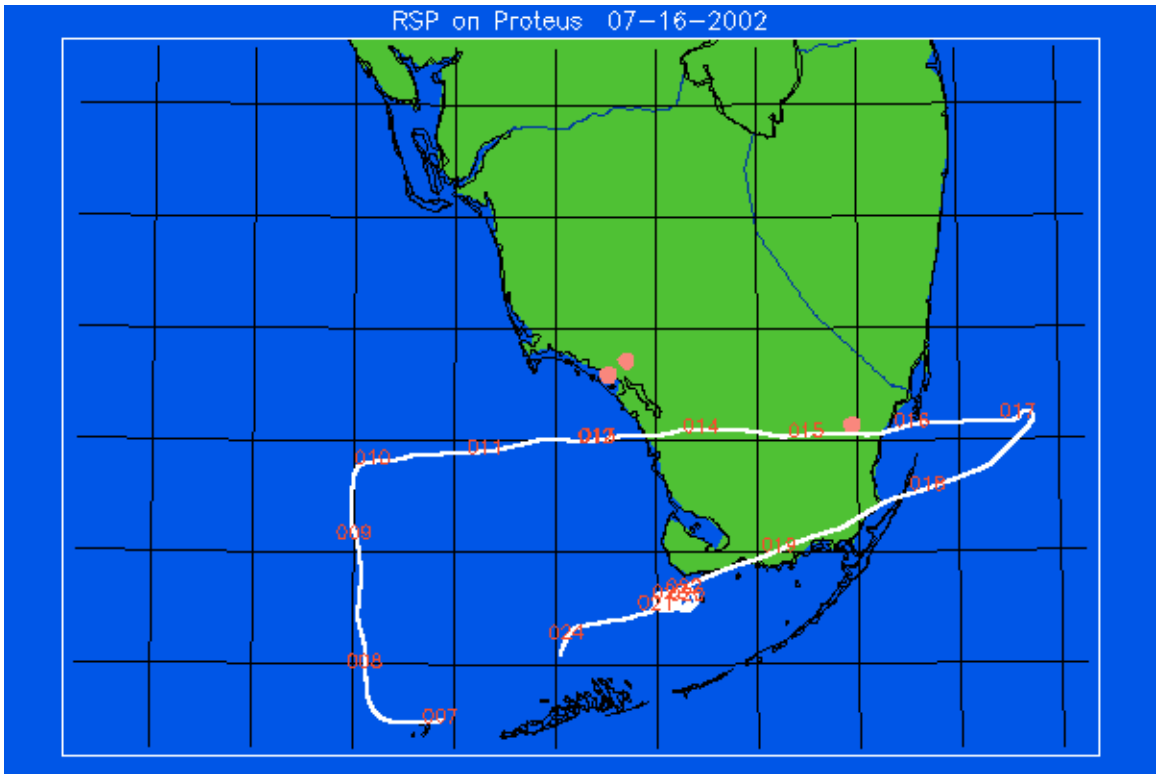
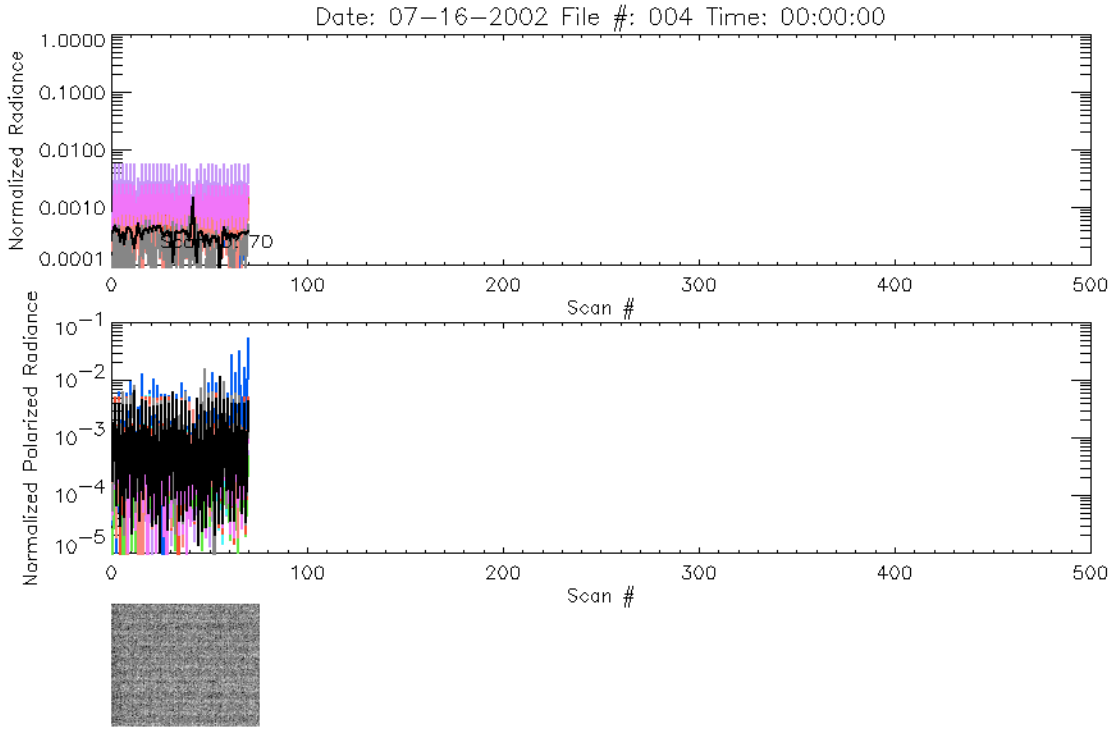
RSP Quick Look Data

In the following figures the flight tracks of the Proteus aircraft are shown with the location at which an RSP file (###) started overlaid on the flight track. These figures of the flight tracks are followed by plots of the nadir radiance and polarized radiance observed by the RSP at 410, 470, 555, 670, 865, 960, 1590, 1880 and 2250 (blue, mauve, turquoise, green, red, orange, fuschia, grey and black respectively) from the given files. The normalized radiance is shown in the top panel and the normalized polarized radiance is shown in the middle panel. The image at the bottom of each RSP data file figure is constructed from overlapping strip images which are sequentially cross correlated with one another. This is used as a check on aircraft attitude and v/h among inhomogeneous clouds. The real and imaginary values of refractive index for water and ice for the SWIR bands are:

	NRIce	NIIce	NRWat	NIWat
1.58886	1.2895	0.000318	1.3182	0.000104
1.88447	1.2788	0.000317	1.3101	0.000880
2.26438	1.2562	0.000254	1.2875	0.000419

This means that typically for ice clouds the 1590 reflectance is lower than the 2250 nm reflectance. The RSP instrument scans along track and so for each nadir pixel shown in these figures there are also measurements over a view angle range of +50° to -70° (positive is in the direction of aircraft motion) every 0.8°.

