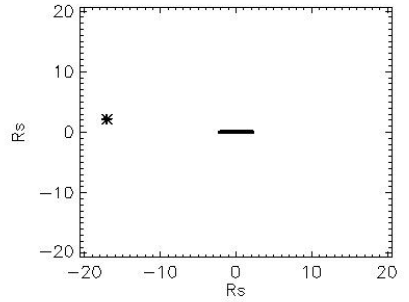
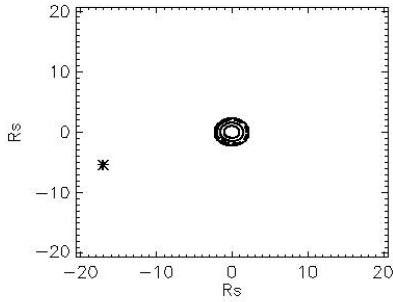
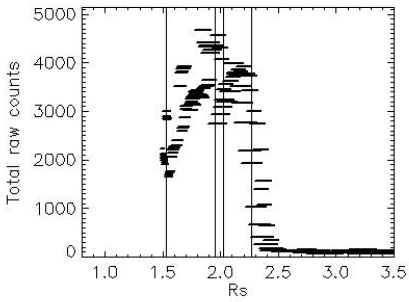
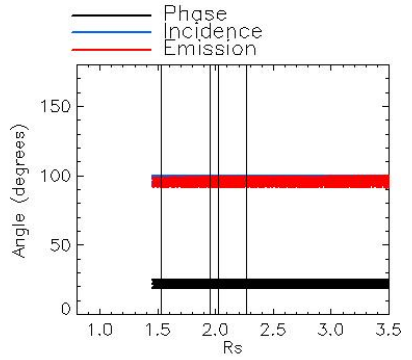
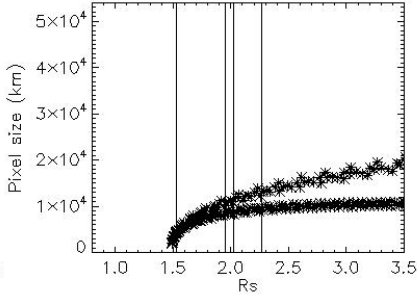
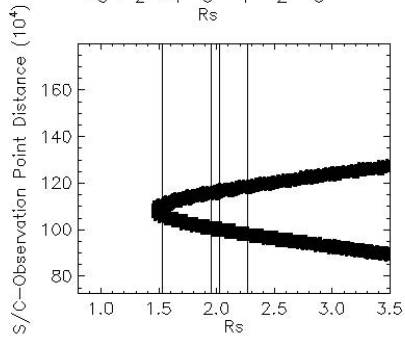


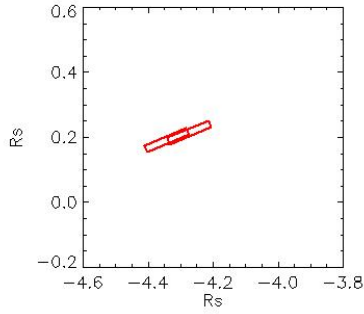
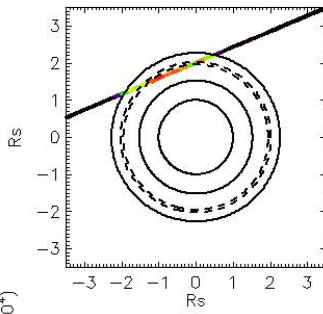
Observation Name:  
UVIS\_066RLLATPHASE001\_VIMS

Observation Date:  
2008\_123\_11\_22\_02

Observation Duration:  
3600 S

Integration time = 600 S



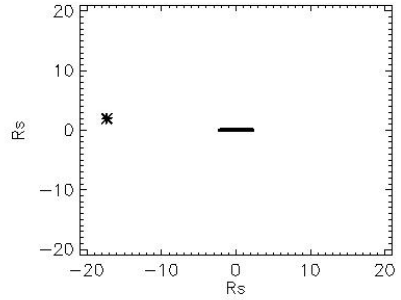
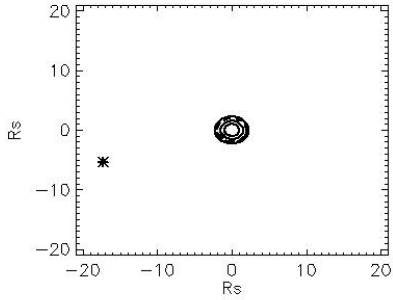
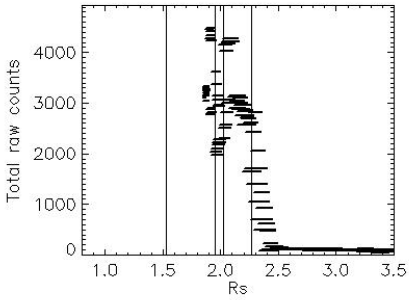
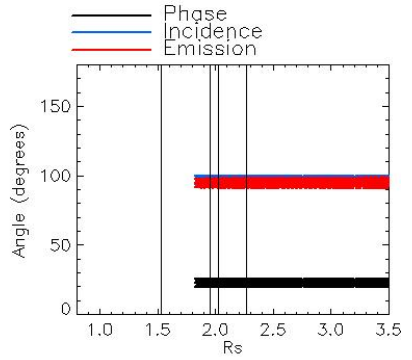
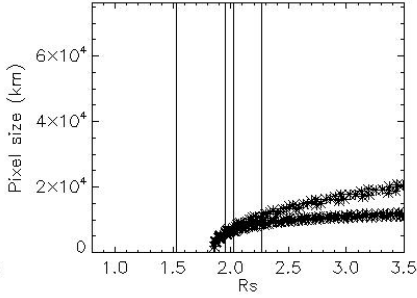
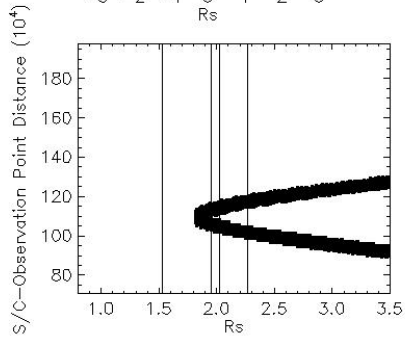


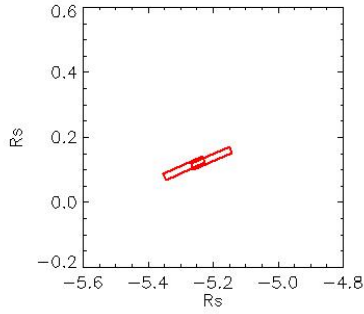
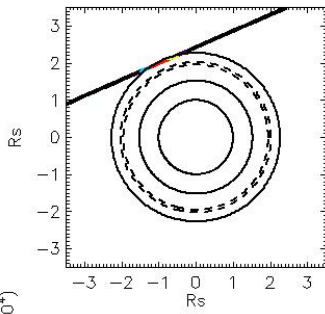
Observation Name:  
UMS\_066RLLATPHASE01\_VIMS

Observation Date:  
2008\_123\_12\_29\_51

Observation Duration:  
3600 S

Integration time = 600 S



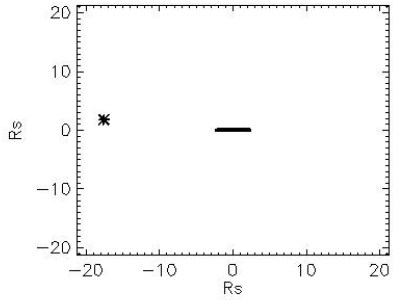
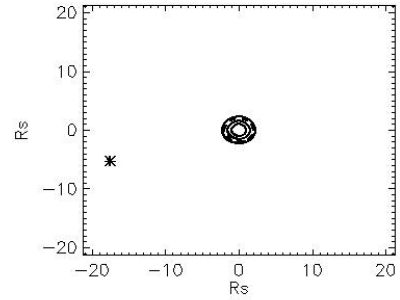
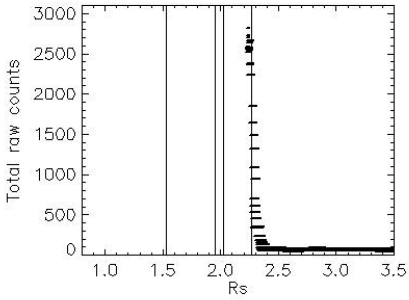
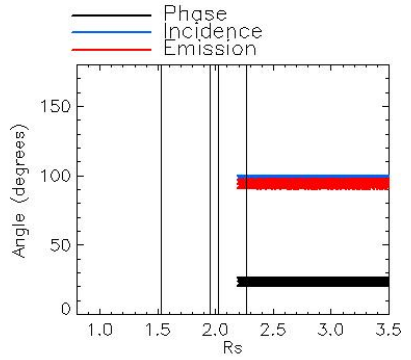
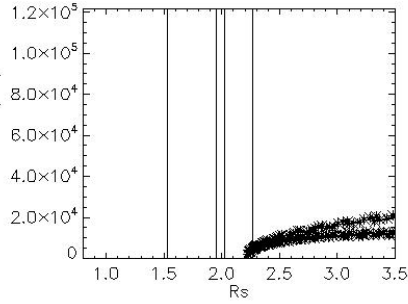
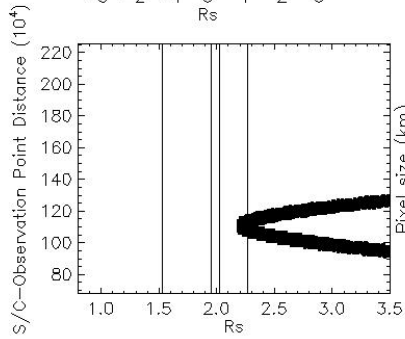


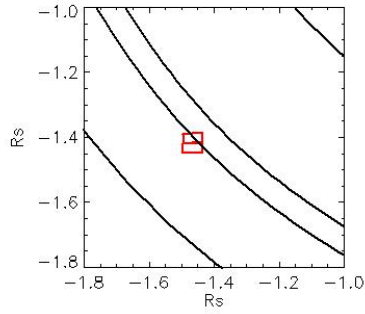
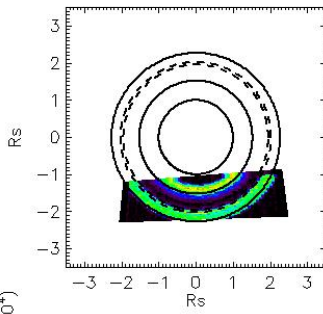
Observation Name:  
UMS\_066RLATPHASE01\_VIMS

