

# Planning coordinated observations with IRIS

Bart De Pontieu  
IRIS-9 tutorials  
June 2018



# Why coordinate with IRIS?



- IRIS provides high-cadence, high-resolution imaging and spectroscopy of the chromosphere, transition region and select flare/coronal emission
- IRIS observations come with a variety of high-level data products, analysis tools, models, and experts to aid in analysis
- Flexible observing modes and rapid turnaround in targeting and delivering data on desired features

# Timeline of your IRIS Coordination

- **As soon as possible (ideally months in advance for coordinated observations; a week before for other types of observations):**

If you are interested in obtaining IRIS observations (either in coordination with other observatories or just from IRIS alone), please contact the IRIS PI (Bart De Pontieu, [bdp@lmsal.com](mailto:bdp@lmsal.com)) as soon as possible with your request. If you also include Hinode data, then include the information below in your IHOP request

Your request should include:

- science rationale
- target, desired roll angle
- requested day/time and duration
- key constraints and/or a suggested OBS-ID both for low-data rate (< 0.5 Mbit/s) and high-data rate options (to take into account telemetry limitations)
- other participating instruments
- contact info

Once your observation request has been received and approved, it will be entered in the coordination calendar (if it is in coordination with other observatories).

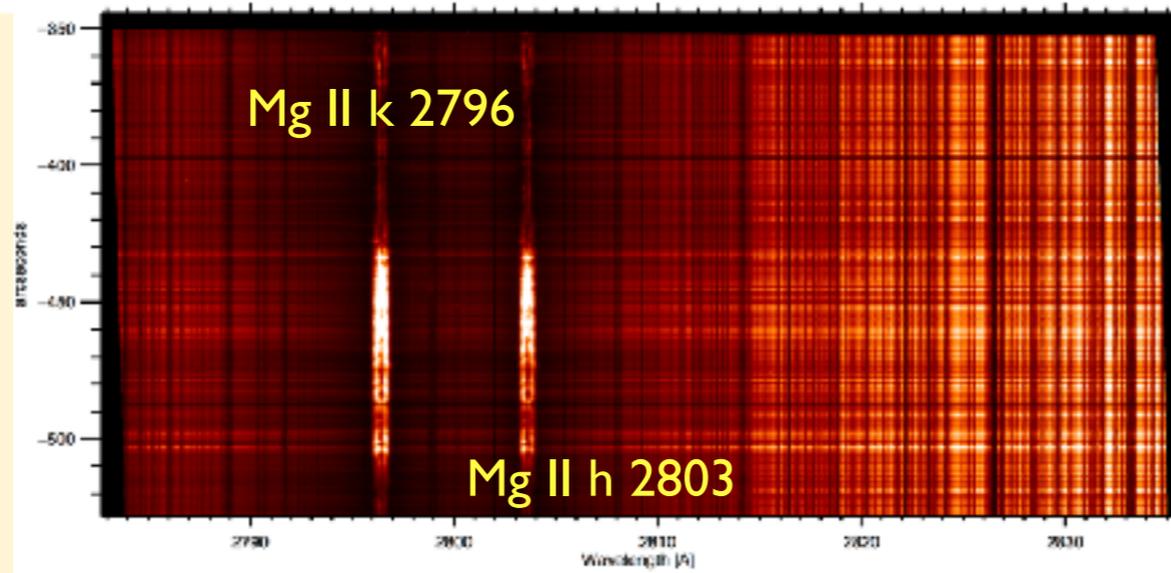
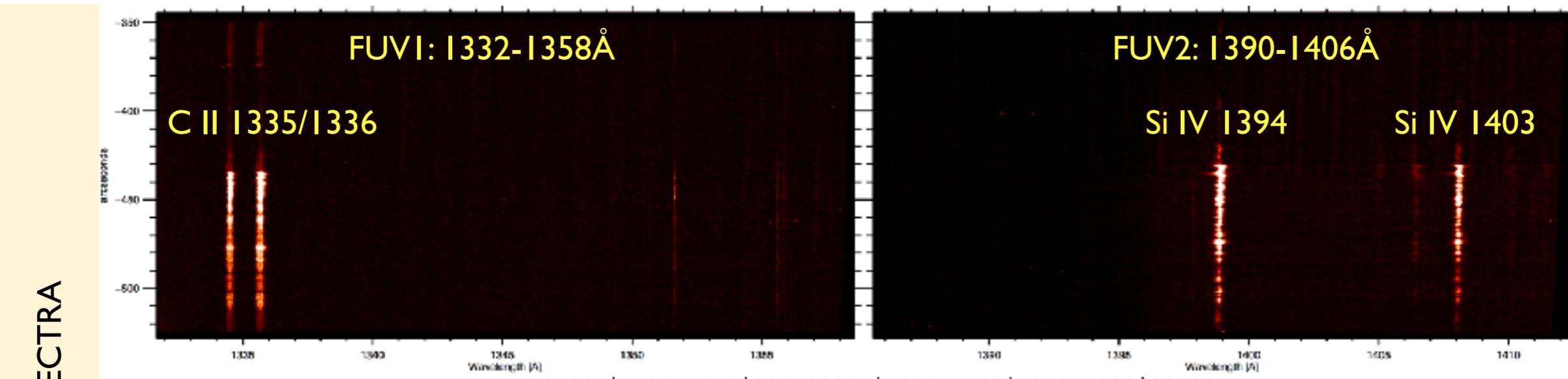
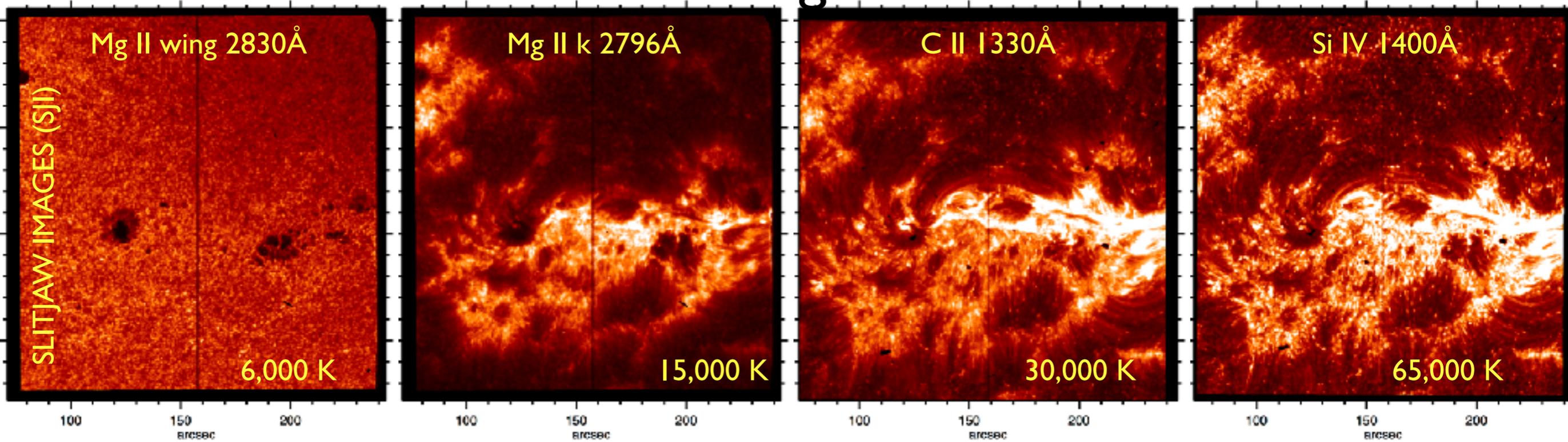
# Timeline of your IRIS Coordination

- **Two days before observation:**  
Confirm exact timing and targeting with your planner at [iris\\_planner@lmsal.com](mailto:iris_planner@lmsal.com)
- Final targeting delivered to planner 15-16 UT on the day before (IRIS day starts at 04 UT) unless planner confirms otherwise