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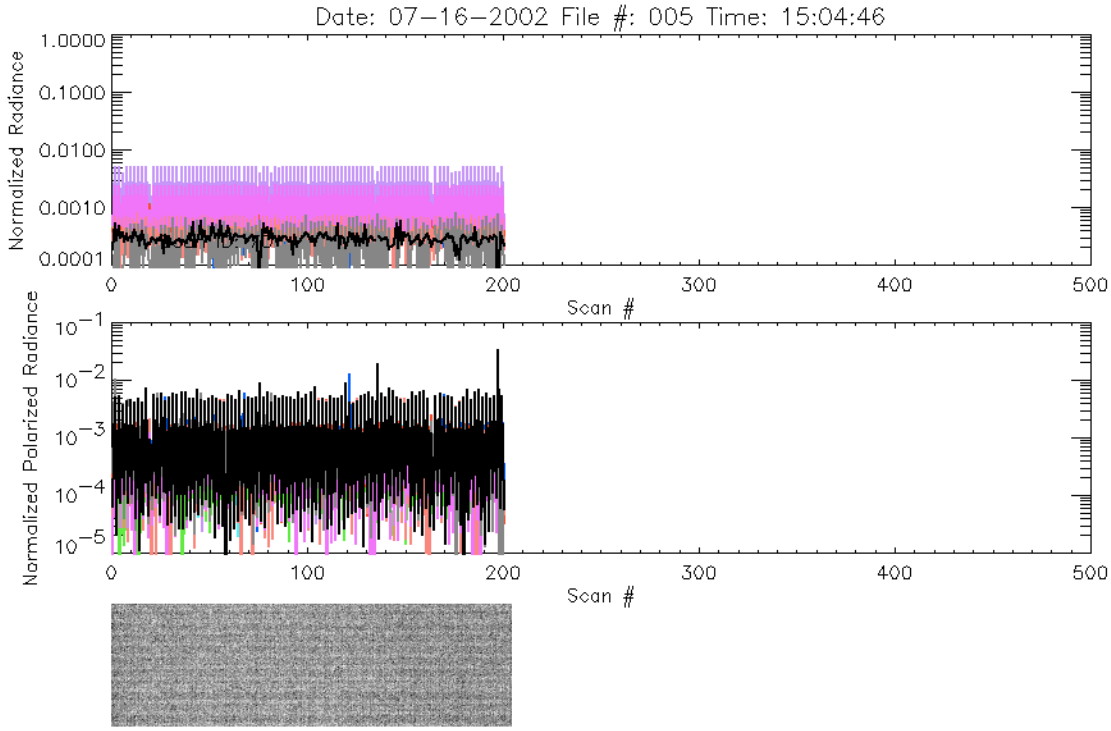
0.1000
0.0100
0.0010
0.0001
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
0
100
200
300
400
500
Scan #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0.1000
0.0100
0.0010
0.0001
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
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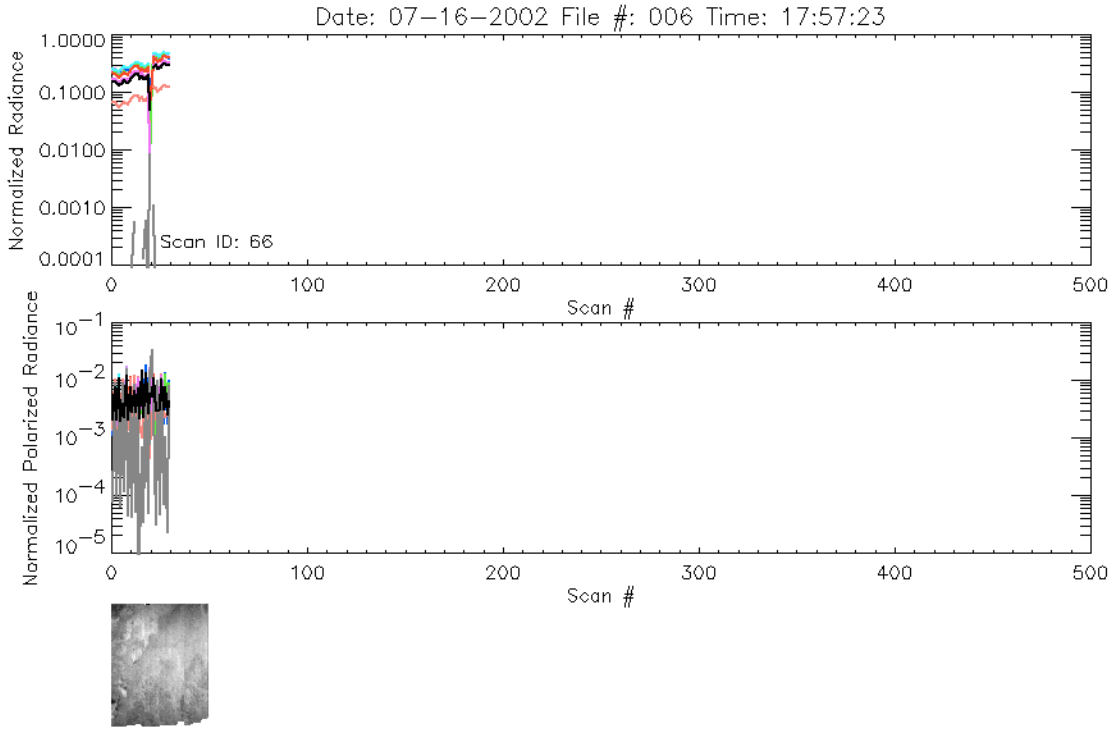
10^{-2}
10^{-3}
10^{-4}
10^{-5}
0
100
200
300
400
500
Scan #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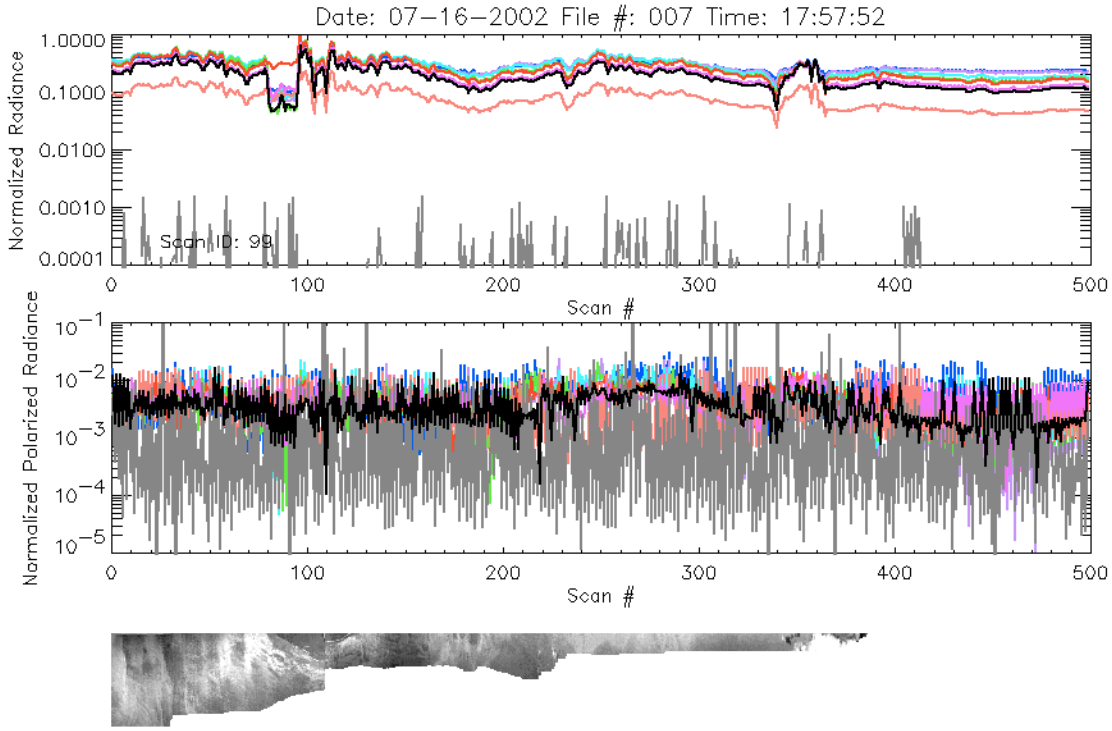
0.1000
0.0100
0.0010
0.0001
Scan ID: 66