Observation Date:  
2008\_123\_13\_37\_40

Observation Duration:  
3600 S

Integration time = 600 S



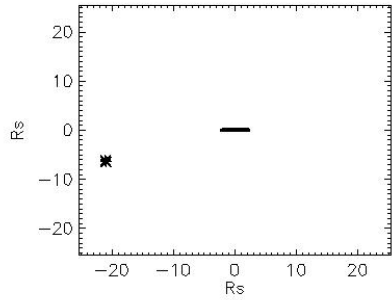
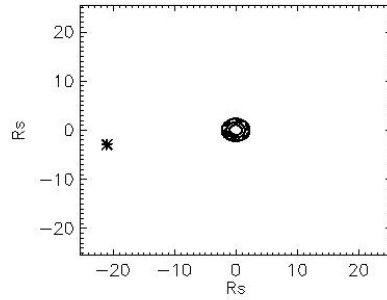
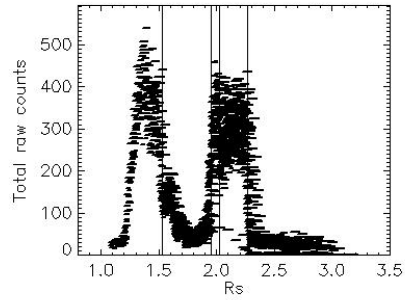
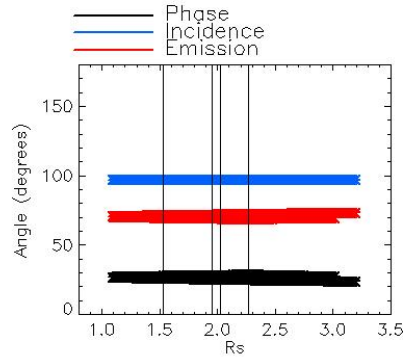
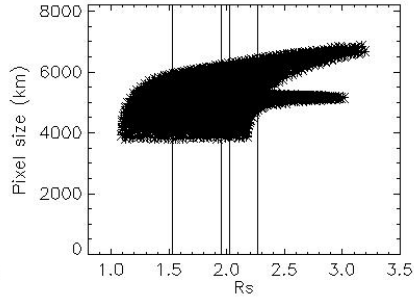
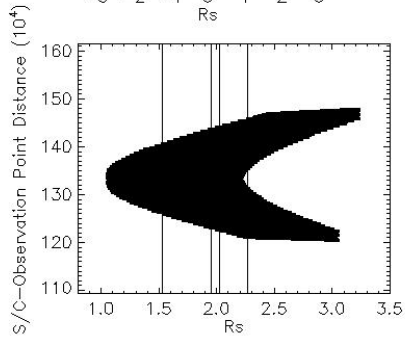


Observation Name:  
UMS\_068RLSUBMU20LP001\_CIRS

Observation Date:  
2008\_135\_07\_23\_51

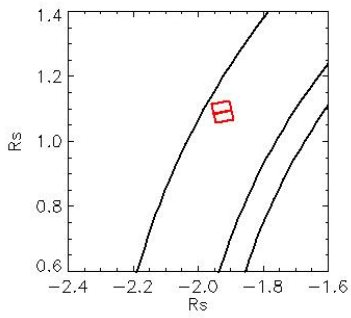
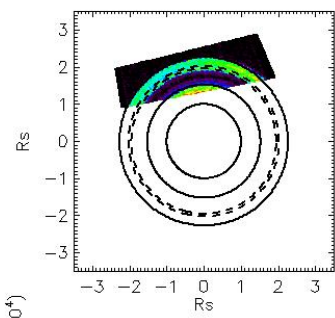
Observation Duration:  
10800 S

Integration time = 300 S

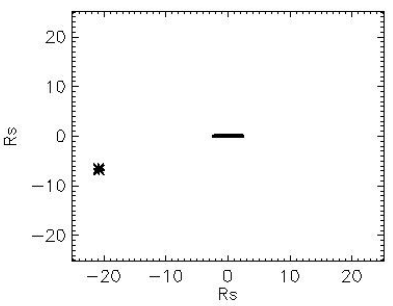
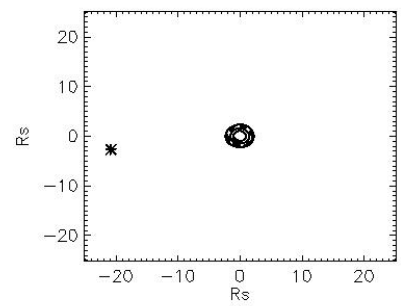
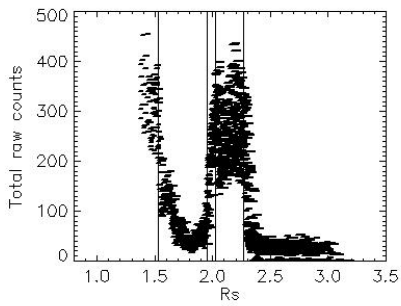
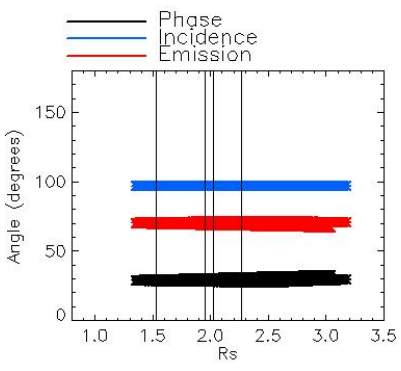
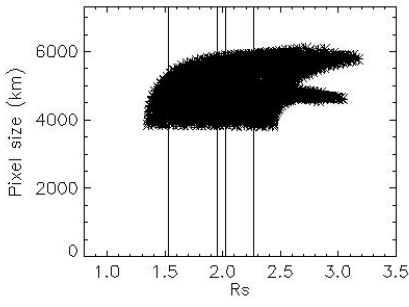
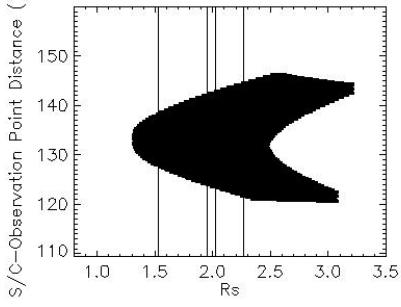


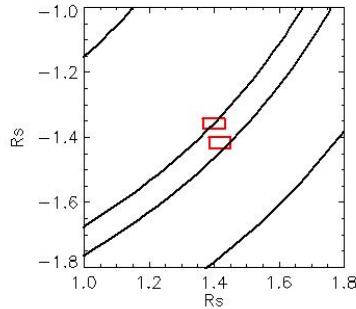
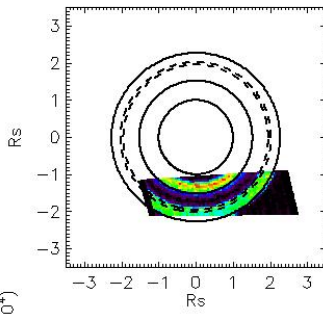
— Phase  
— Incidence  
— Emission





Observation Name:  
 UVS\_068RLSUBMU20LP001\_CIRS  
 Observation Date:  
 2008\_135\_11\_02\_52  
 Observation Duration:  
 10800 S  
 Integration time = 300 S



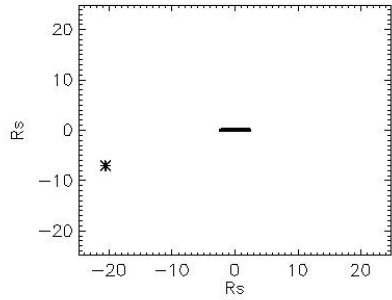
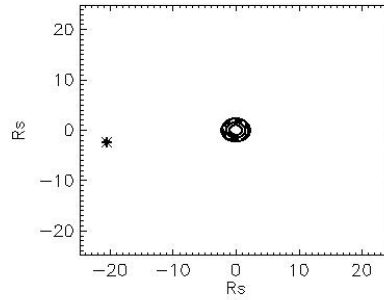
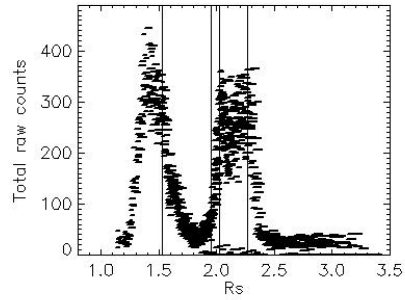
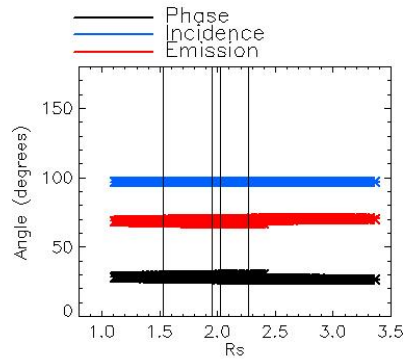
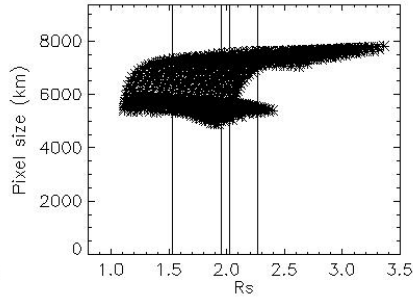
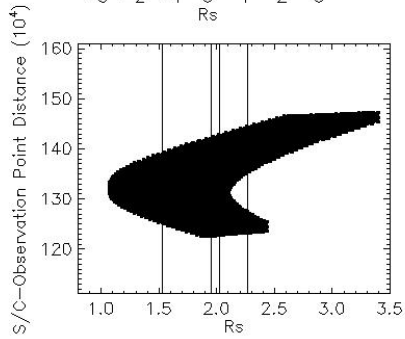