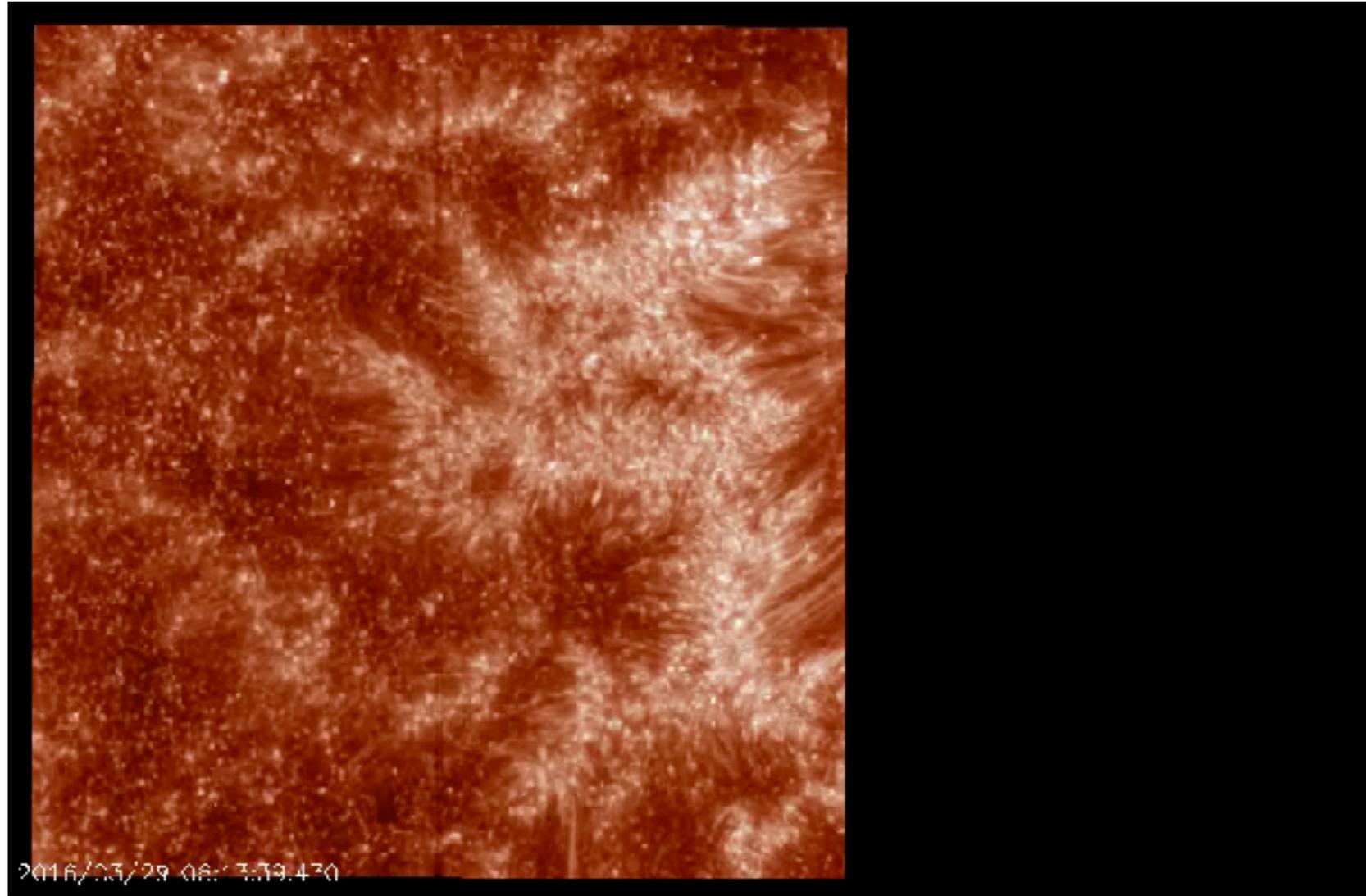
# Timeline of your IRIS Coordination

- **If you also coordinate with Hinode, then please submit an IHOP**
  - IHOPs are IRIS-Hinode Operation Plans
  - Contact Hinode team and IRIS PI ([bdp@lmsal.com](mailto:bdp@lmsal.com)) following instructions on Hinode HOP page (<http://hinode.msfc.nasa.gov/hops.html>), including science justification, key constraints and requests for Hinode instruments and IRIS. For IRIS, this ideally is an initial guess for the OBS ID, duration, targets. These can be finalized after initial submission.
  - IHOPs are discussed once per month for approval and observing during next month.

# IRIS wavelength choices



# IRIS resolution and slit



- IRIS has one slit, which is  $1/3''$  wide. The imaging devices have  $1/6''$  pixels with an effective spatial resolution of  $\sim 0.33''$  in the FUV and  $\sim 0.4''$  in the NUV.
- The slit can be moved across the solar disk with step sizes of  $0.35''$ ,  $1''$  or  $2''$  up to a spatial range of roughly  $120'' \times 175''$ .
- The slit-jaw images cover a FOV of up to  $175'' \times 175''$ , while the slit has a length of  $175''$ .
- The spectral pixel size is  $13\text{m}\text{\AA}$  with an effective spectral resolution of  $\sim 27\text{m}\text{\AA}$  in the FUV, and  $26\text{m}\text{\AA}$  pixels and effective spectral resolution of  $\sim 55\text{m}\text{\AA}$  in the NUV.
- To boost signal-to-noise and/or reduce telemetry data can be summed onboard, both spectrally or spatially.

# IRIS cadence

- High throughput, and fast readout and mechanism movements allows cadences for the spectra to be as short as 1.5-2 seconds, with slit-jaw cadences as short as 1.5-2 seconds.
- Typical exposure times for bright lines such as C II 1335Å, Si IV 1402Å and Mg II h/k 2796Å are 2-8s for active regions, 8-15s for quiet Sun and coronal hole, with exposure times of 30 or 60s to detect fainter lines.

# IRIS pointing and roll

- The spacecraft can be pointed anywhere within 4 arcmin off the solar limb. IRIS can be rolled at any angle from -90 to 90 degrees with respect to solar north for extended periods of time. The roll angle is restricted for several days twice per month (around first and last quarter of the Moon phase). Non-zero roll angles can cause reduced telemetry (up to a factor of 2-3 lower in the worst case).

# IRIS home page

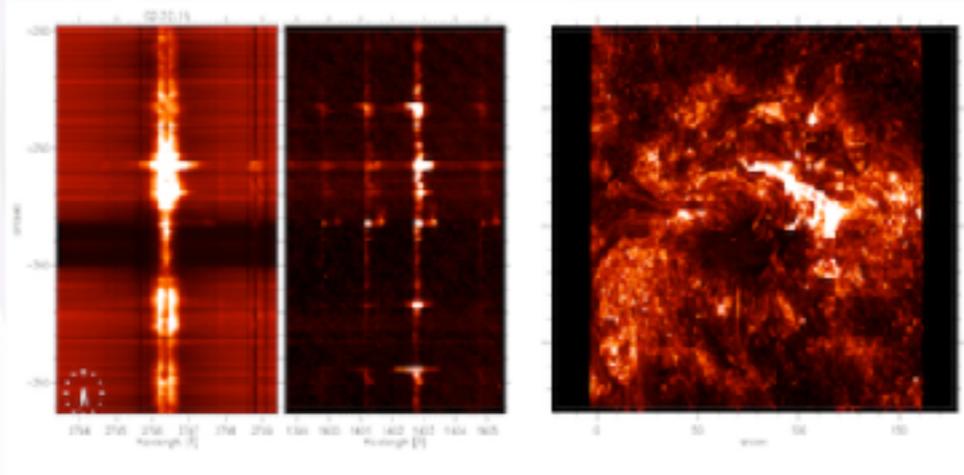
<http://iris.lmsal.com/index.html>

INTERFACE REGION IMAGING SPECTROGRAPH

Home Mission Operations Data Analysis Modeling Documents **Software** Team Press Contact

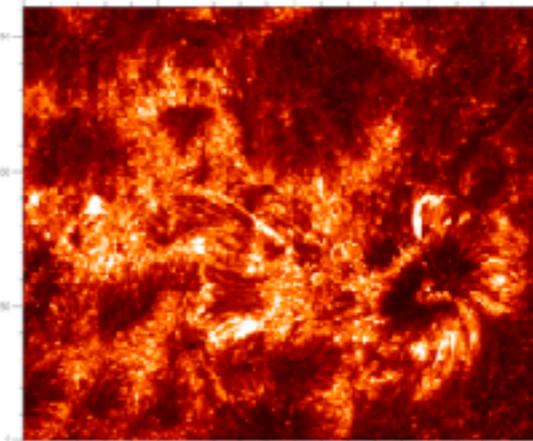
## Current News

- **9 December 2013:** [IRIS-related numerical models \(Bifrost\)](#) now available
- **2 December 2013:** [IRIS mission/instrument paper](#) now available
- **31 October 2013:** Calibrated level 2 data now available:
  - See our [Press page](#) for details.
  - Find the data at [LMSAL](#) or at [University of Oslo](#)
  - [Technical documentation](#) updated and available
  - [IRIS Today page](#) available



## Previous IRIS News

- **1 October 2013:** [Quicklook slit-jaw movies](#) available
- **24 July 2013:** [First Light Press Release](#)



- **27 June 2013:** IRIS launched



- **19 June 2009:** NASA announces [selection of IRIS](#).