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
Scan #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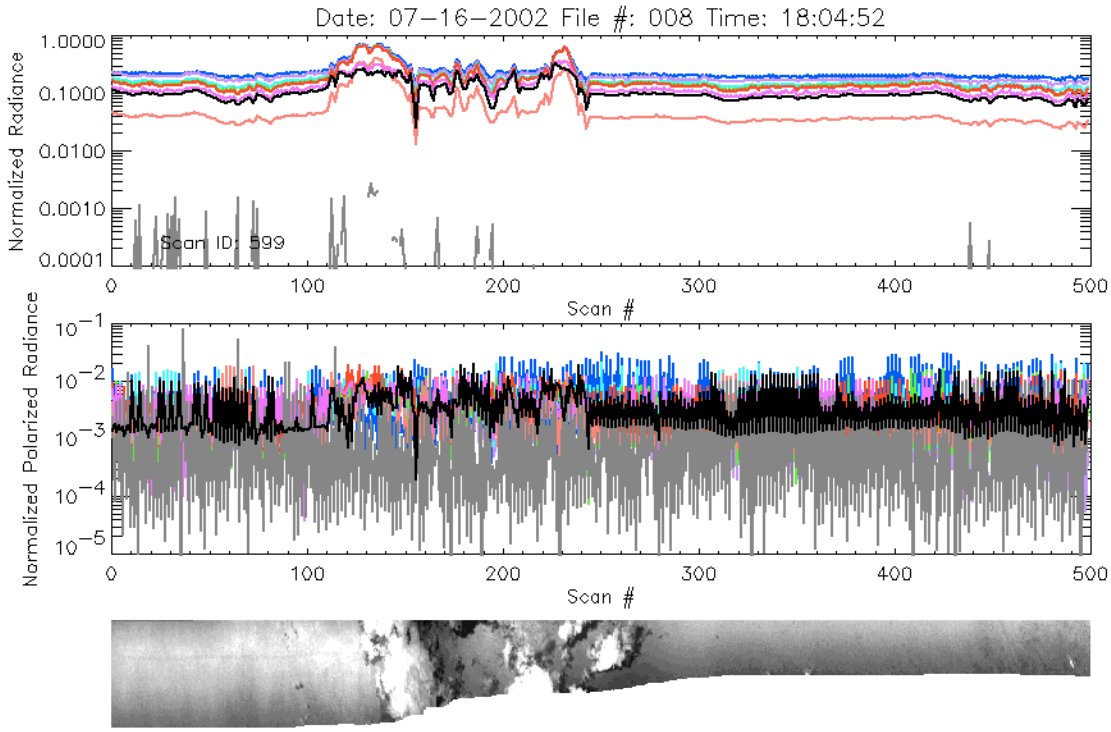
0.1000
0.0100
0.0010
0.0001
Scan ID: 99
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
Scan #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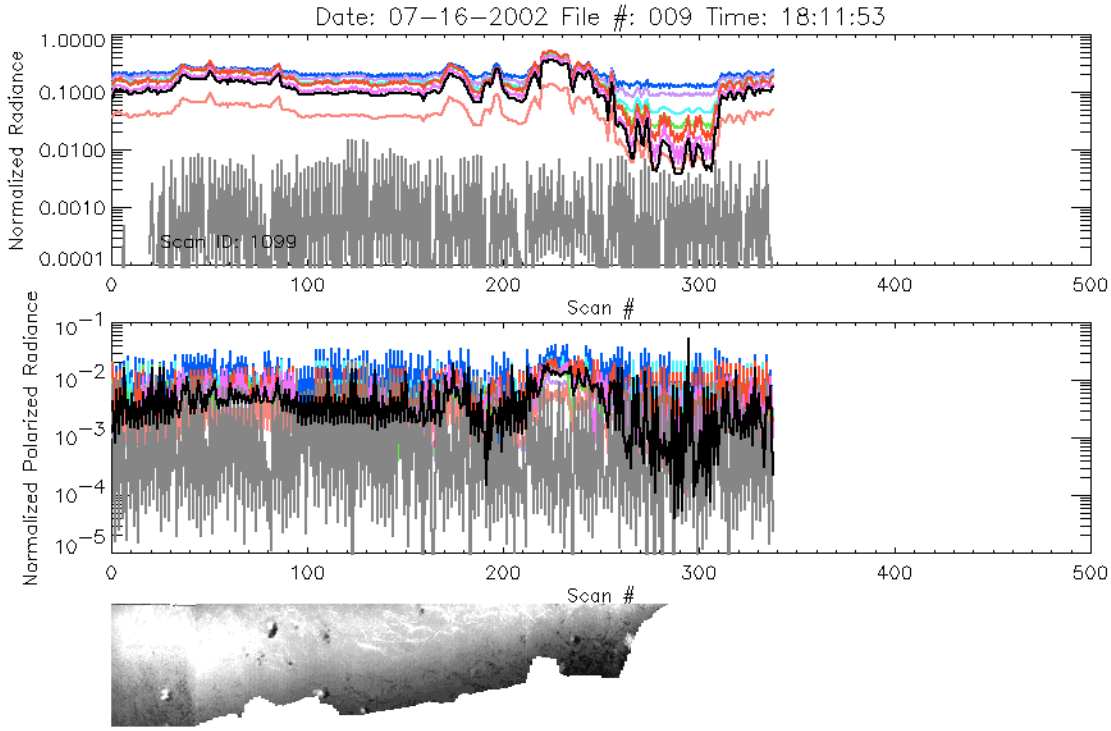
0.1000
0.0100
0.0010
0.0001
Scan ID: 599
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
0
100
200
300
400
500
Scan #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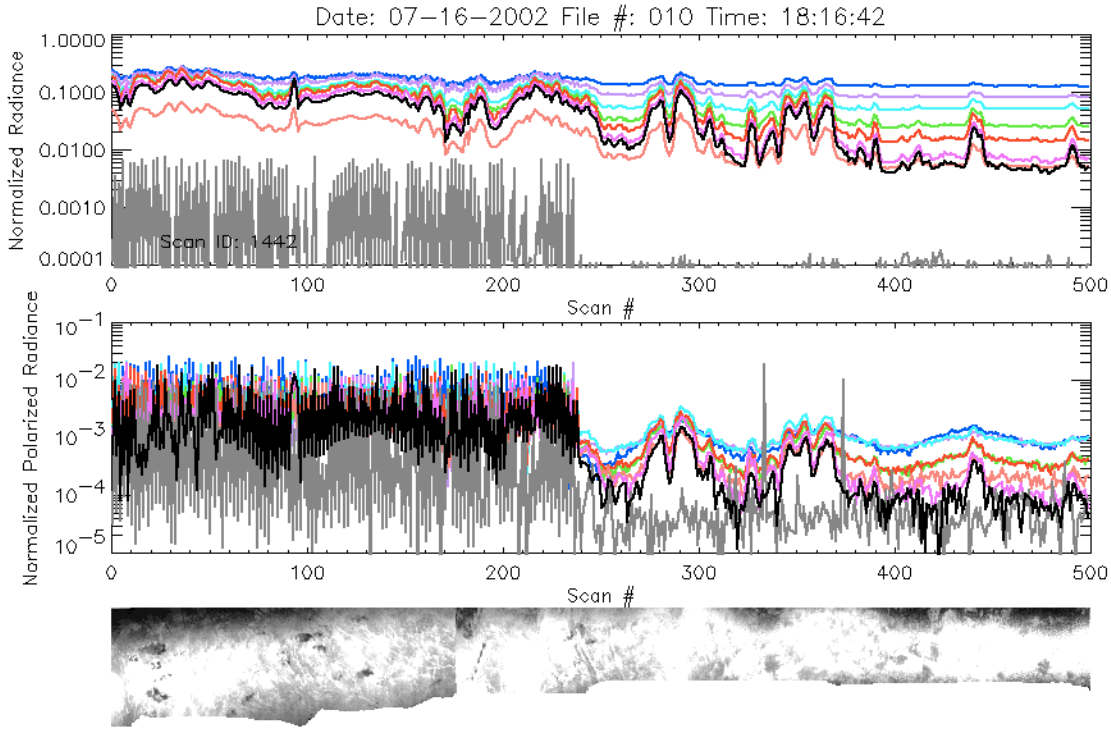
0.1000
0.0100
0.0010
0.0001
Scan ID: 1099
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
0
100