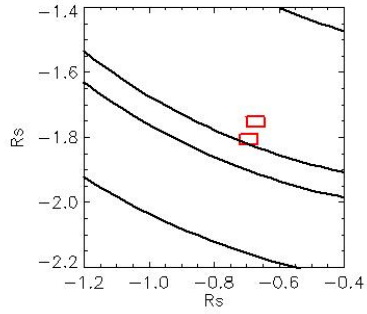
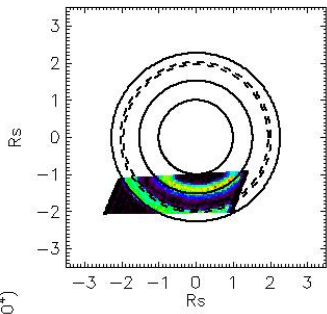
Observation Name:  
UMS\_068RLTEMPU20LP001\_CIRS

Observation Date:  
2008\_135\_14\_51\_51

Observation Duration:  
5400 S

Integration time = 300 S



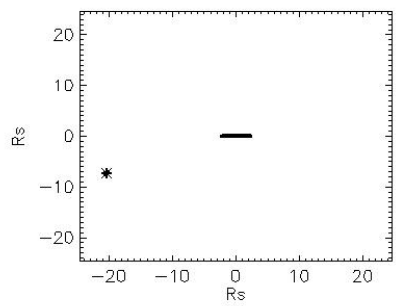
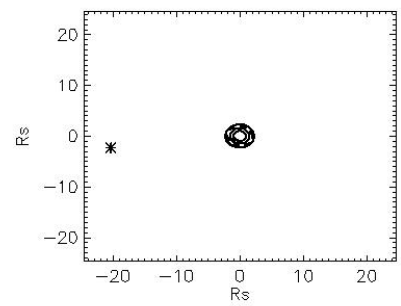
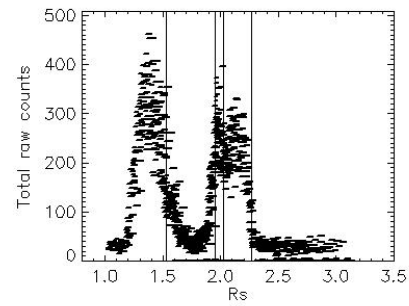
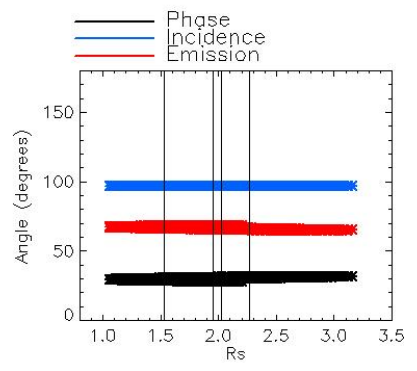
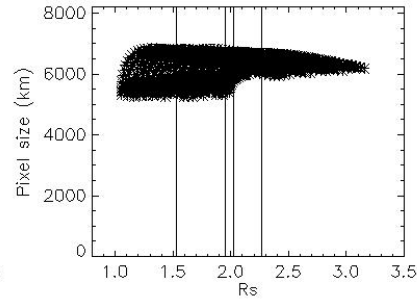
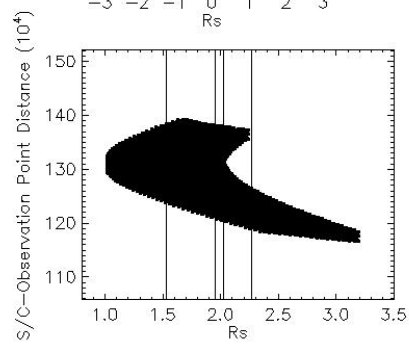


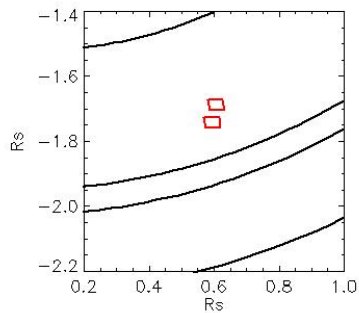
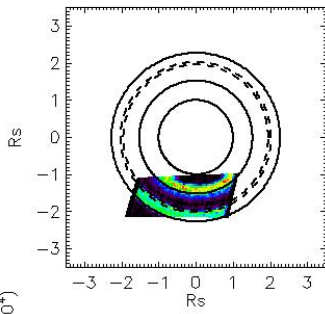
Observation Name:  
UVS\_068RLTEMPU20LP001\_CIRS

Observation Date:  
2008\_135\_16\_47\_51

Observation Duration:  
5400 S

Integration time = 300 S



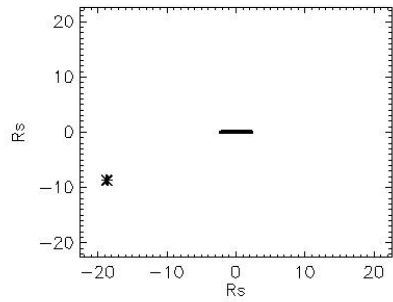
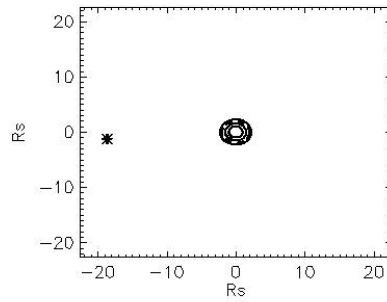
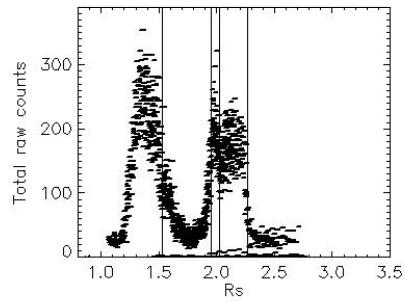
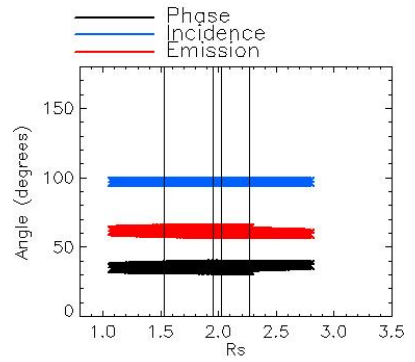
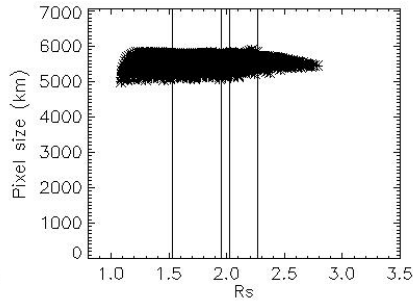
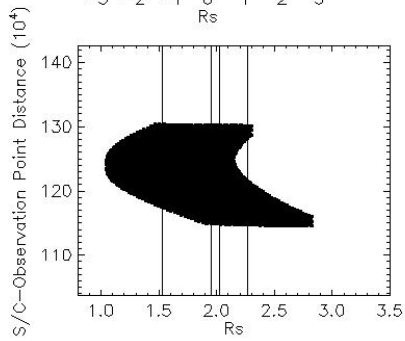


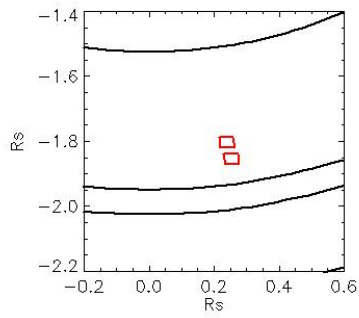
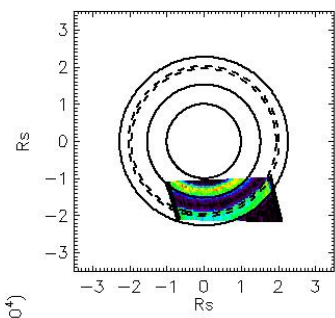
Observation Name:  
UMS\_068RLSUBMU33LP001\_CIRS

Observation Date:  
2008\_136\_06\_28\_51

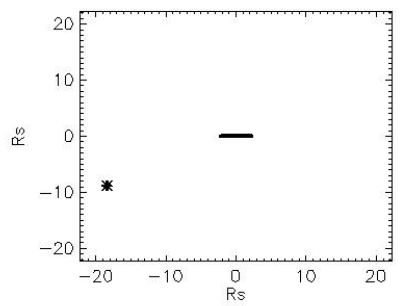
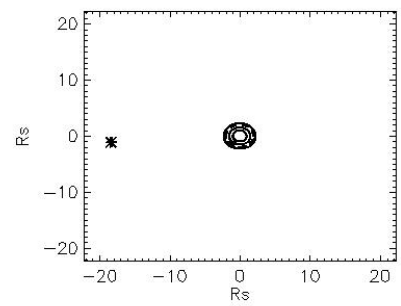
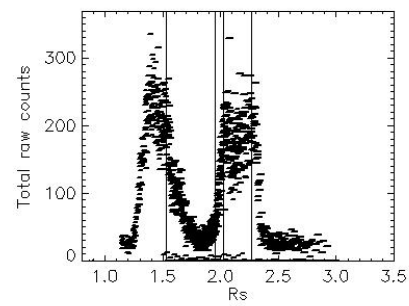
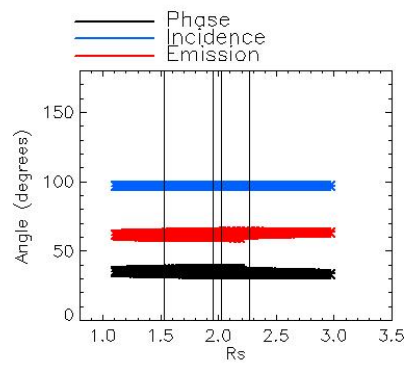
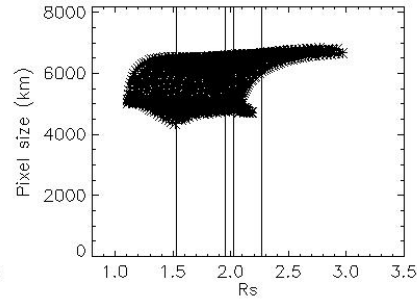
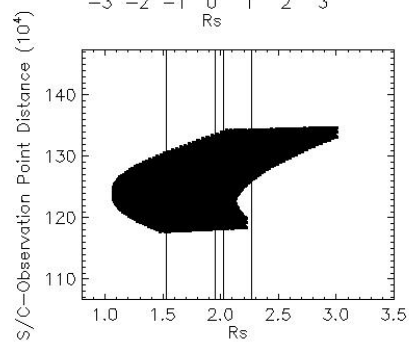
Observation Duration:  
6000 S