# Parameters of an IRIS observation

- IRIS has a range of different observing modes
  - Explore observing parameter space with the table selector tool (<http://iris.lmsal.com/software.html>)
  - Download Table Selector directly from this link: ([https://www.lmsal.com/iris\\_science/doc?cmd=dcur&proj\\_num=IS0299&file\\_type=tgz](https://www.lmsal.com/iris_science/doc?cmd=dcur&proj_num=IS0299&file_type=tgz))

Select OBS from Default Tables 1.0

v36

1 - 0, 1s, 0.3x30, C II Si IV Mg II h/k Mg II wl... 1

0 - C II Si IV Mg II h/k Mg II w 0

0 - Exposure 1s 0

0 - Spatial x 1, Spectral x 2 0

0 - FUV binned same as NUV 0

0 - SJI cadence default 0

0 - Non-simultaneous readout 0

0 - Default compression 0

0 - Large list 0

Full OBS ID Description

OBSID: 360000001

OBS ID	Description	Duration (s)	DataVal [Mait]	DataRate (Mbit/s)	Step (s)	Raster (s)	SIT1335 (s)	SIT1408 (s)	SIT1795 (s)	SIT wing [s]

Reset Translate v38ID Get Description Accept

# Install Table Selector

- Unpack tar file
- cd to unpacked directory
- `java -jar PreDefinedTables.jar v36 - standalone`

Select OBS from Default Tables 1.0

v36

1 - 0, 1s, 0.3x30, C II Si IV Mg II h/k Mg II w...	1
0 - C II Si IV Mg II h/k Mg II w	0
0 - Exposure 1s	0
0 - Spatial x 1, Spectral x 2	0
0 - FUV binned same as NUV	0
0 - SJI cadence default	0
0 - Non-simultaneous readout	0
0 - Default compression	0
0 - Large linelist	0

Full OBS ID Description

OBSID: 3620000001

OBS ID	Description	Duration (s)	DataVal [bits]	DataRate (Mbit/s)	Step (s)	Bayer (s)	SJI335 (s)	SJI408 (s)	SJI795 (s)	SJI wing (s)

Reset Translate v38ID Get Description Accept

# Table Selector Output

Select OBS from Default Tables 1.0

v36

1 - 0, 1s, 0.3x30, C II Si IV Mg II h/k Mg II w...  1

0 - C II Si IV Mg II h/k Mg II w  0

0 - Exposure 1s  0

0 - "Spatial x 1, Spectral x 2"  0

0 - FUV binned same as NUV  0

0 - SJI cadence default  0

0 - Non-simultaneous readout  0

0 - Default compression  0

0 - Large linelist  0

Full OBS ID Description  
3600000001 | Small slit-and-stare 0.3x30 1s | 18.01 | 31.57 | 1.2 | 2.6+/-0.1 | 2.6+/-0.1 | 18.0+/-0.0 | 18.0+/-0.0 |  
18.0+/-0.0 | 18.0+/-0.0

OBSID: 3600000001

OBS ID	Description	Duration (s)	DataVol (Mbit)	DataRate (Mbit/s)	Step (s)	Raster (s)	SJI1335 (s)	SJI1400 (s)	SJI1796 (s)	SJI wing (s)
3600000001	Small slit-and-stare 0.3x30 1s	18.01	31.57	1.2	2.6+/-0.1	2.6+/-0.1	18.0+/-0.0	18.0+/-0.0	18.0+/-0.0	18.0+/-0.0

Reset Translate v38ID **Get Description** Accept

# Table Selector Output

Input

The screenshot shows a window titled "Select OBS from Default Tables" with a version number "1.0" in the top right corner. The window is divided into several sections:

- Input Section:** A list of configuration options on the left, each with a dropdown menu and a numeric input field. The options are:
  - v36 (dropdown)
  - 1 - 0, 1s, 0.3x30, C II Si IV Mg II h/k Mg II w... (dropdown) | 1 (input)
  - 0 - C II Si IV Mg II h/k Mg II w (dropdown) | 0 (input)
  - 0 - Exposure 1s (dropdown) | 0 (input)
  - 0 - "Spatial x 1, Spectral x 2" (dropdown) | 0 (input)
  - 0 - FUV binned same as NUV (dropdown) | 0 (input)
  - 0 - SJI cadence default (dropdown) | 0 (input)
  - 0 - Non-simultaneous readout (dropdown) | 0 (input)
  - 0 - Default compression (dropdown) | 0 (input)
  - 0 - Large linelist (dropdown) | 0 (input)
- Full OBS ID Description:** A text area showing the selected observation ID and its parameters:

```
3600000001 | Small slit-and-stare 0.3x30 1s | 18.01 | 31.57 | 1.2 | 2.6+/-0.1 | 2.6+/-0.1 | 18.0+/-0.0 | 18.0+/-0.0 | 18.0+/-0.0 | 18.0+/-0.0
```
- OBS ID:** A text field containing "3600000001".
- Output Table:** A table with the following columns: OBS ID, Description, Duration (s), DataVol (Mbit), DataRate (Mbit/s), Step (s), Raster (s), SJI1335 (s), SJI1400 (s), SJI1795 (s), and SJI wing (s). The table contains one row of data corresponding to the selected observation.
- Buttons:** "Reset", "Translate v38ID", "Get Description", and "Accept".

Output

# Table Selector Output

Select OBS from Default Tables 1.0

v36

1 - 0, 1s, 0.3x30, C II Si IV Mg II h/k Mg II w... 1

0 - C II Si IV Mg II h/k Mg II w 0

0 - Exposure 1s 0

0 - "Spatial x 1, Spectral x 2" 0

0 - FUV binned same as NUV 0

0 - SJI cadence default 0

0 - Non-simultaneous readout 0

0 - Default compression 0

0 - Large linelist 0

Full OBS ID Description  
 3600000001 | Small slit-and-stare 0.3x30 1s | 18.01 | 31.57 | 1.2 | 2.6+/-0.1 | 2.6+/-0.1 | 18.0+/-0.0 | 18.0+/-0.0 |  
 18.0+/-0.0 | 18.0+/-0.0

OBSID: 3600000001

OBS ID	Description	Duration (s)	DataVol (Mbit)	DataRate (Mbit/s)	Step (s)	Raster (s)	SJI1335 (s)	SJI1408 (s)	SJI1796 (s)	SJI wing (s)
3600000001	Small slit-and-stare 0.3x30 1s	18.01	31.57	1.2	2.6+/-0.1	2.6+/-0.1	18.0+/-0.0	18.0+/-0.0	18.0+/-0.0	18.0+/-0.0