200
300
400
500
Scan #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0.0100
0.0010
0.0001
Scan ID: 1442
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
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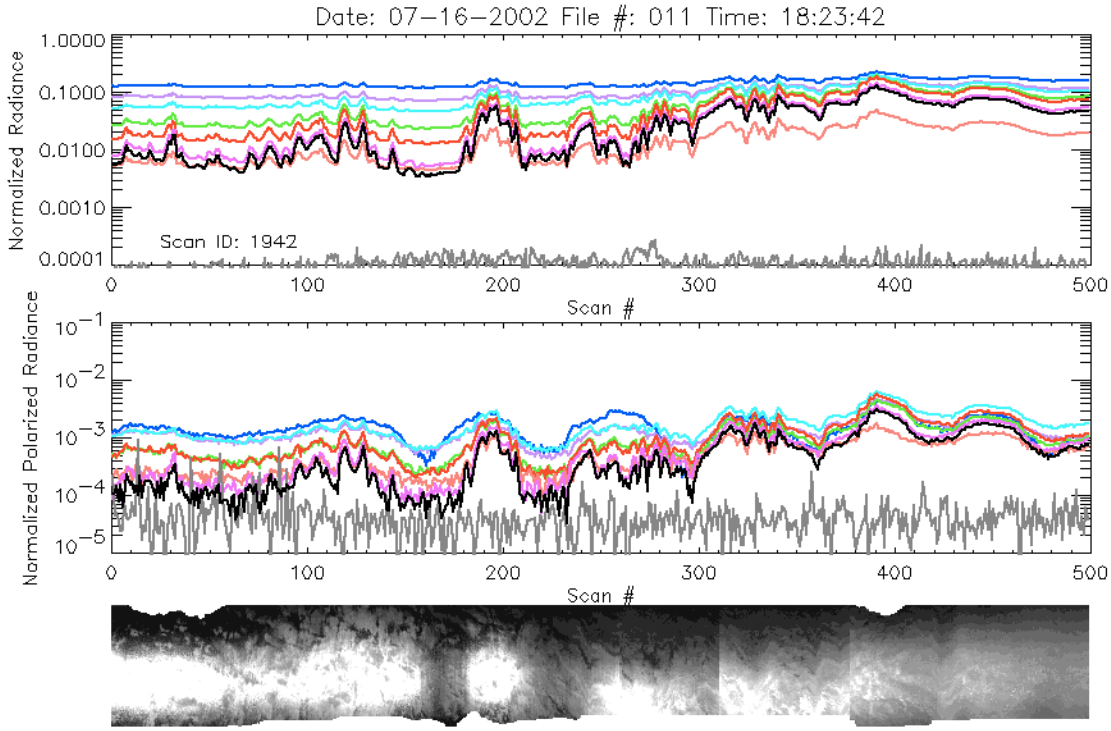
10^{-2}
10^{-3}
10^{-4}
10^{-5}
0
100
200
300
400
500
Scan #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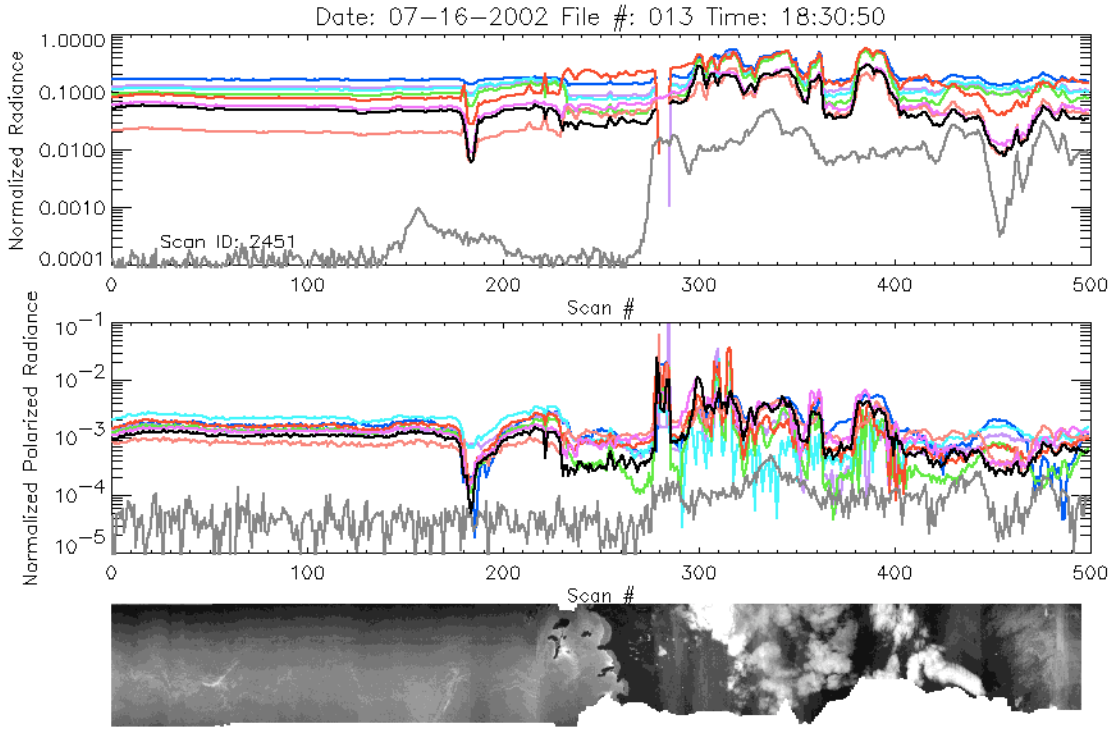
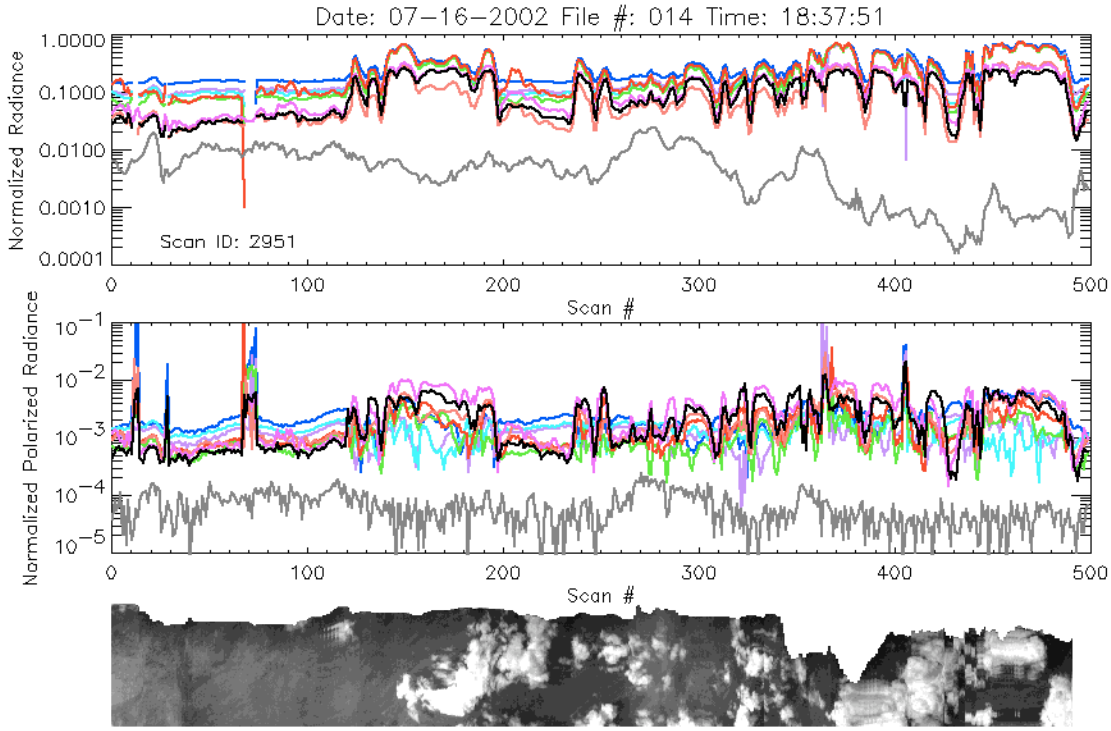
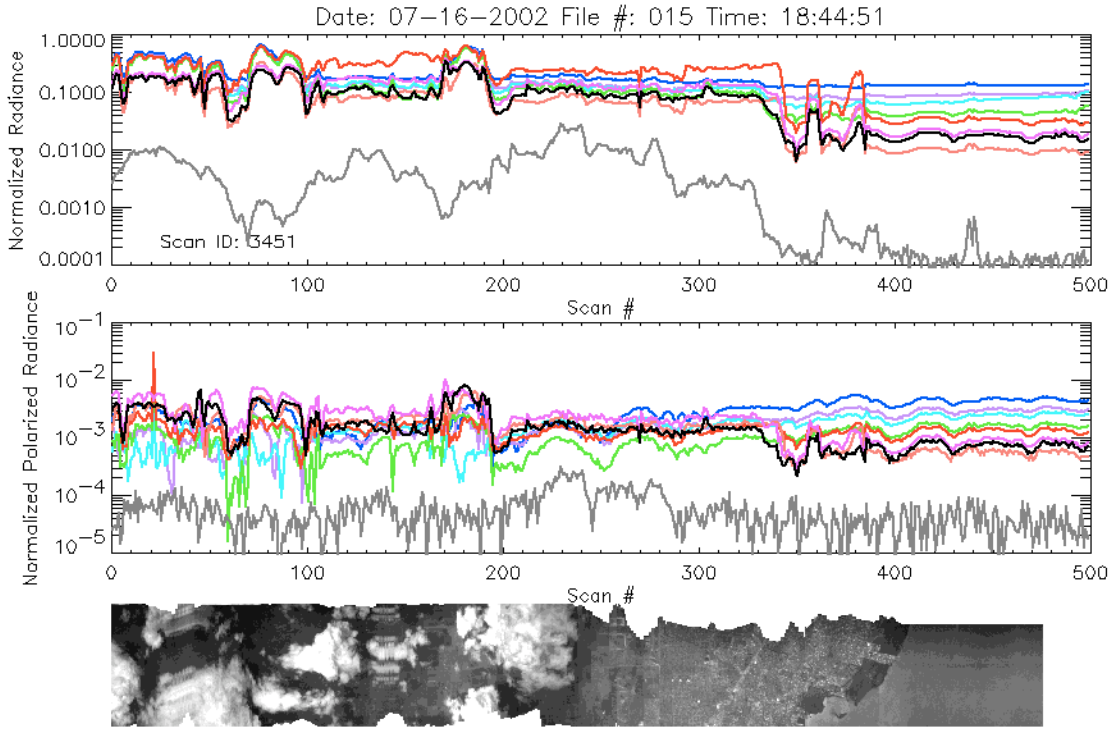
Normalized Radiance
1.0000
0.1000
0.0100
0.0010
0.0001
Scan ID: 1942
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
0
100
200
300
400
500
Scan #