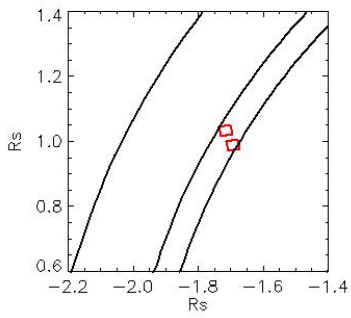
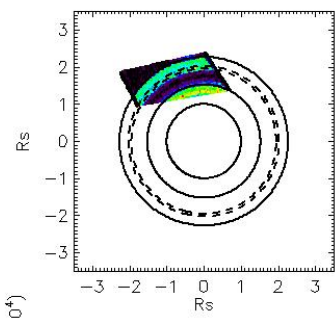
Integration time = 300 S





Observation Name:  
 UVS\_068RLSUBMU33LP001\_CIRS  
 Observation Date:  
 2008\_136\_08\_13\_51  
 Observation Duration:  
 6000 S  
 Integration time = 300 S



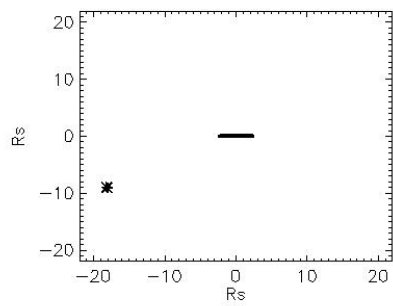
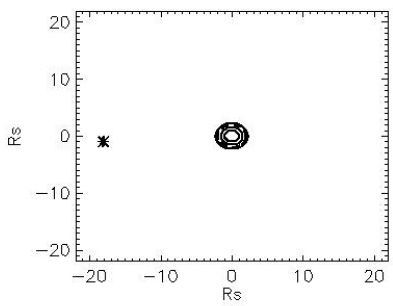
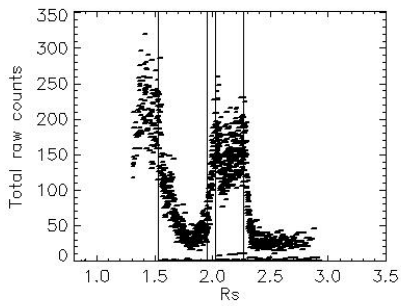
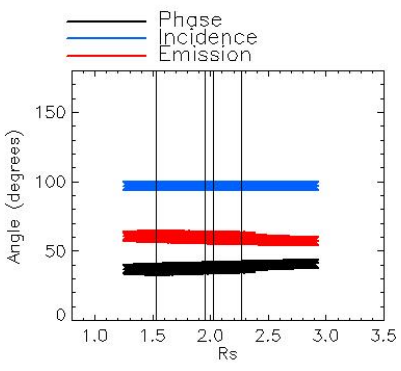
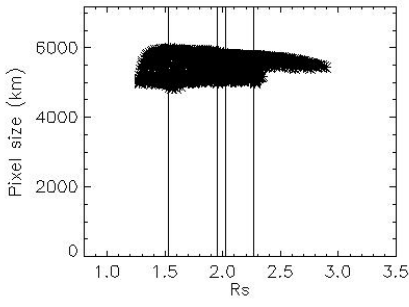
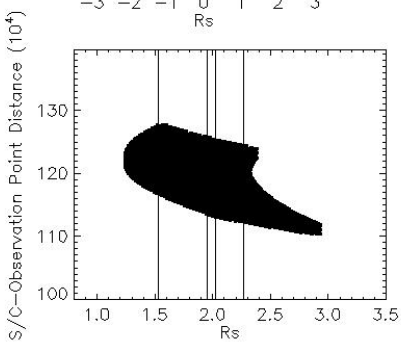


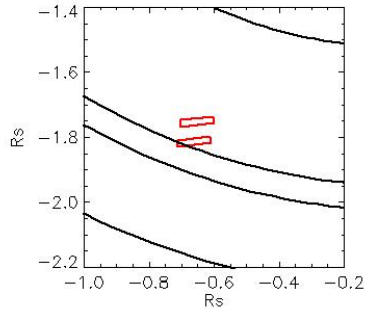
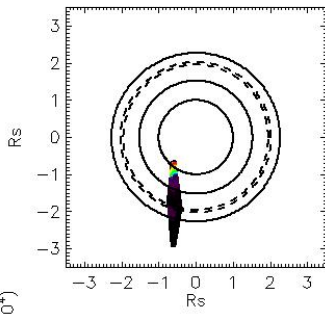
Observation Name:  
UMS\_068RLSUBMU33LP001\_CIRS

Observation Date:  
2008\_136\_09\_58\_51

Observation Duration:  
6000 S

Integration time = 300 S



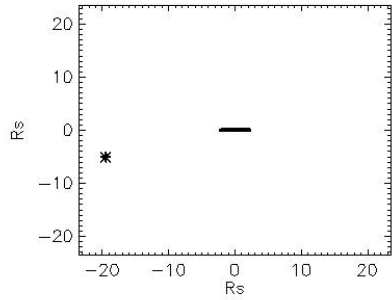
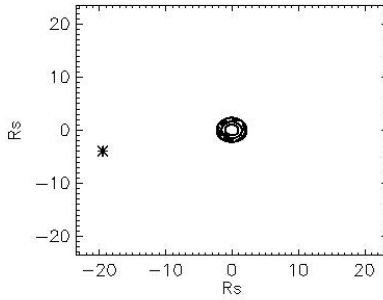
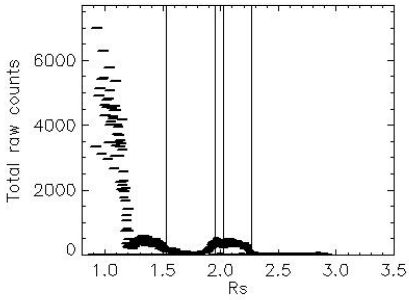
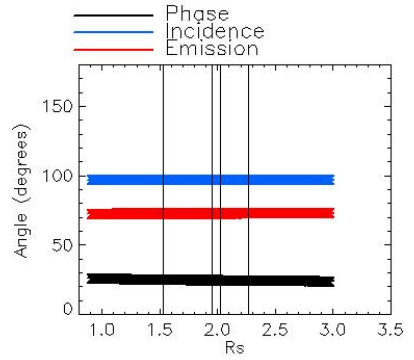
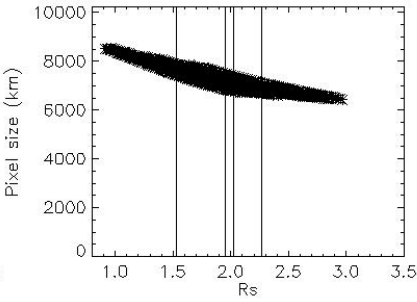
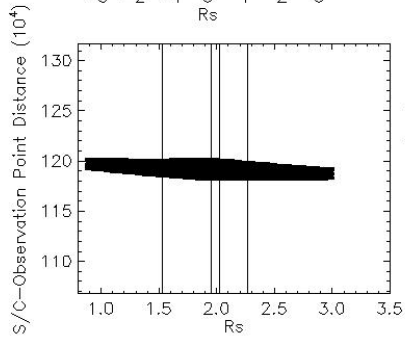


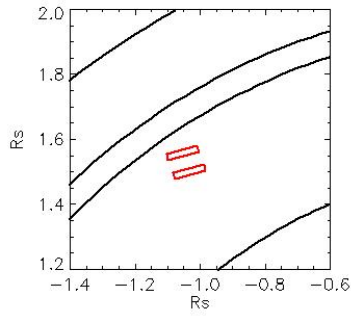
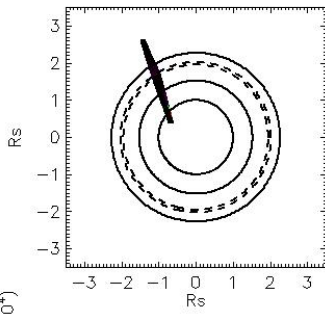
Observation Name:  
UMS\_070RLTEMPU16LP001\_CIRS

Observation Date:  
2008\_150\_23\_09\_51

Observation Duration:  
5100 S

Integration time = 300 S



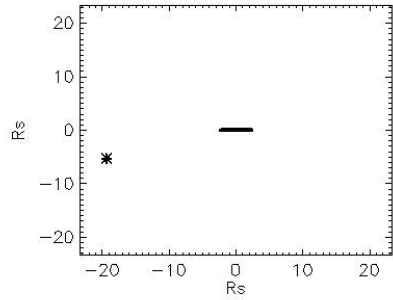
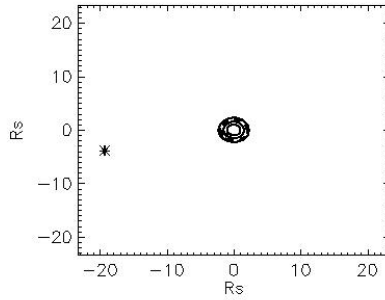
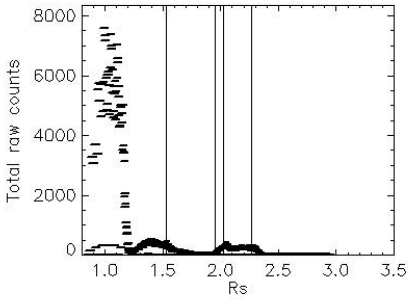
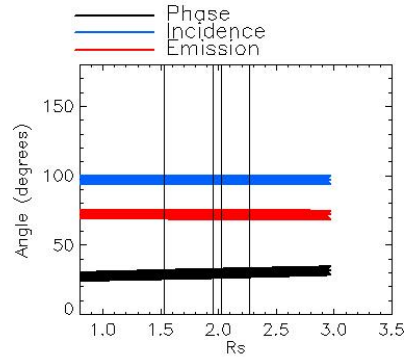
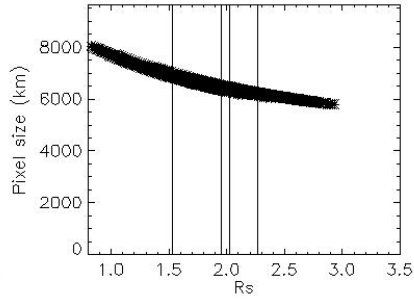
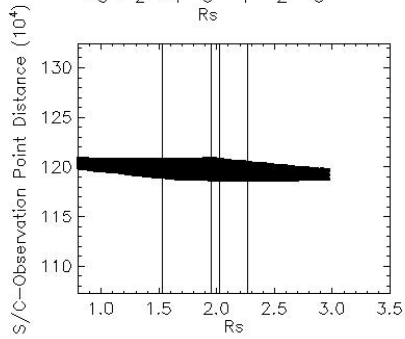