Reset Output Translate v3SID Get Description Accept

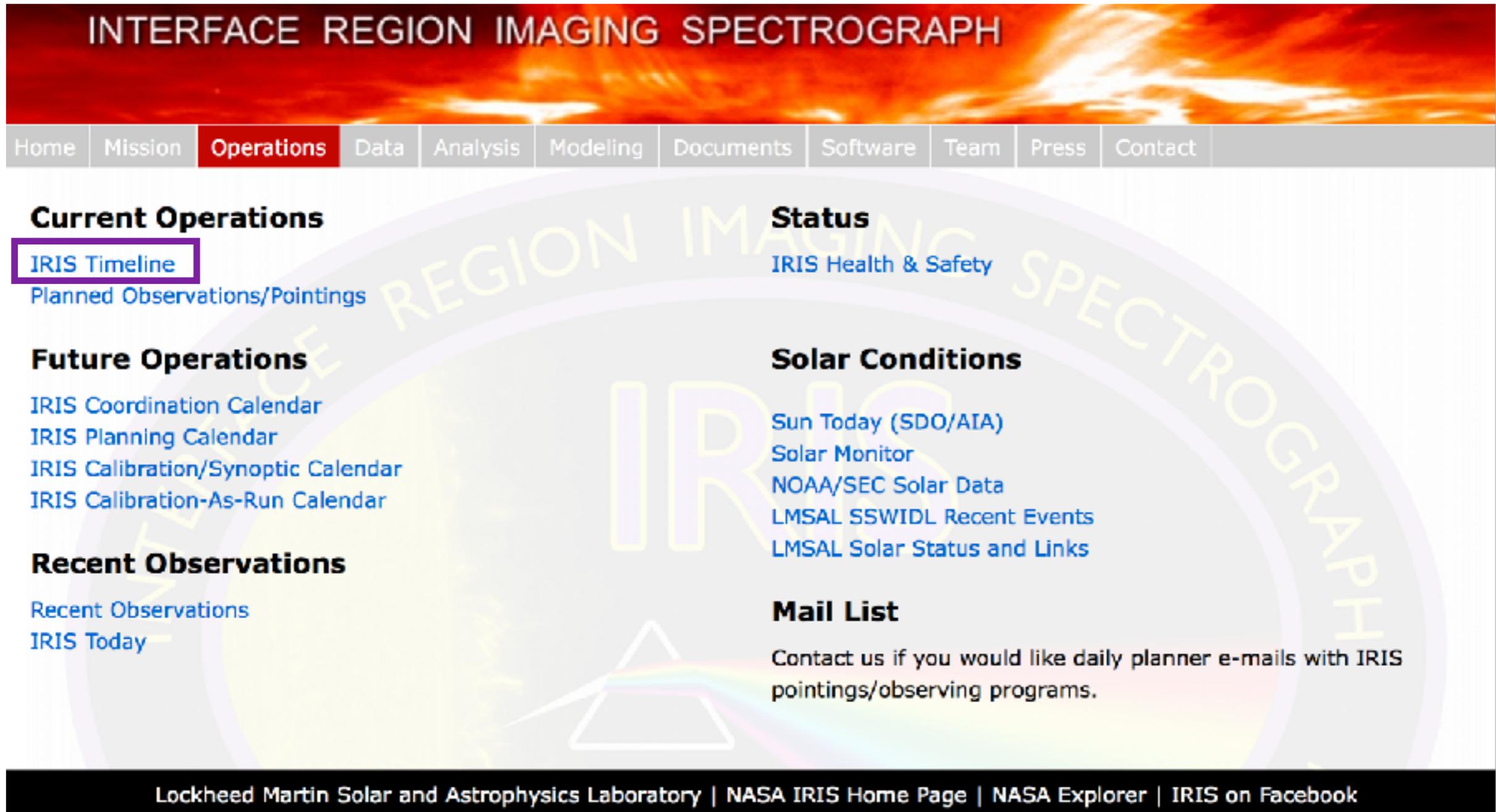
Average IRIS datarate = 0.7 Mbit/s

Cadence of raster in seconds

Cadence of various slit-jaw images

# How is IRIS operated?

<http://iris.lmsal.com/operations.html>



INTERFACE REGION IMAGING SPECTROGRAPH

Home | Mission | **Operations** | Data | Analysis | Modeling | Documents | Software | Team | Press | Contact

### Current Operations

[IRIS Timeline](#)  
[Planned Observations/Pointings](#)

### Future Operations

[IRIS Coordination Calendar](#)  
[IRIS Planning Calendar](#)  
[IRIS Calibration/Synoptic Calendar](#)  
[IRIS Calibration-As-Run Calendar](#)

### Recent Observations

[Recent Observations](#)  
[IRIS Today](#)

### Status

[IRIS Health & Safety](#)

### Solar Conditions

[Sun Today \(SDO/AIA\)](#)  
[Solar Monitor](#)  
[NOAA/SEC Solar Data](#)  
[LMSAL SSWIDL Recent Events](#)  
[LMSAL Solar Status and Links](#)

### Mail List

Contact us if you would like daily planner e-mails with IRIS pointings/observing programs.

Lockheed Martin Solar and Astrophysics Laboratory | NASA IRIS Home Page | NASA Explorer | IRIS on Facebook

5 timelines per week (Mon-Fri) from 4 UT to 4 UT

# How is IRIS operated?

<http://iris.lmsal.com/health-safety/timeline/>

## IRIS Science Planning Files

[IRIS Home Page](#)

[IRIS Health and Safety Page](#)

[IRIS timeline GIF explained \(somewhat\)](#)

[IRIS Daily Pointings and FOVS Overlaid On AIA Context Images](#)

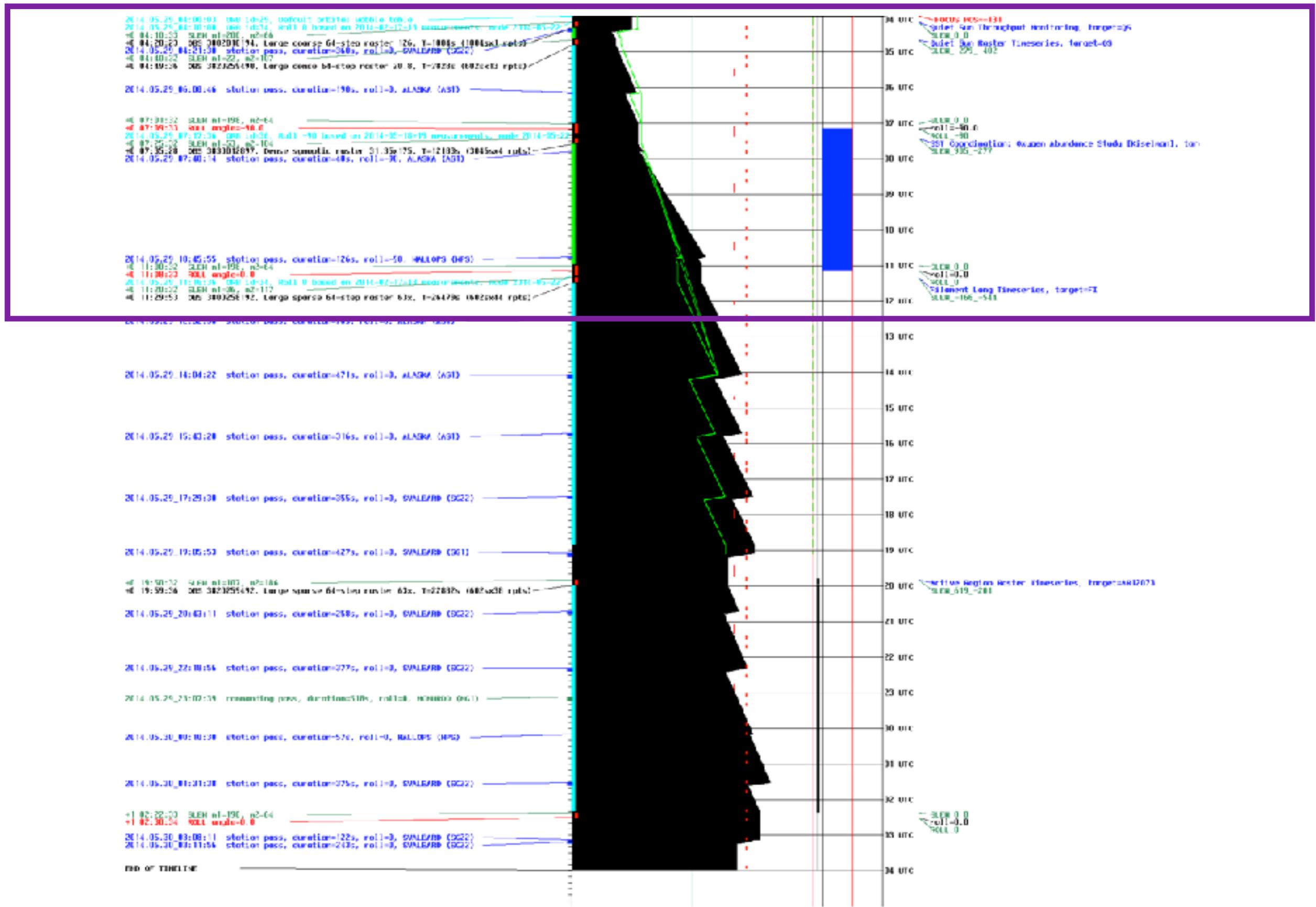
[Planned Observation Summaries](#)