Date: 07-16-2002 File #: 013 Time: 18:30:50
Normalized Radiance
1.0000
0.1000
0.0100
0.0010
0.0001
Scan ID: 2451
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
Scan #


Date: 07-16-2002 File #: 014 Time: 18:37:51
Normalized Radiance
1.0000
0.1000
0.0100
0.0010
0.0001
Scan ID: 2951
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
Scan #


Date: 07-16-2002 File #: 015 Time: 18:44:51
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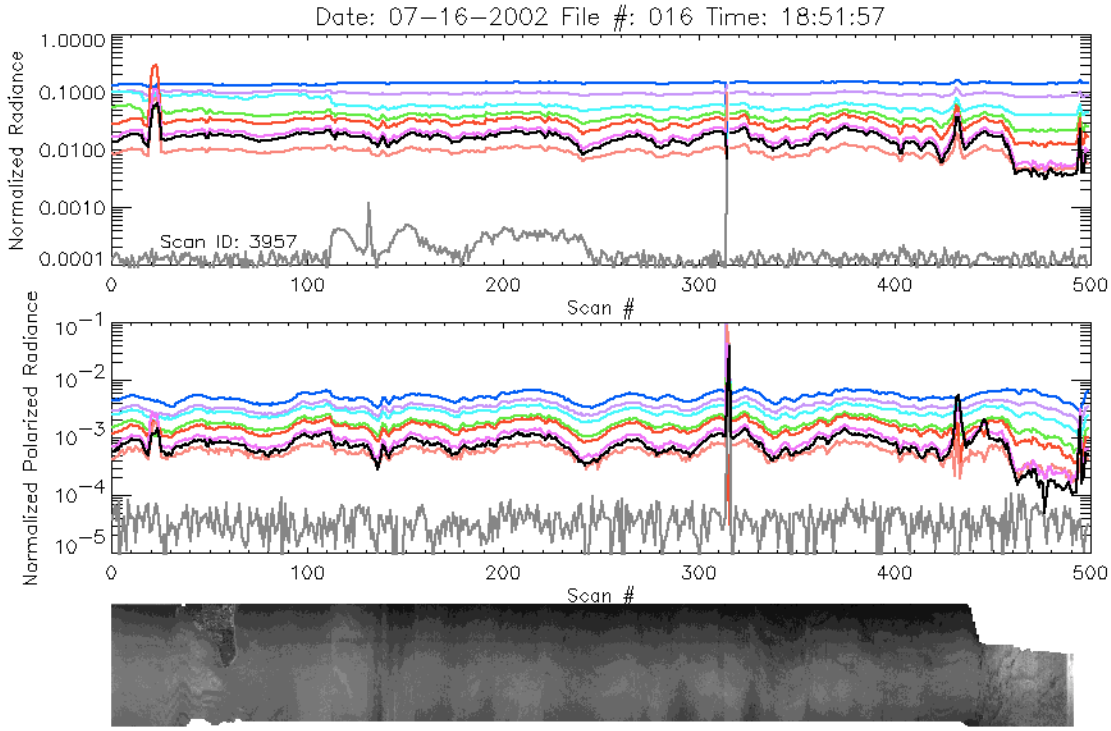
0.1000
0.0100
0.0010
0.0001
Scan ID: 3451
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
Scan #