Observation Name:  
UMS\_070RLTEMPU16LP001\_CIRS

Observation Date:  
2008\_151\_00\_57\_51

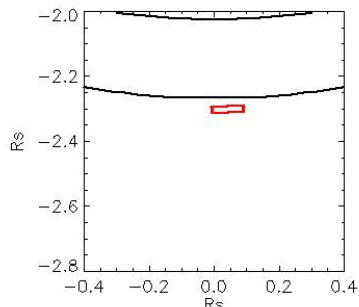
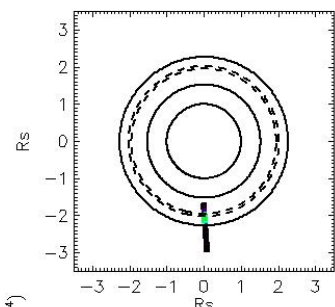
Observation Duration:  
5100 S

Integration time = 300 S



— Phase  
— Incidence  
— Emission



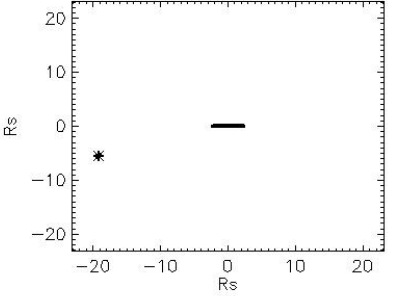
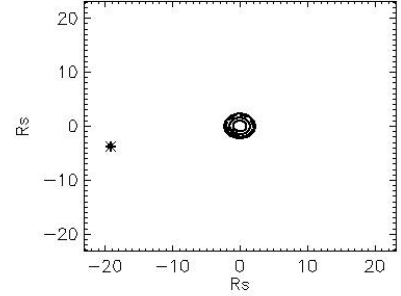
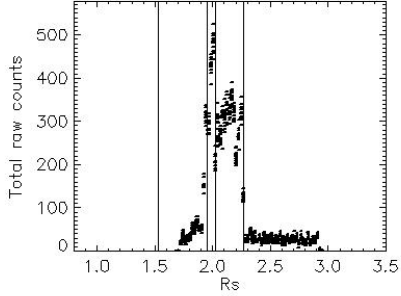
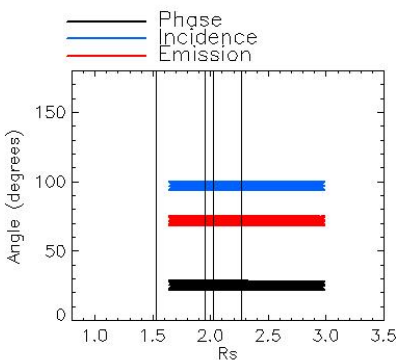
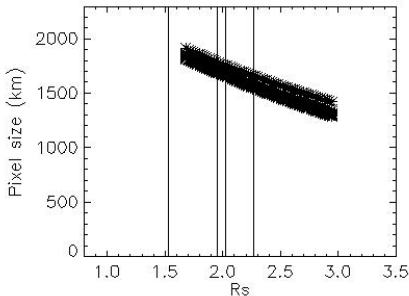
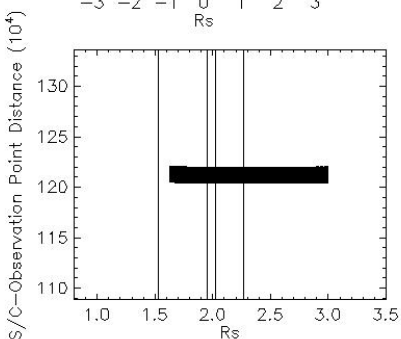


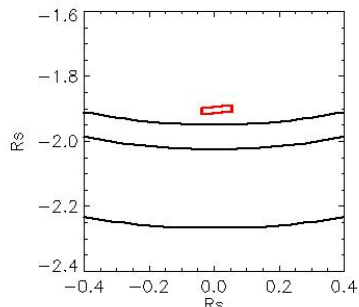
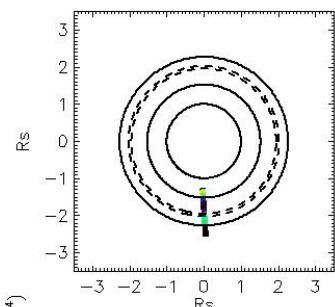
Observation Name:  
UMS\_070RLLATPHASE01\_VIMS

Observation Date:  
2008\_151\_02\_52\_22

Observation Duration:  
3900 S

Integration time = 300 S



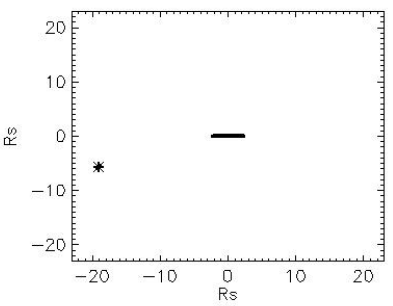
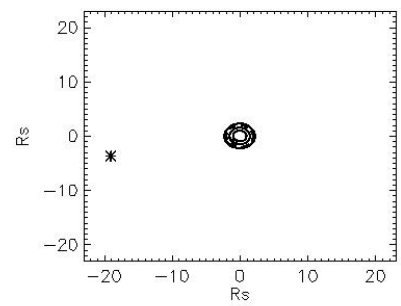
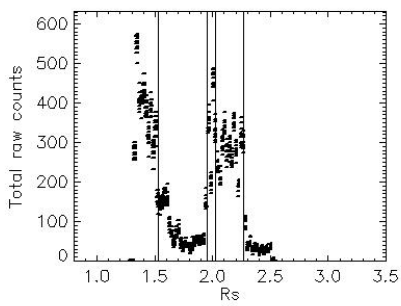
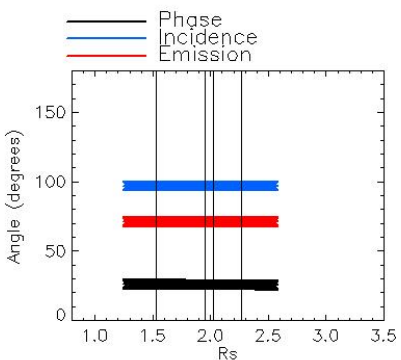
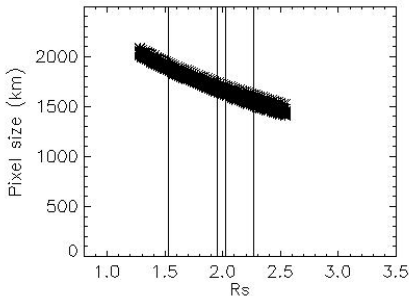
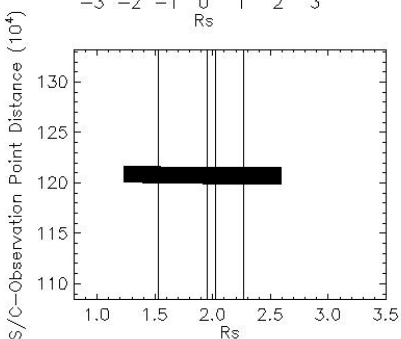


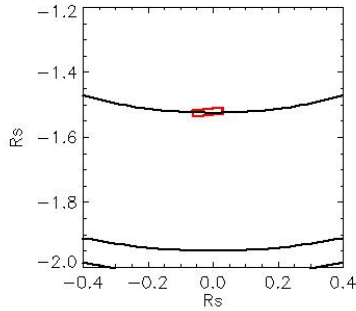
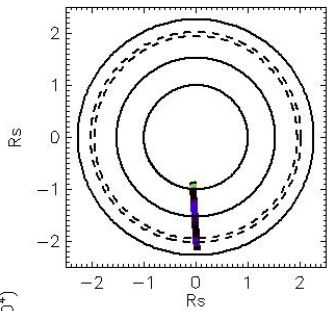
Observation Name:  
UMS\_070RLLATPHASE01\_VIMS

Observation Date:  
2008\_151\_03\_59\_47

Observation Duration:  
3900 S

Integration time = 300 S





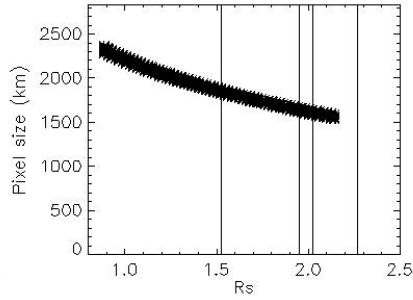
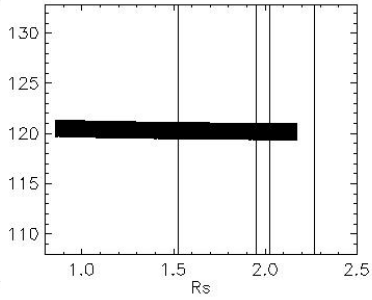
Observation Name:  
UMS\_070RLLATPHASE001\_VIMS