[Recent IRIS Observations](#)

Date	TLI	TIM	SCI	GIF	MEM		
30-may-2014	<a href="#">TLI</a>	<a href="#">TIM</a>	<a href="#">SCI</a>	<a href="#">GIF</a>	-	<a href="#">jun-2014</a>	<a href="#">sci monthly</a>
29-may-2014	<a href="#">TLI</a>	<a href="#">TIM</a>	<a href="#">SCI</a>	<a href="#">GIF</a>	<a href="#">MEM</a>	<a href="#">may-2014</a>	<a href="#">sci monthly</a>
28-may-2014	<a href="#">TLI</a>	<a href="#">TIM</a>	<a href="#">SCI</a>	<a href="#">GIF</a>	<a href="#">MEM</a>	<a href="#">apr-2014</a>	<a href="#">sci monthly</a>
24-may-2014	<a href="#">TLI</a>	<a href="#">TIM</a>	<a href="#">SCI</a>	<a href="#">GIF</a>	<a href="#">MEM</a>	<a href="#">mar-2014</a>	<a href="#">sci monthly</a>
						<a href="#">feb-2014</a>	<a href="#">sci monthly</a>

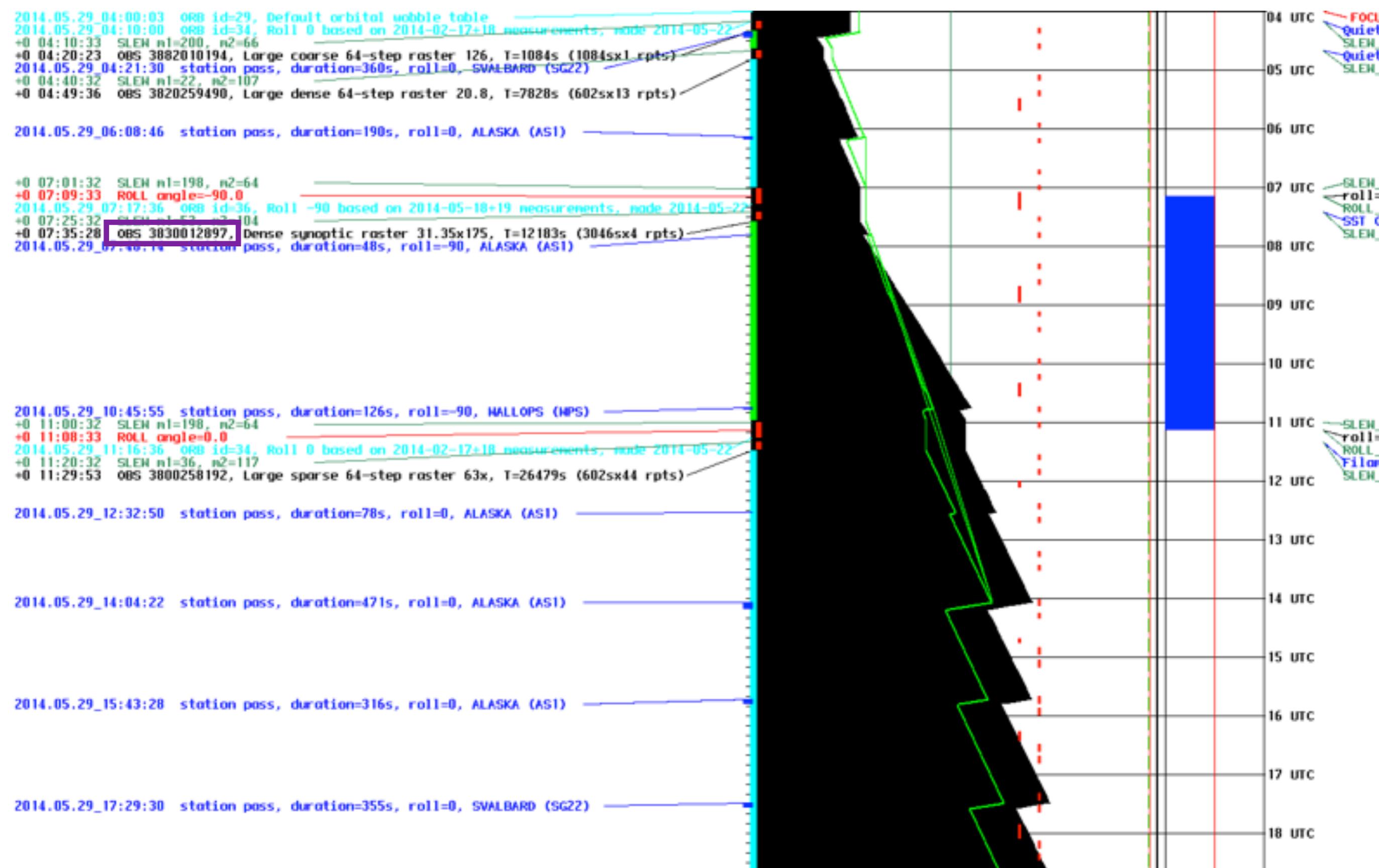
# How is IRIS operated?

<http://iris.lmsal.com/health-safety/timeline/>



# How is IRIS operated?

<http://iris.lmsal.com/health-safety/timeline/>



# Pre-defined Observing Tables

OBS ID parent	Description
0-100	Basic raster type (sit-and-stare, rasters, ...)
0-2,000	SJI choices
0-14,000	Exposure times
0-220,000	Summing modes (applied to FUV, NUV, SJI)
0-500,000	FUV summing modes
0-4,000,000	SJI cadence
0-5,000,000	Readout method (simultaneous, non-simultaneous)
0-10,000,000	Compression choices
0-80,000,000	Linelists
3.6-4 billion	OBS table generation number

**Table 1: OBS ID numbering scheme for table generation v3.6**

- Millions of predefined observing modes
- OBS-ID defines properties
- Three generations available, currently v3.6 is preferred

# Field-of-view and Raster mode

Select OBS from Default Tables 1.0

v36

1 - 0, 1s, 0.3x30, C II Si IV Mg II h/k Mg II wing, Small sit-and-stare

Choose Raster Type

- ✓ 1 - 0, 1s, 0.3x30, C II Si IV Mg II h/k Mg II wing, Small sit-and-stare
- 2 - 0, 1s, 0.3x60, C II Si IV Mg II h/k Mg II wing, Medium sit-and-stare
- 3 - 0, 1s, 0.3x120, C II Si IV Mg II h/k Mg II wing, Large sit-and-stare
- 4 - 0, 1s, 0.3x175, C II Si IV Mg II h/k Mg II wing, Very large sit-and-stare
- 5 - 0, 2s, 0.33x30, C II Si IV Mg II h/k Mg II wing, Small dense 2-step raster
- 6 - 0, 2s, 0.33x60, C II Si IV Mg II h/k Mg II wing, Medium dense 2-step raster
- 7 - 0, 2s, 0.33x120, C II Si IV Mg II h/k Mg II wing, Large dense 2-step raster
- 8 - 0, 2s, 0.33x175, C II Si IV Mg II h/k Mg II wing, Very large dense 2-step raster
- 9 - 0, 2s, 1x60, C II Si IV Mg II h/k Mg II wing, Medium sparse 2-step raster
- 10 - 0, 2s, 1x120, C II Si IV Mg II h/k Mg II wing, Large sparse 2-step raster
- 11 - 0, 2s, 1x175, C II Si IV Mg II h/k Mg II wing, Very large sparse 2-step raster
- 12 - 0, 2s, 2x60, C II Si IV Mg II h/k Mg II wing, Medium coarse 2-step raster
- 13 - 0, 2s, 2x120, C II Si IV Mg II h/k Mg II wing, Large coarse 2-step raster
- 14 - 0, 2s, 2x175, C II Si IV Mg II h/k Mg II wing, Very large coarse 2-step raster
- 15 - 0, 4s, 1x30, C II Si IV Mg II h/k Mg II wing, Small dense 4-step raster
- 16 - 0, 4s, 1x60, C II Si IV Mg II h/k Mg II wing, Medium dense 4-step raster
- 17 - 0, 4s, 1x120, C II Si IV Mg II h/k Mg II wing, Large dense 4-step raster
- 18 - 0, 4s, 1x175, C II Si IV Mg II h/k Mg II wing, Very large dense 4-step raster
- 19 - 0, 4s, 3x60, C II Si IV Mg II h/k Mg II wing, Medium sparse 4-step raster
- 20 - 0, 4s, 3x120, C II Si IV Mg II h/k Mg II wing, Large sparse 4-step raster
- 21 - 0, 4s, 3x175, C II Si IV Mg II h/k Mg II wing, Very large sparse 4-step raster
- 22 - 0, 4s, 6x60, C II Si IV Mg II h/k Mg II wing, Medium coarse 4-step raster
- 23 - 0, 4s, 6x120, C II Si IV Mg II h/k Mg II wing, Large coarse 4-step raster
- 24 - 0, 4s, 6x175, C II Si IV Mg II h/k Mg II wing, Very large coarse 4-step raster
- 25 - 0, 8s, 2.32x30, C II Si IV Mg II h/k Mg II wing, Small dense 8-step raster
- 26 - 0, 8s, 2.32x60, C II Si IV Mg II h/k Mg II wing, Medium dense 8-step raster
- 27 - 0, 8s, 2.32x120, C II Si IV Mg II h/k Mg II wing, Large dense 8-step raster
- 28 - 0, 8s, 2.32x175, C II Si IV Mg II h/k Mg II wing, Very large dense 8-step raster
- 29 - 0, 8s, 7x60, C II Si IV Mg II h/k Mg II wing, Medium sparse 8-step raster