Date: 07-16-2002 File #: 016 Time: 18:51:57
Normalized Radiance
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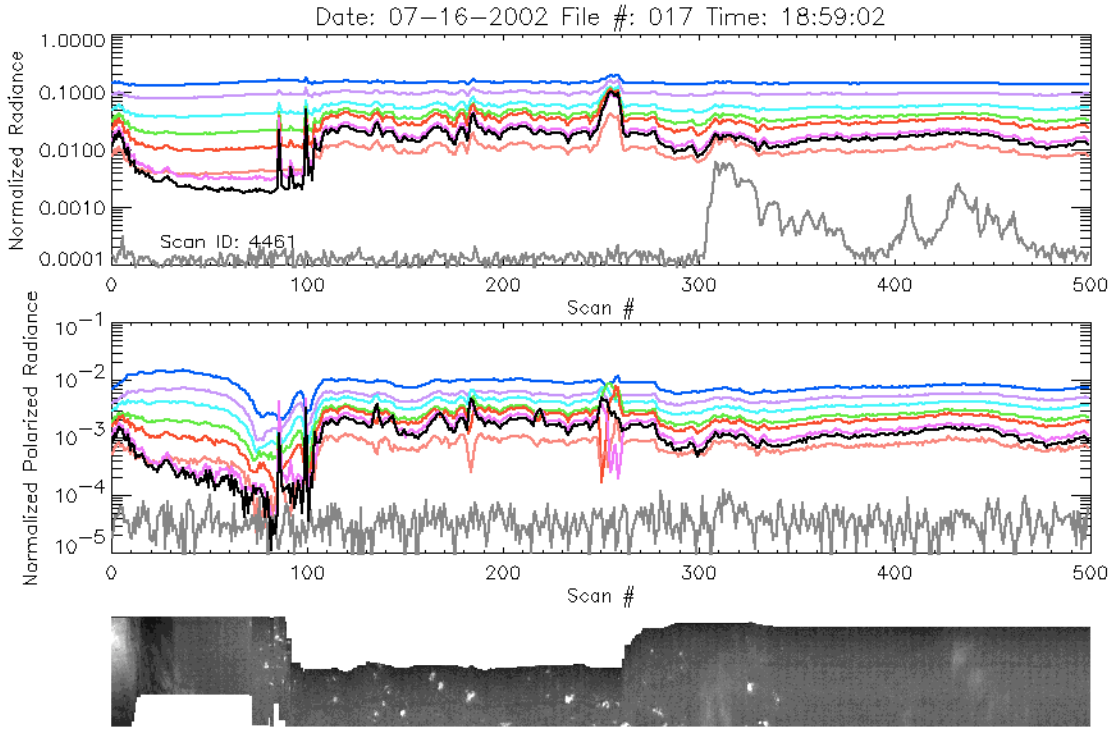
0.1000
0.0100
0.0010
0.0001
Scan ID: 3957
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
Scan #


Date: 07-16-2002 File #: 017 Time: 18:59:02
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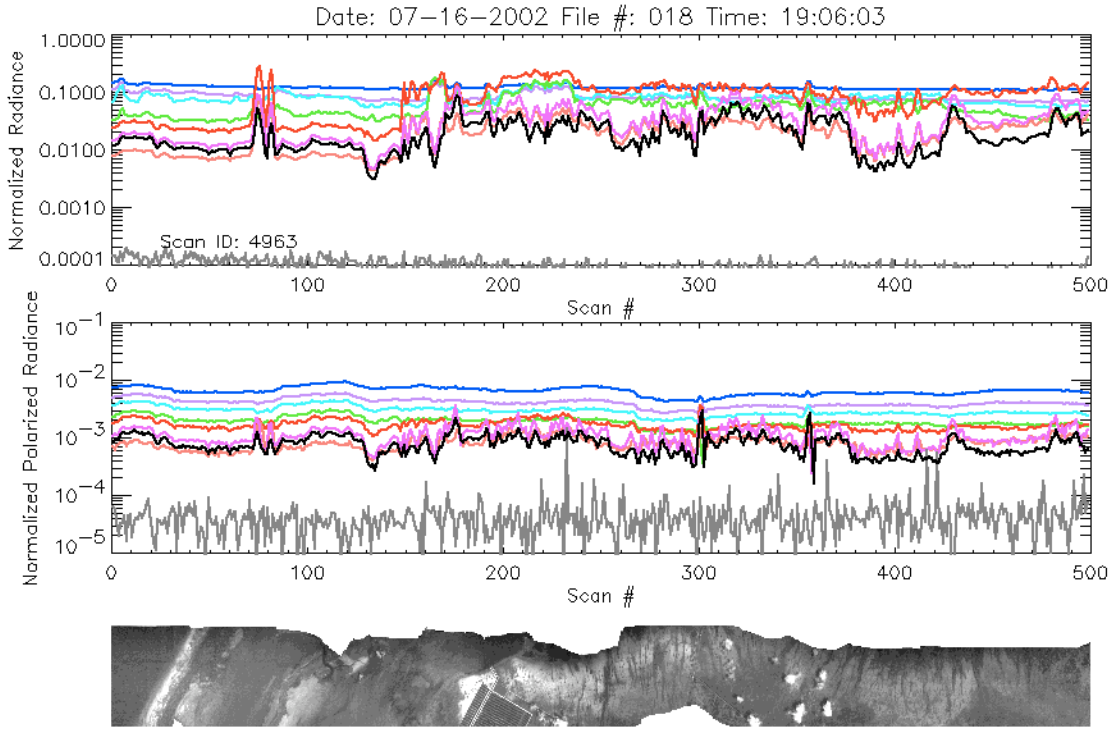
0.0100
0.0010
0.0001
Scan ID: 4461
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
0
100
200
300
400
500
Scan #


Date: 07-16-2002 File #: 018 Time: 19:06:03
Normalized Radiance
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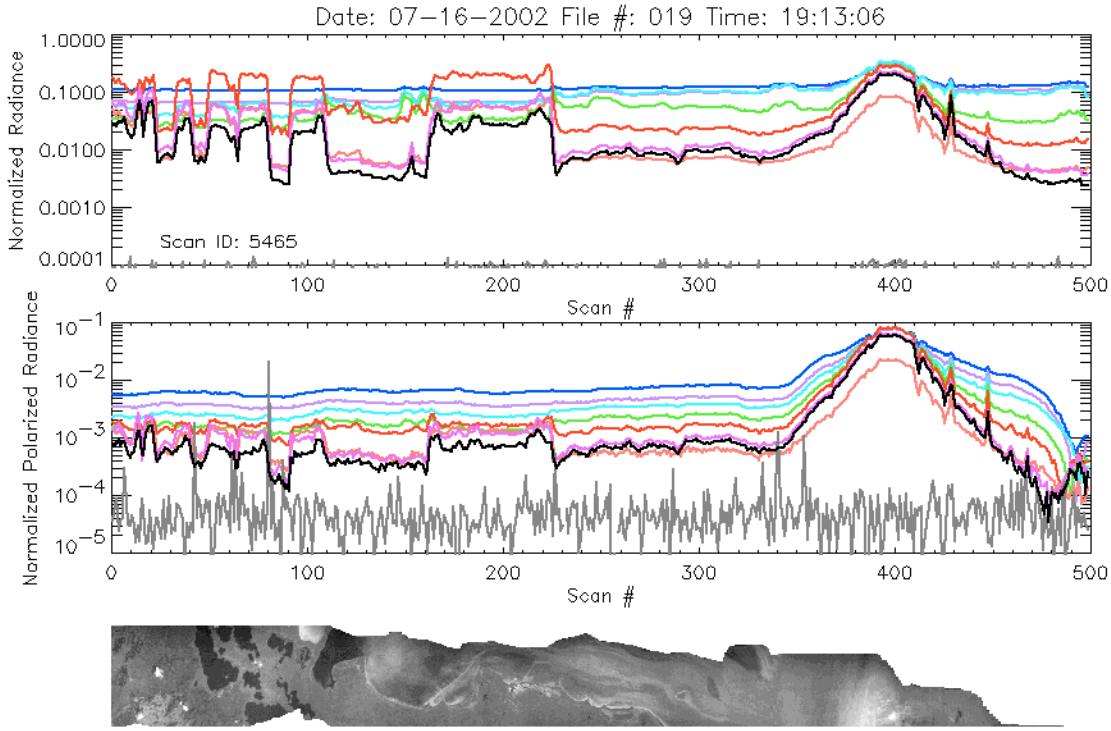
0.0100
0.0010
0.0001
Scan ID: 4963
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
0
100
200
300
400
500
Scan #