Observation Date:  
2008\_151\_05\_07\_12

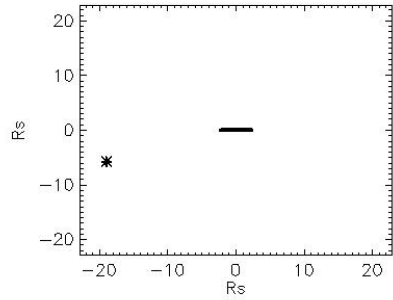
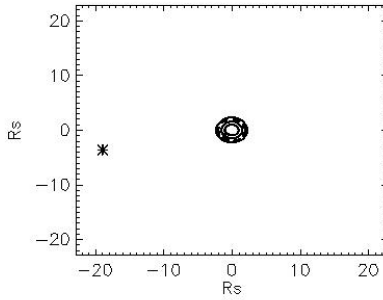
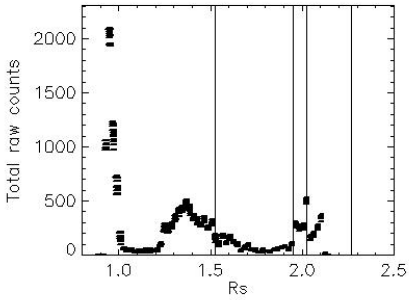
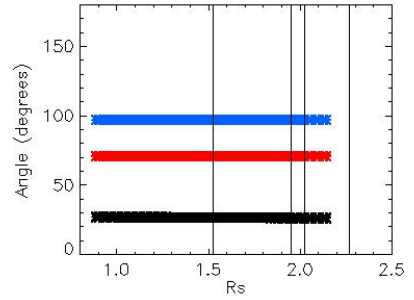
Observation Duration:  
3900 S

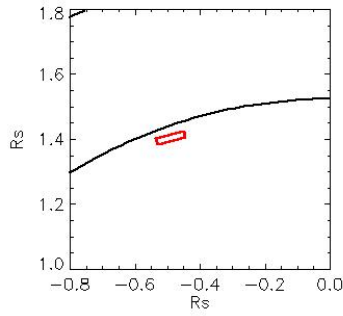
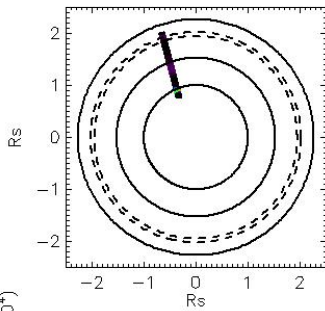
Integration time = 300 S

S/C—Observation Point Distance ( $10^4$ )



— Phase  
— Incidence  
— Emission



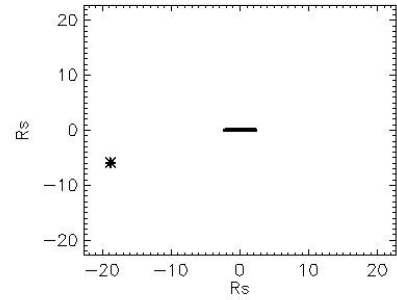
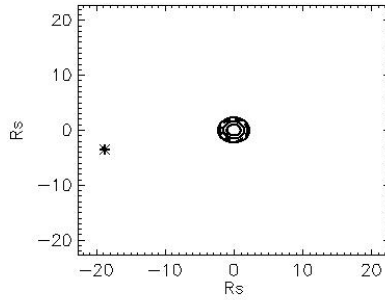
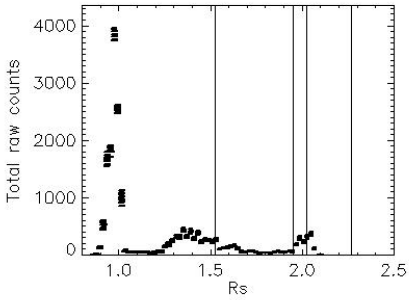
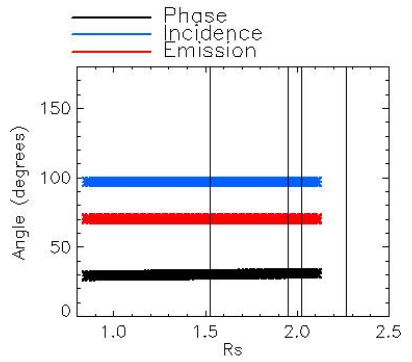
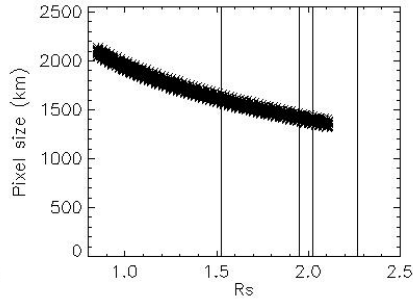
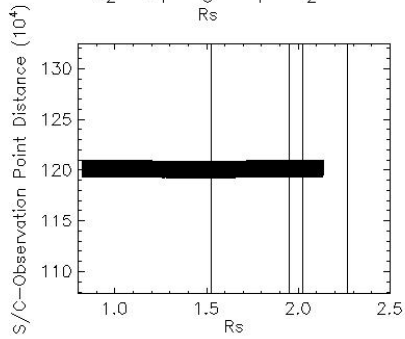


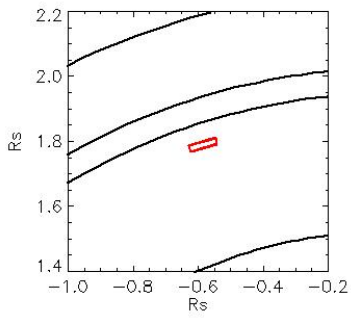
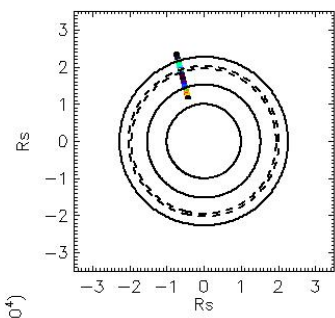
Observation Name:  
UVS\_070RLLATPHASE001\_VIMS

Observation Date:  
2008\_151\_06\_20\_22

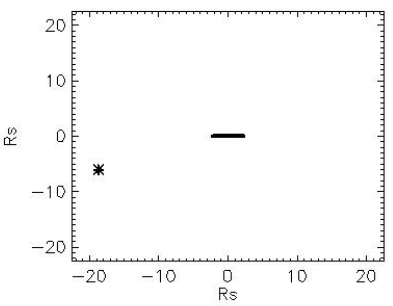
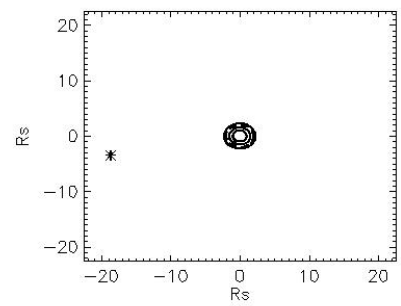
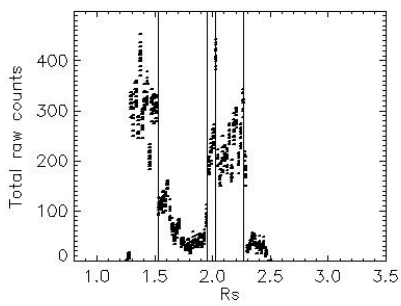
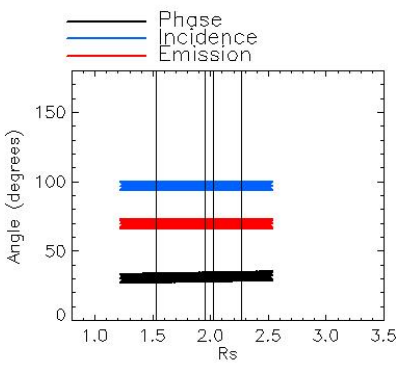
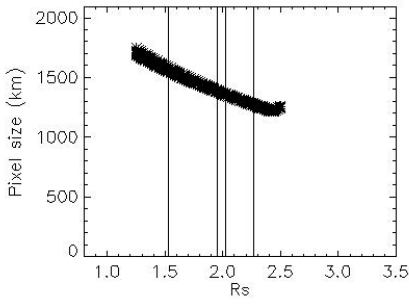
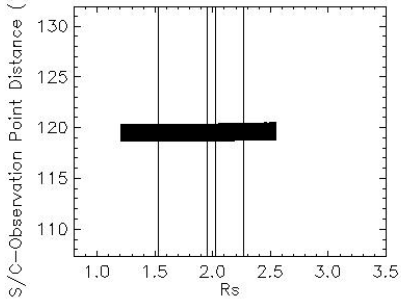
Observation Duration:  
3900 S

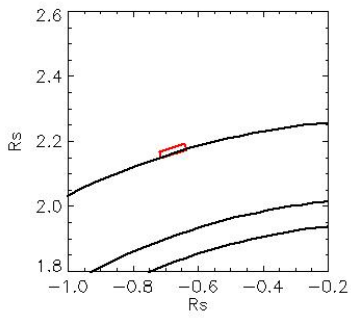
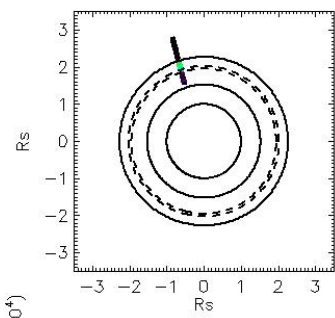
Integration time = 300 S



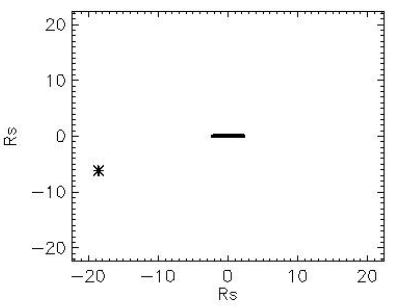
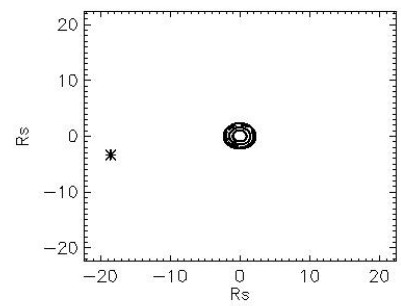
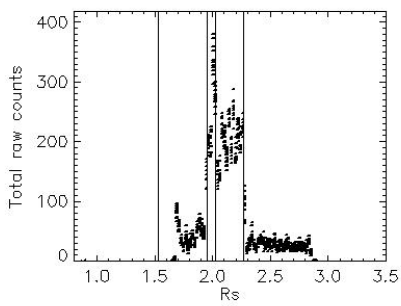
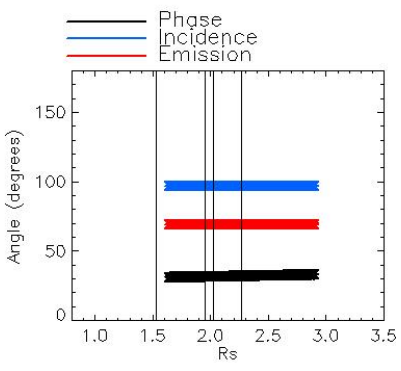
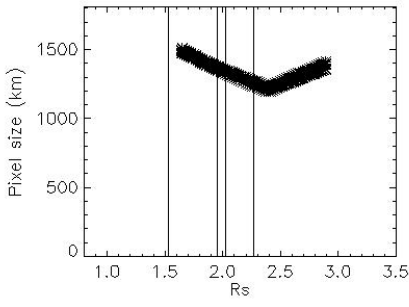
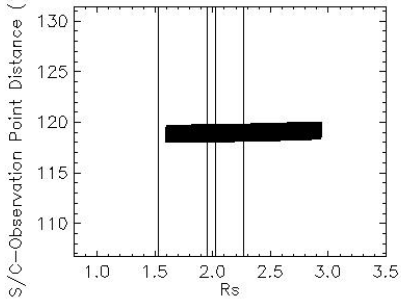