Description

OBSID: 3620000001

Duration (s)	DataVal (bits)	DataRate (bits/s)	Step (s)	Raster (s)	SJT1335 (s)	SJT1406 (s)	SJT1795 (s)	SJT wing (s)
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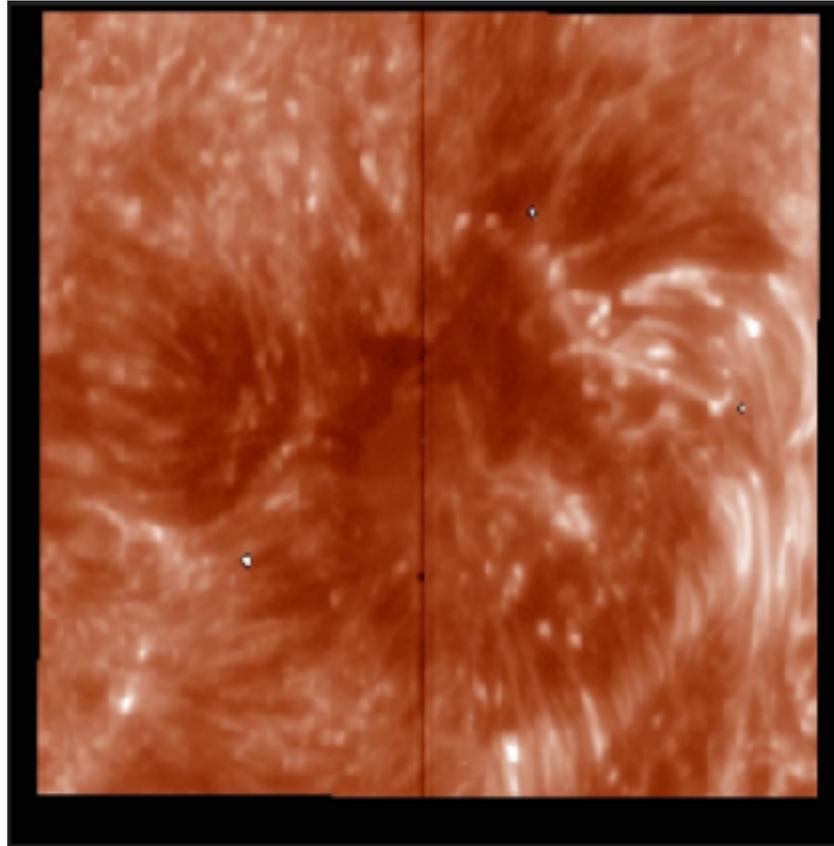
Translate v38ID Get Description Accept

# Field-of-view

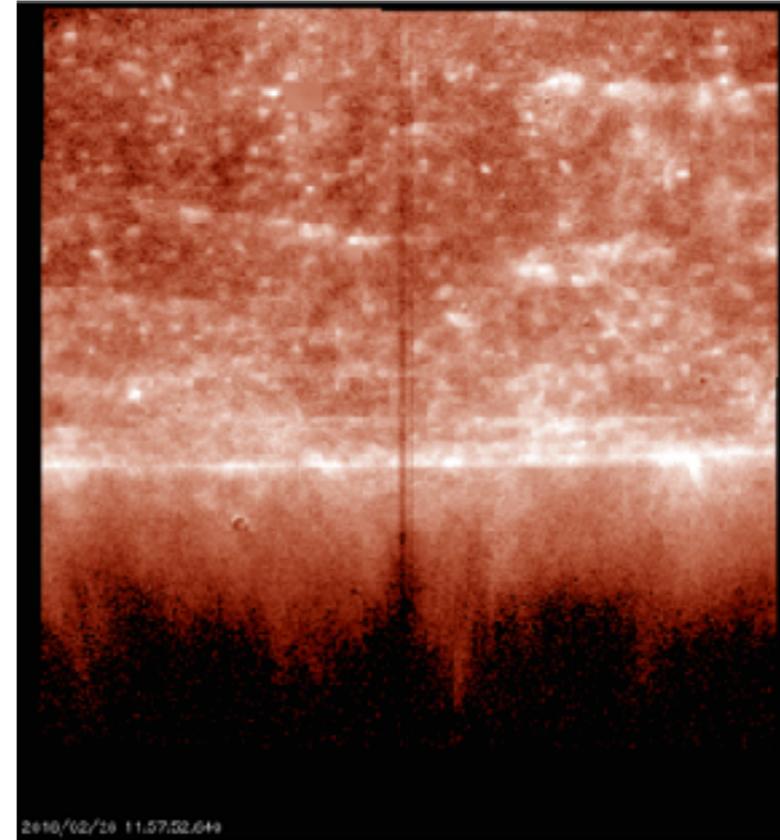
IRIS allows for 4 different choices of field-of-view:

- very large (175"x175" for SJI, 175" along slit for spectra)
- large (120"x120" for SJI, 120" along slit for spectra)
- medium (60"x60" for SJI, 60" along slit for spectra)
- small (60"x60" for SJI, 30" along slit for spectra)

# Field-of-view



Small FOV (30'') is very small and only useful if telemetry is major concern

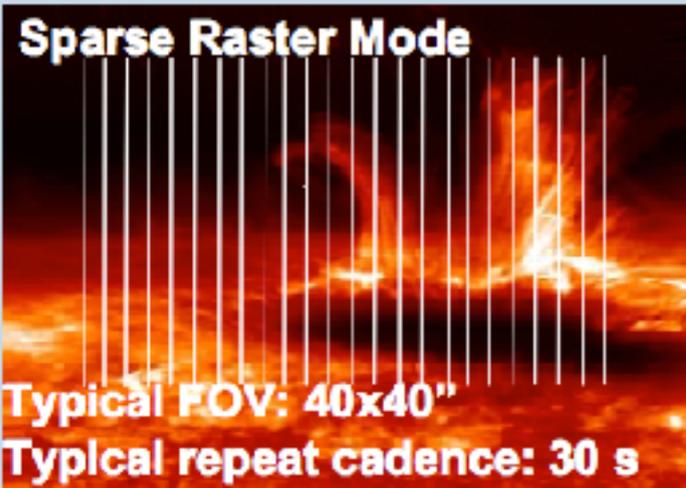
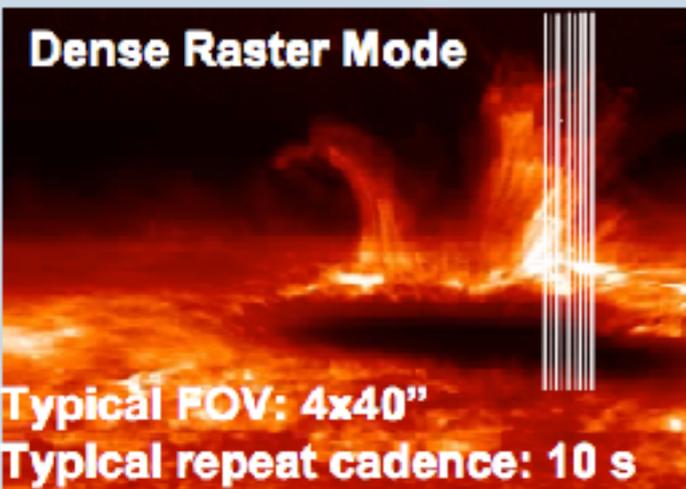
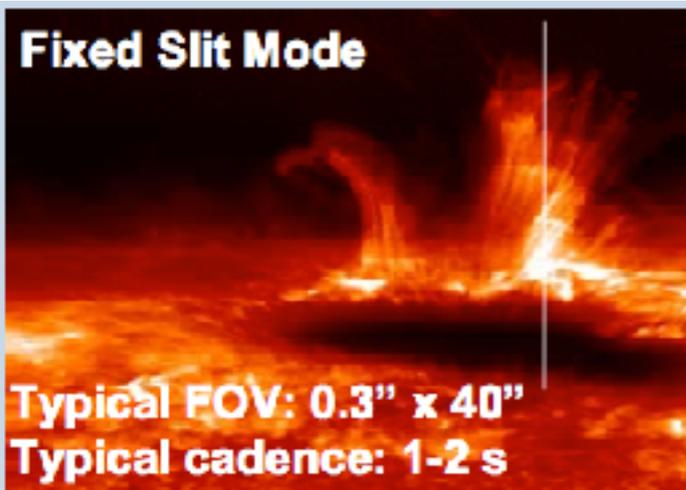