Date: 07-16-2002 File #: 019 Time: 19:13:06
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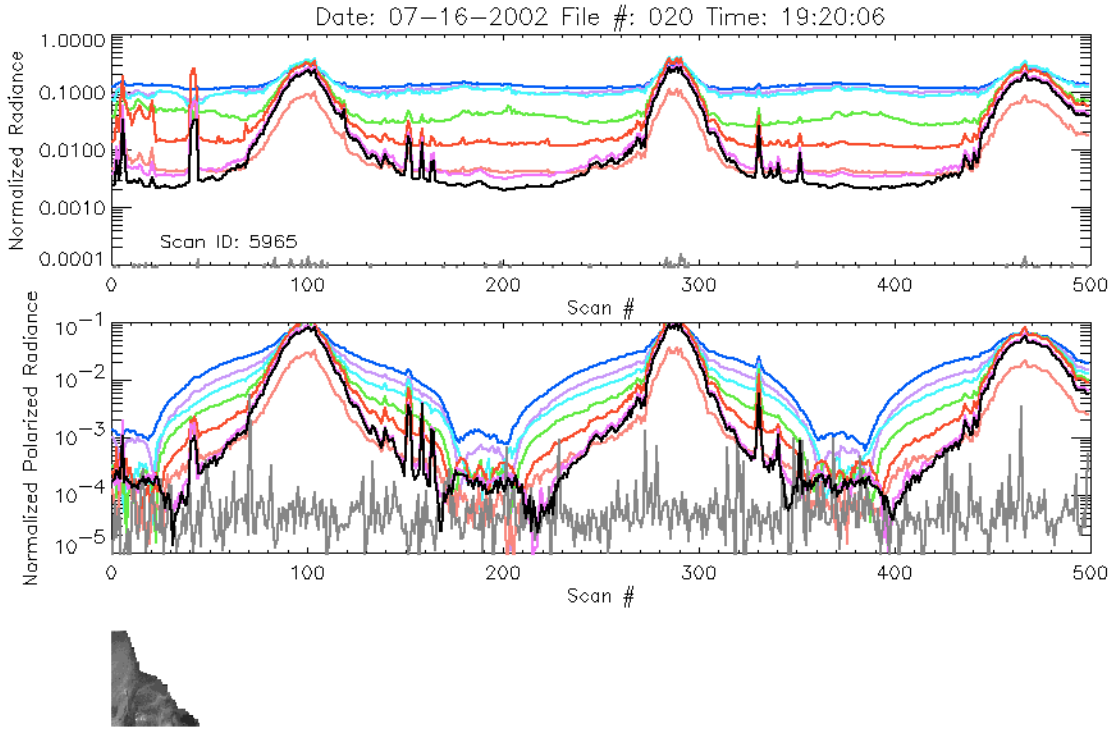
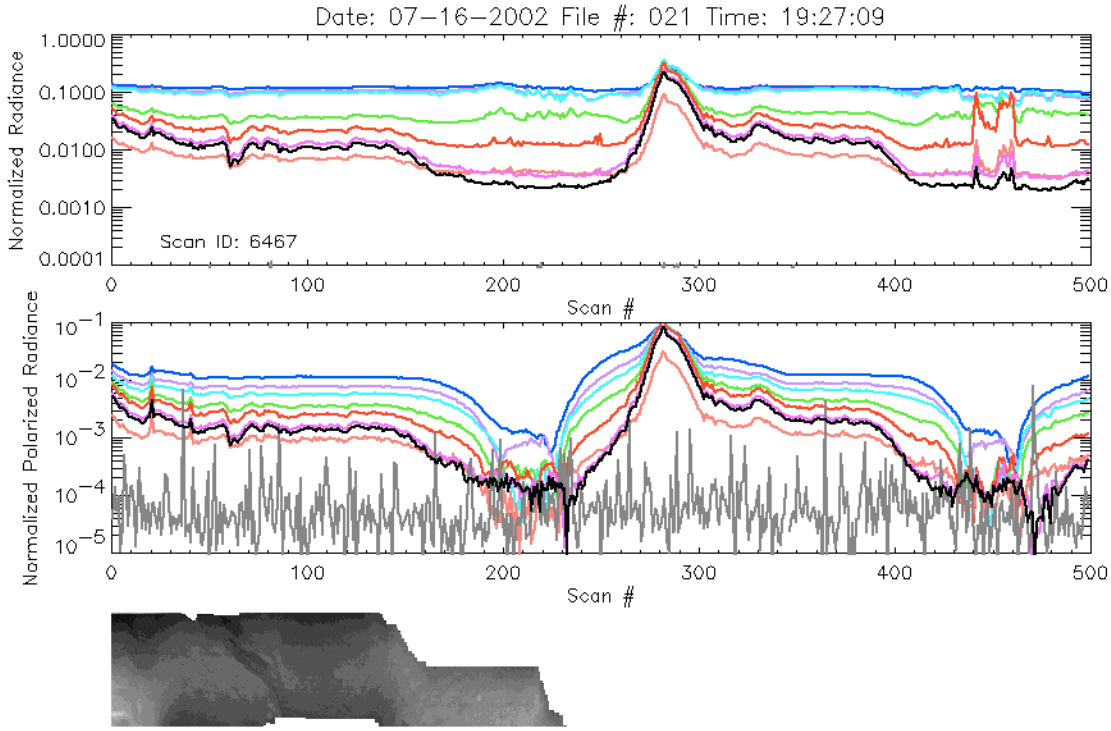
0.0100
0.0010
0.0001
Scan ID: 5465
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
0
100
200
300
400
500
Scan #


Date: 07-16-2002 File #: 020 Time: 19:20:06
Normalized Radiance
1.0000
0.1000
0.0100
0.0010
0.0001
Scan ID: 5965
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
0
100
200
300
400
500
Scan #