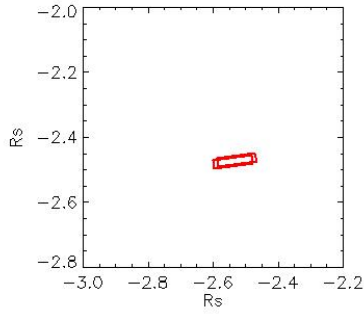
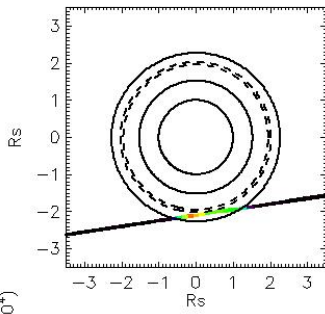
Observation Name:  
 UVS\_070RLLATPHASE01\_VIMS  
 Observation Date:  
 2008\_151\_07\_27\_47  
 Observation Duration:  
 3900 S  
 Integration time = 300 S





Observation Name:  
 UVS\_070RLLATPHASE01\_VIMS  
 Observation Date:  
 2008\_151\_08\_35\_12  
 Observation Duration:  
 3900 S  
 Integration time = 300 S



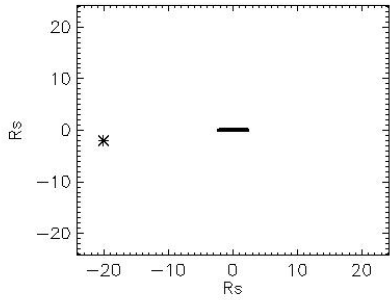
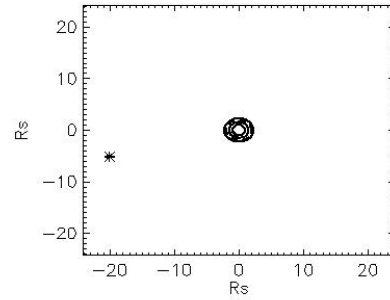
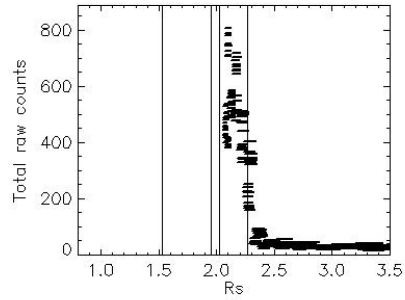
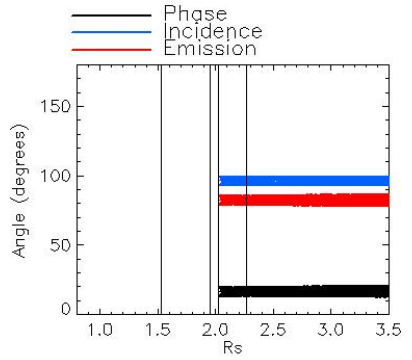
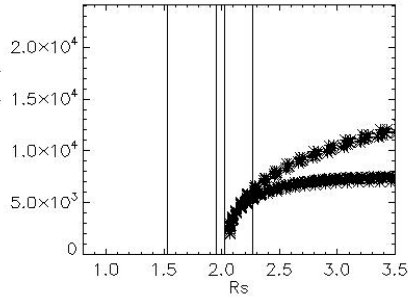
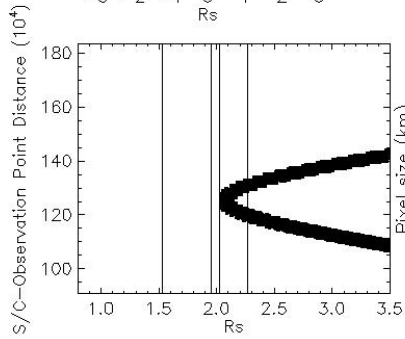


Observation Name:  
UMS\_070RLSUBMU08LP001\_CIRS

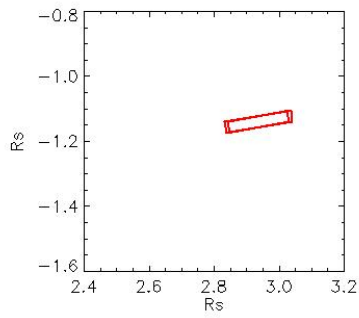
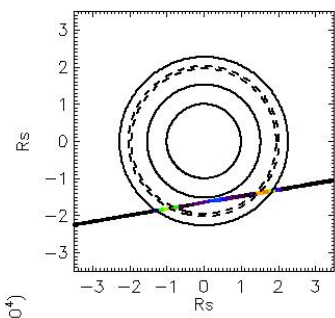
Observation Date:  
2008\_157\_05\_15\_51

Observation Duration:  
2700 S

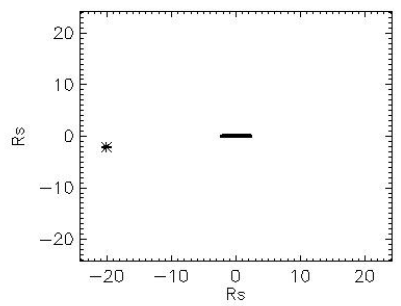
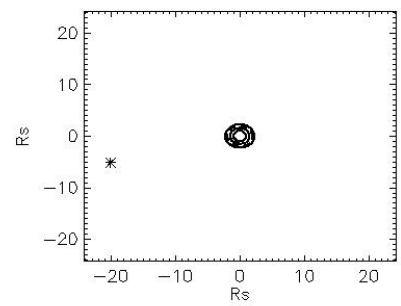
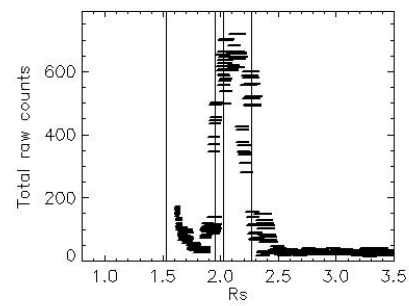
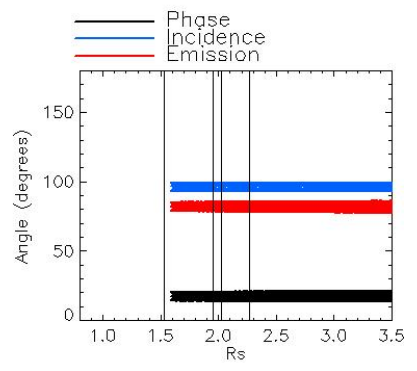
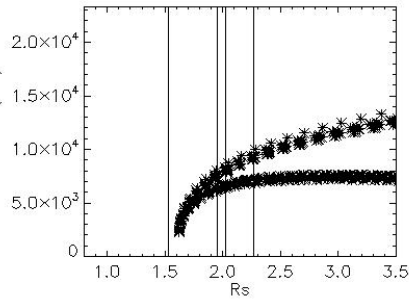
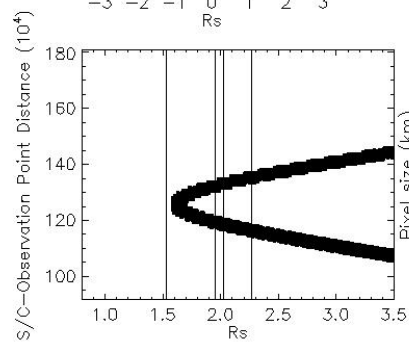
Integration time = 300 S



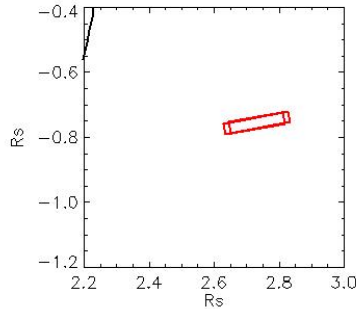
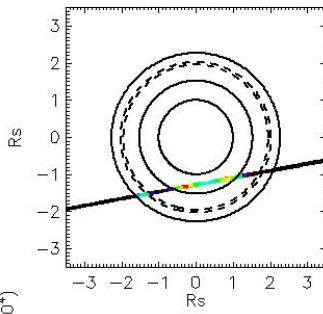
— Phase  
— Incidence  
— Emission



Observation Name:  
 UVS\_070RLSUBMU08LP001\_CIRS  
 Observation Date:  
 2008\_157\_06\_06\_51  
 Observation Duration:  
 2700 S  
 Integration time = 300 S







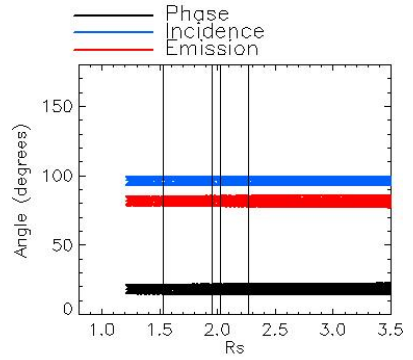
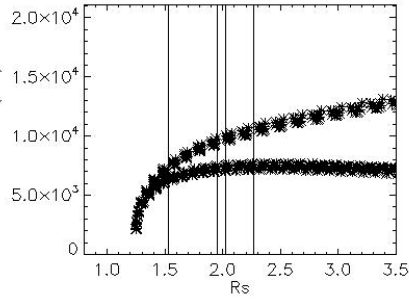
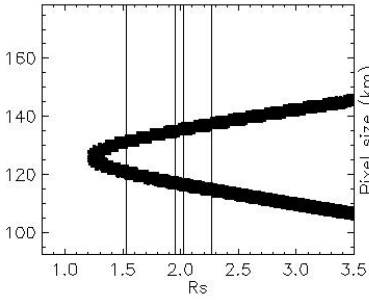
Observation Name:  
UMS\_070RLSUBMU08LP001\_CIRS