Typical programs use medium (above) or large

For coordinated observations with ground-based telescopes, medium is usually sufficient, unless the science goal aims to capture rare events like flares, CMEs, etc... in which case large or even very large may be preferred.

The required data rate scales with the field-of-view somewhere between linearly and quadratically.

# IRIS raster modes



IRIS can either operate in:

- “sit-and-stare” mode (slit stays at one location on the Sun)
- perform a raster scan.

The raster scan requires two choices to be made:

- step size: 0.35" (dense), 1" (sparse), or 2" (coarse)
- number of steps: 2, 4, 8, 16, 32, 48, 64, 96, 128, 192, 256, 320, 400

The field-of-view of the sit-and-stare is 0.33" x length of slit-read-out.

The field-of-view of the raster scan (in the direction perpendicular to the slit) is then given by “step-size x number-of-steps”, e.g., a dense 320 step raster scan covers about 105". Note that not all combinations of dense/sparse/coarse with the number of steps are available

Sit-and-stare

Dense raster (0.33" steps)

Sparse raster (1" steps)

Coarse raster (2" steps)

OBS-ID	Step size	Number of steps	Raster FOV (arcsec x arcsec)	SJI FOV (arcsec x arcsec)	Description	OBS-ID	Step size	Number of steps	Raster FOV (arcsec x arcsec)	SJI FOV (arcsec x arcsec)	Description
1	0.33	1s	0.3x30	60x60	Small sit-and-stare	44	0.33	10.24x60	32s	60x60	Medium dense 32-step raster
2	0.33	1s	0.3x60	60x60	Medium sit-and-stare	45	0.33	10.24x120	32s	120x120	Large dense 32-step raster
3	0.33	1s	0.3x120	120x120	Large sit-and-stare	46	0.33	10.24x175	32s	175x175	Very large dense 32-step raster
4	0.33	1s	0.3x175	175x175	Very large sit-and-stare	47	1	31x60	32s	60x60	Medium sparse 32-step raster
5	0.33	2s	0.33x30	60x60	Small dense 2-step raster	48	1	31x120	32s	120x120	Large sparse 32-step raster
6	0.33	2s	0.33x60	60x60	Medium dense 2-step raster	49	1	31x175	32s	175x175	Very large sparse 32-step raster
7	0.33	2s	0.33x120	120x120	Large dense 2-step raster	50	2	62x60	32s	60x60	Medium coarse 32-step raster
8	0.33	2s	0.33x175	175x175	Very large dense 2-step raster	51	2	62x120	32s	120x120	Large coarse 32-step raster
9	1	2s	1x60	60x60	Medium sparse 2-step raster	52	2	62x175	32s	175x175	Very large coarse 32-step raster
10	1	2s	1x120	120x120	Large sparse 2-step raster	53	2	94x120	48s	120x120	Large coarse 48-step raster
11	1	2s	1x175	175x175	Very large sparse 2-step raster	54	2	94x175	48s	175x175	Very large coarse 48-step raster
12	2	2s	2x60	60x60	Medium coarse 2-step raster	55	0.33	20.8x60	64s	60x60	Medium dense 64-step raster
13	2	2s	2x120	120x120	Large coarse 2-step raster	56	0.33	20.8x120	64s	120x120	Large dense 64-step raster
14	2	2s	2x175	175x175	Very large coarse 2-step raster	57	0.33	20.8x175	64s	175x175	Very large dense 64-step raster
15	0.33	4s	1x30	60x60	Small dense 4-step raster	58	1	63x60	64s	60x60	Medium sparse 64-step raster
16	0.33	4s	1x60	60x60	Medium dense 4-step raster	59	1	63x120	64s	120x120	Large sparse 64-step raster
17	0.33	4s	1x120	120x120	Large dense 4-step raster	60	1	63x175	64s	175x175	Very large sparse 64-step raster
18	0.33	4s	1x175	175x175	Very large dense 4-step raster	61	2	126x120	64s	120x120	Large coarse 64-step raster
19	1	4s	3x60	60x60	Medium sparse 4-step raster	62	2	126x175	64s	175x175	Very large coarse 64-step raster
20	1	4s	3x120	120x120	Large sparse 4-step raster	63	0.33	31.35x60	96s	60x60	Medium dense 96-step raster
21	1	4s	3x175	175x175	Very large sparse 4-step raster	64	0.33	31.35x120	96s	120x120	Large dense 96-step raster
22	2	4s	6x60	60x60	Medium coarse 4-step raster	65	0.33	31.35x175	96s	175x175	Very large dense 96-step raster
23	2	4s	6x120	120x120	Large coarse 4-step raster	66	1	95x120	96s	120x120	Large sparse 96-step raster
24	2	4s	6x175	175x175	Very large coarse 4-step raster	67	1	95x175	96s	175x175	Very large sparse 96-step raster
25	0.33	8s	2.32x30	60x60	Small dense 8-step raster	68	0.33	42.2x60	128s	60x60	Medium dense 128-step raster
26	0.33	8s	2.32x60	60x60	Medium dense 8-step raster	69	0.33	42.2x120	128s	120x120	Large dense 128-step raster
27	0.33	8s	2.32x120	120x120	Large dense 8-step raster	70	0.33	42.2x175	128s	175x175	Very large dense 128-step raster
28	0.33	8s	2.32x175	175x175	Very large dense 8-step raster	71	0.33	63.1x60	192s	60x60	Medium dense 192-step raster
29	1	8s	7x60	60x60	Medium sparse 8-step raster	72	0.33	63.1x120	192s	120x120	Large dense 192-step raster
30	1	8s	7x120	120x120	Large sparse 8-step raster	73	0.33	63.1x175	192s	175x175	Very large dense 192-step raster
31	1	8s	7x175	175x175	Very large sparse 8-step raster	74	0.33	84.2x120	256s	120x120	Large dense 256-step raster
32	2	8s	14x60	60x60	Medium coarse 8-step raster	75	0.33	84.2x175	256s	175x175	Very large dense 256-step raster
33	2	8s	14x120	120x120	Large coarse 8-step raster	76	0.33	105.3x120	320s	120x120	Large dense 320-step raster
34	2	8s	14x175	175x175	Very large coarse 8-step raster	77	0.33	105.3x175	320s	175x175	Very large dense 320-step raster
35	0.33	16s	5x60	60x60	Medium dense 16-step raster	78	0.33	131.7x175	400s	175x175	Very large dense 400-step raster
36	0.33	16s	5x120	120x120	Large dense 16-step raster	79	1	35x175	36s	175x175	Sparse synoptic raster
37	0.33	16s	5x175	175x175	Very large dense 16-step raster	80	2	34x175	18s	175x175	Coarse synoptic raster
38	1	16s	15x60	60x60	Medium sparse 16-step raster						
39	1	16s	15x120	120x120	Large sparse 16-step raster						
40	1	16s	15x175	175x175	Very large sparse 16-step raster						
41	2	16s	30x60	60x60	Medium coarse 16-step raster						
42	2	16s	30x120	120x120	Large coarse 16-step raster						
43	2	16s	30x175	175x175	Very large coarse 16-step raster						



# Exposure time

The signal-to-noise consideration depends on the type of spectral lines observed. The S/N of the NUV spectra is much higher than for the FUV channel, so the FUV signal requirements usually set the exposure time. For the brightest lines in the FUV (C II 1335Å and 1402Å) reasonable signal can be obtained in:

- 2-4s for active regions
- 8-15s for quiet Sun and coronal hole

For fainter lines (e.g., O I 1355Å, Fe XII 1349Å) , longer exposure times and/or summing will be required (as well as non-simultaneous readout and lossless compression).