Date: 07−16−2002 File #: 021 Time: 19:27:09
Normalized Radiance
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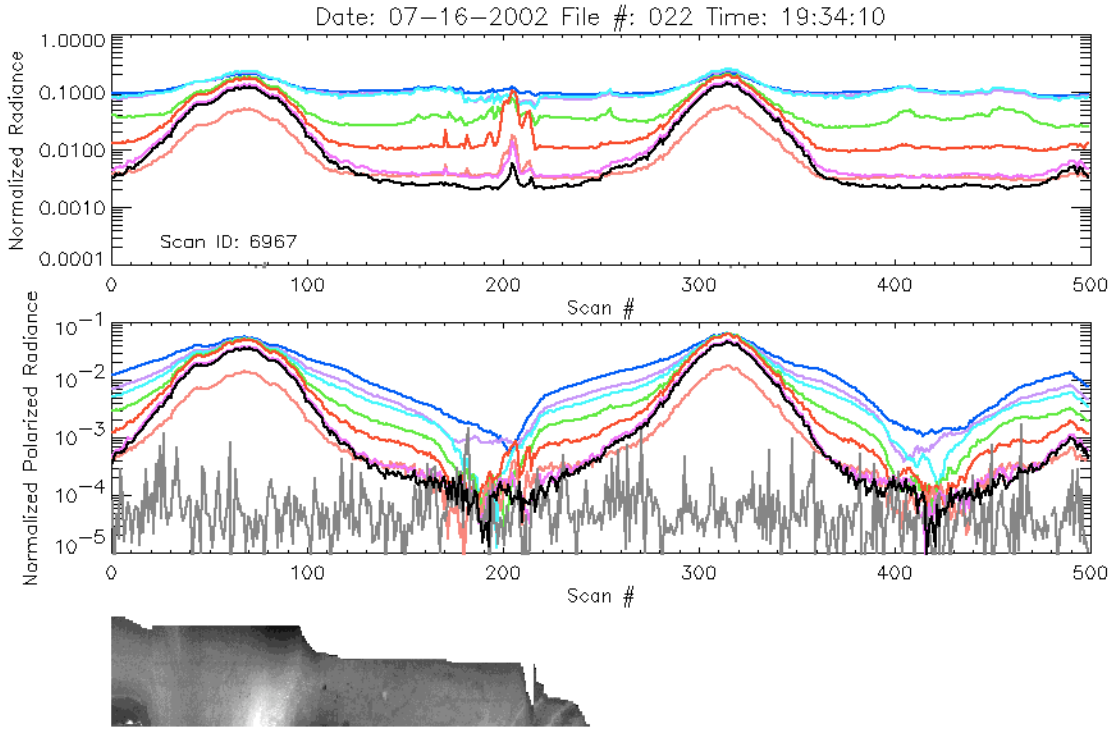
0.1000
0.0100
0.0010
0.0001
Scan ID: 6467
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
Scan #


Date: 07−16−2002 File #: 022 Time: 19:34:10
Normalized Radiance
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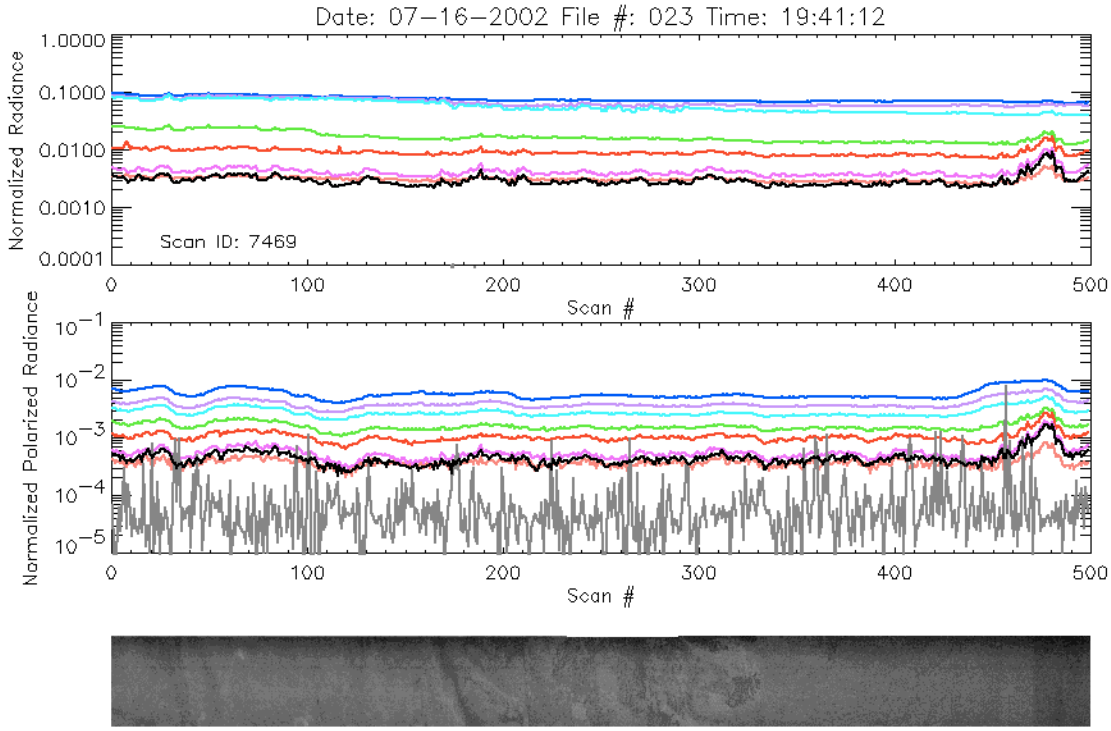
0.1000
0.0100
0.0010
0.0001
Scan ID: 6967
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
Scan #


Date: 07–16–2002 File #: 023 Time: 19:41:12
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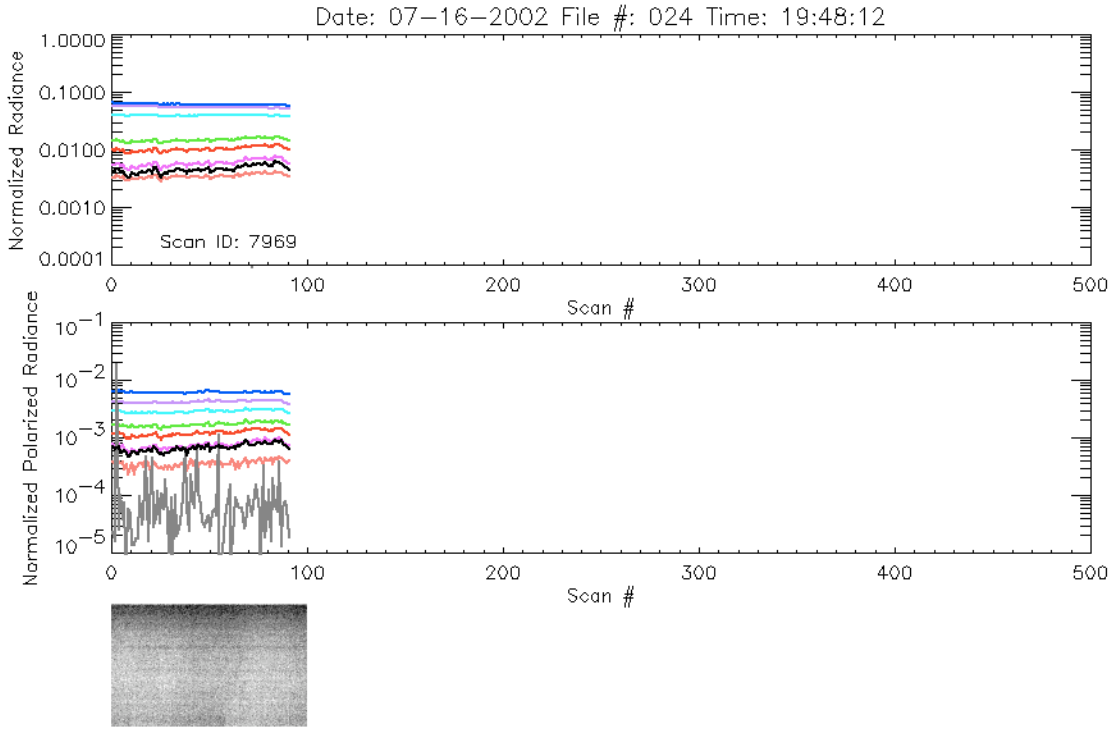
1.0000
0.1000
0.0100
0.0010
0.0001
Scan ID: 7469
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
Scan #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0.0100
0.0010
0.0001
Scan ID: 7969
0
100
200
300
400
500
Scan #
Normalized Polarized Radiance
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
Scan #