Observation Date:  
2008\_157\_06\_57\_51

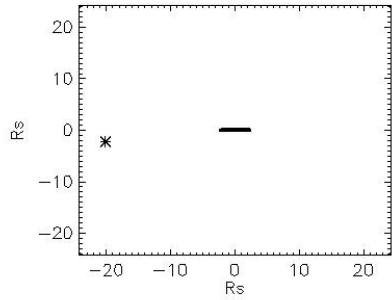
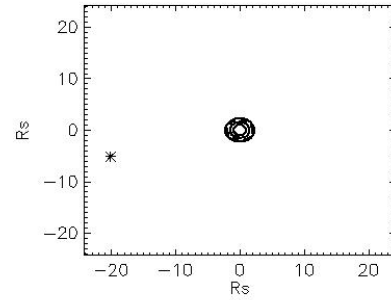
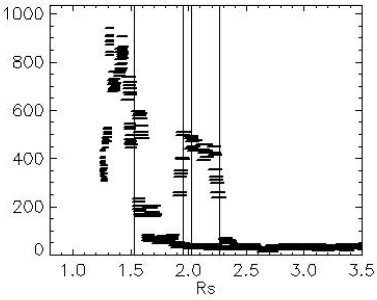
Observation Duration:  
2700 S

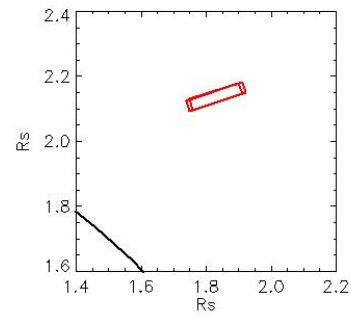
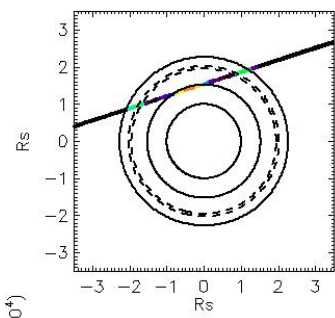
Integration time = 300 S

S/C—Observation Point Distance ( $10^4$ )

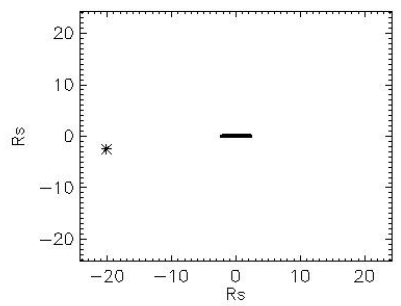
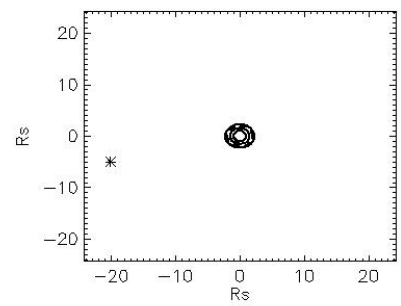
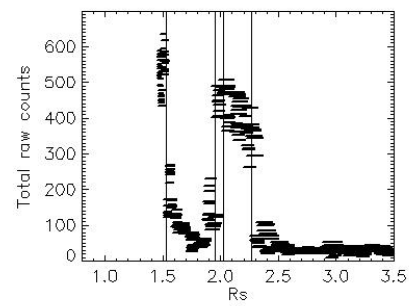
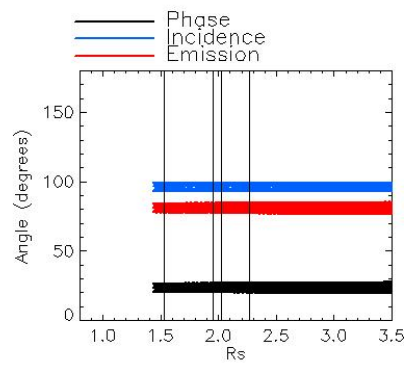
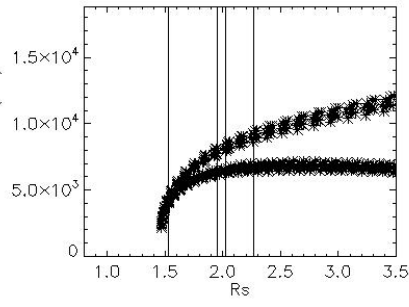
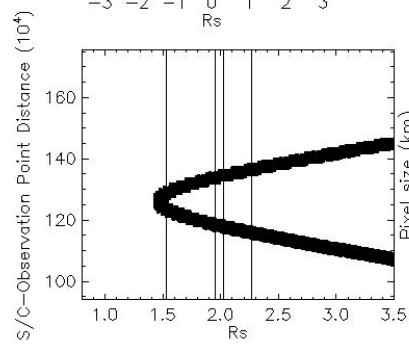


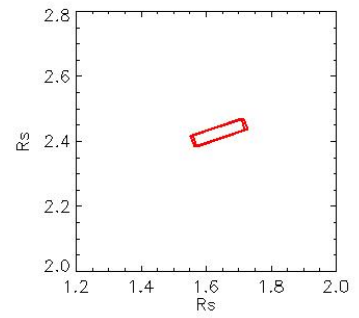
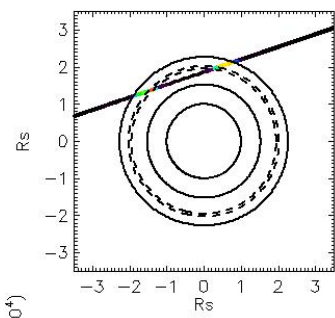
Total raw counts



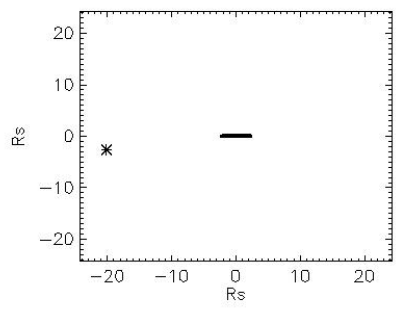
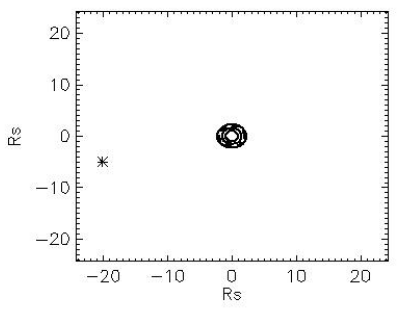
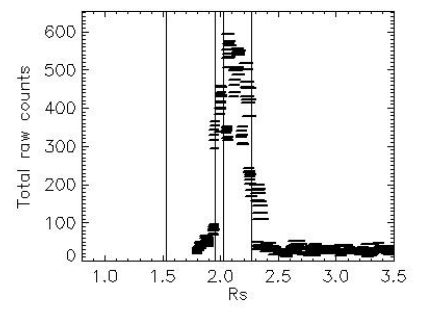
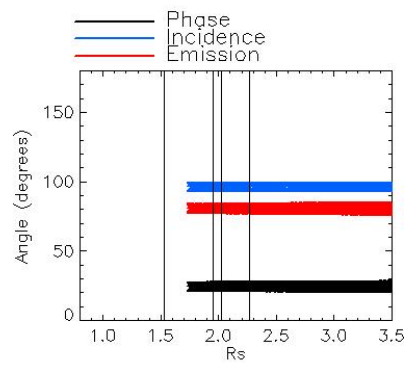
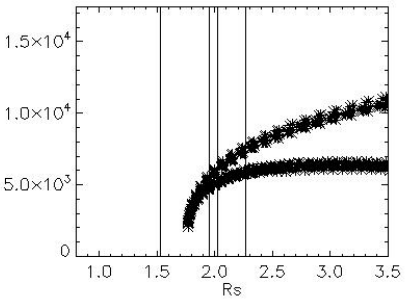
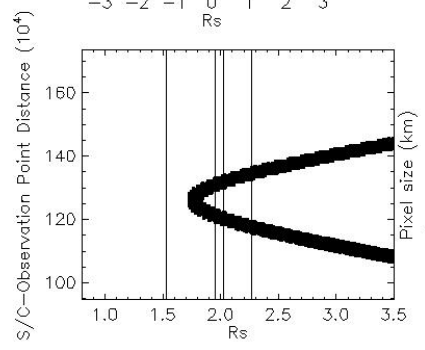


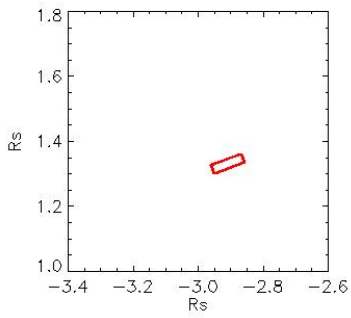
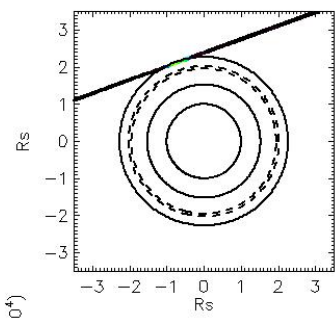
Observation Name:  
 UVS\_070RLSUBMU08LP001\_CIRS  
 Observation Date:  
 2008\_157\_08\_27\_51  
 Observation Duration:  
 2700 S  
 Integration time = 300 S





Observation Name:  
 UVS\_070RLSUBMU08LP001\_CIRS  
 Observation Date:  
 2008\_157\_09\_18\_51  
 Observation Duration:  
 2700 S  
 Integration time = 300 S





Observation Name:  
 UVS\_070RLSUBMU08LP001\_CIRS  
 Observation Date:  
 2008\_157\_10\_09\_51  
 Observation Duration:  
 2700 S  
 Integration time = 300 S