Note that when pointing at active regions, the Automatic Exposure Control (AEC) algorithm usually operates to limit and reduce exposure times when large flares occur.

**Best option is to study previous datasets and determine the optimal exposure time for your science goals**

# Raster cadence

Select OBS from Default Tables 1.0

v36

1 - 0, 1s, 0.3x30, C II Si IV Mg II h/k Mg II w... 1

0 - C II Si IV Mg II h/k Mg II w 0

0 - Exposure 1s 0

0 - Spatial x 1, Spectral x 1 0

0 - FUV binned same as NUV 0

0 - SJI cadence default 0

0 - Non-simultaneous readout 0

0 - Default compression 0

0 - Large linelist 0

Full OBS ID Description  
3600000001 | Small sit-and-stare 0.3x30 1s | 18.01 | 31.57 | 1.2 | 2.6+/-0.1 | 2.6+/-0.1 | 18.0+/-0.0 | 18.0+/-0.0 | 18.0+/-0.0 | 18.0+/-0.0

OBSID: 3600000001

OBS ID	Description	Duration (s)	DataVol [Mbit]	DataRate [Mbit/s]	Step (s)	Raster (s)	SJI1355 (s)	SJI1408 (s)	SJI1795 (s)	SJI wing (s)
3600000001	Small sit-and-stare 0.3x30 1s	18.01	31.57	1.2	2.6+/-0.1	2.6+/-0.1	18.0+/-0.0	18.0+/-0.0	18.0+/-0.0	18.0+/-0.0

Reset

Cadence of raster in seconds

Translate v3RID Get Description Accept

Once you have decided on which type of raster you require, you should consider the raster cadence that results from your choice. This is given by:

-number-of-steps x (exposure time + overhead)

The overhead depends on how much of the detector you read out, but is typically of order 0.5-1.5 s. This means that a 320 step raster with 2s exposures can take up to  $320 \times (2+1.5) = 1120$  seconds, i.e., almost 20 minutes.

# Raster cadence

Considerations for raster cadence:

- Obviously, the larger the number of raster steps, the slower the repeat cadence.
  - Your choice will be a compromise between how dynamic your events are, and what kind of spatial coverage you need to cover them adequately.
  - Think of using a sparse or coarse step size to increase spatial coverage while reducing number of steps
  - To have a better raster cadence, think about reducing the exposure time and retaining signal-to-noise by summing onboard
  - Exact numbers of raster timing can be obtained through the OBS Table Tool.

# Spatial and Spectral Resolution

Select OBS from Default Tables 1.0

v36

1 - 0, 1s, 0.3x30, C II Si IV Mg II h/k Mg II wl...

0 - C II Si IV Mg II h/k Mg II w

Choose Summing Mode

- ✓ 0 - "Spatial x 1, Spectral x 1"
- 20000 - "Spatial x 1, Spectral x 2"
- 40000 - "Spatial x 1, Spectral x 4"
- 60000 - "Spatial x 1, Spectral x 8"
- 80000 - "Spatial x 2, Spectral x 1"
- 100000 - "Spatial x 2, Spectral x 2"
- 120000 - "Spatial x 2, Spectral x 4"
- 140000 - "Spatial x 2, Spectral x 8"
- 160000 - "Spatial x 4, Spectral x 1"
- 180000 - "Spatial x 4, Spectral x 2"
- 200000 - "Spatial x 4, Spectral x 4"
- 220000 - "Spatial x 4, Spectral x 8"

Full OBS ID Description

3600000001 | Small sit-and-stare 0.3x30 1s | 18.01 | 31.57 | 1.2 | 2.6+/-0.1 | 2.6+/-0.1 | 18.0+/-0.0 | 18.0+/-0.0 |

18.0+/-0.0 | 18.0+/-0.0

OBS ID: 3600000001

Description	Duration (s)	DataVal [Mbit]	DataRate (Mbit/s)	Step (s)	Raster (s)	SIT1335 (s)	SIT1400 (s)	SIT2795 (s)	SIT wing (s)
3600000001   Small sit-and-stare 0.3x30 1s	18.01	31.57	1.2	2.6+/-0.1	2.6+/-0.1	18.0+/-0.0	18.0+/-0.0	18.0+/-0.0	18.0+/-0.0

Reset Translate v36ID Get Description Accept

The highest spatial and spectral resolution (no onboard summing) is the default observing mode.

Binning on the ground (i.e., after data was taken) can always be used during the data analysis stage...

But summing onboard offers significant advantages:

- it lowers the data rate so observations can be run for a longer duration
- it boosts the signal of faint lines above the digitization threshold (which on-the-ground summing cannot accomplish)
- it increases S/N so that exposure times can be lowered thus improving raster cadence

# Spatial and Spectral Resolution

Select OBS from Default Tables 1.0

v36

1 - 0, 1s, 0.3x30, C II Si IV Mg II h/k Mg II wl...

0 - C II Si IV Mg II h/k Mg II w

Choose Summing Mode

- ✓ 0 - "Spatial x 1, Spectral x 1"
- 20000 - "Spatial x 1, Spectral x 2"
- 40000 - "Spatial x 1, Spectral x 4"
- 60000 - "Spatial x 1, Spectral x 8"
- 80000 - "Spatial x 2, Spectral x 1"
- 100000 - "Spatial x 2, Spectral x 2"
- 120000 - "Spatial x 2, Spectral x 4"
- 140000 - "Spatial x 2, Spectral x 8"
- 160000 - "Spatial x 4, Spectral x 1"
- 180000 - "Spatial x 4, Spectral x 2"
- 200000 - "Spatial x 4, Spectral x 4"
- 220000 - "Spatial x 4, Spectral x 8"

Full OBS ID Description

3600000001 | Small slit-and-stare 0.3x30 1s | 18.01 | 31.57 | 1.2 | 2.6+/-0.1 | 2.6+/-0.1 | 18.0+/-0.0 | 18.0+/-0.0 |

OBS ID: 3600000001

Description	Duration (s)	DataVal (Mbit)	DataRate (Mbit/s)	Step (s)	Baster (s)	S1T1335 (s)	S1T1408 (s)	S1T2795 (s)	S1T wing (s)
3600000001   Small slit-and-stare 0.3x30 1s	18.01	31.57	1.2	2.6+/-0.1	2.6+/-0.1	18.0+/-0.0	18.0+/-0.0	18.0+/-0.0	18.0+/-0.0

Reset Translate v36ID Get Description Accept

Data can be summed onboard in the spatial direction (x2, x4) or in the spectral direction (x2, x4, x8). A summing mode of 1x2 would be no summing spatially, and x2 summing in the spectral direction.

Note that asymmetric summing modes (e.g., 1x4, 2x1) are typically discouraged since they lead to slit-jaw images in which the spatial of both spatial dimension is different, i.e., images with incorrect aspect ratio. If you desire asymmetric summing, please provide a detailed scientific rationale.

# FUV only summing

Select OBS from Default Tables 1.0

v36

1 - 0, 1s, 0.3x30, C II Si IV Mg II h/k Mg II w... 1

0 - C II Si IV Mg II h/k Mg II w 0

0 - Exposure 1s 0

Choose FUV Summing Mode

0 - FUV binned same as NUV 0

250000 - FUV spectrally rebinned x 2 0

500000 - FUV spectrally rebinned x 4 0

0 - Non-simultaneous readout 0

0 - Default compression 0

0 - Large linelist 0

Full OBS ID Description

3600000001 | Small sit-and-stare 0.3x30 1s | 18.01 | 31.57 | 1.2 | 2.6+/-0.1 | 2.6+/-0.1 | 18.0+/-0.0 | 18.0+/-0.0 | 18.0+/-0.0 | 18.0+/-0.0

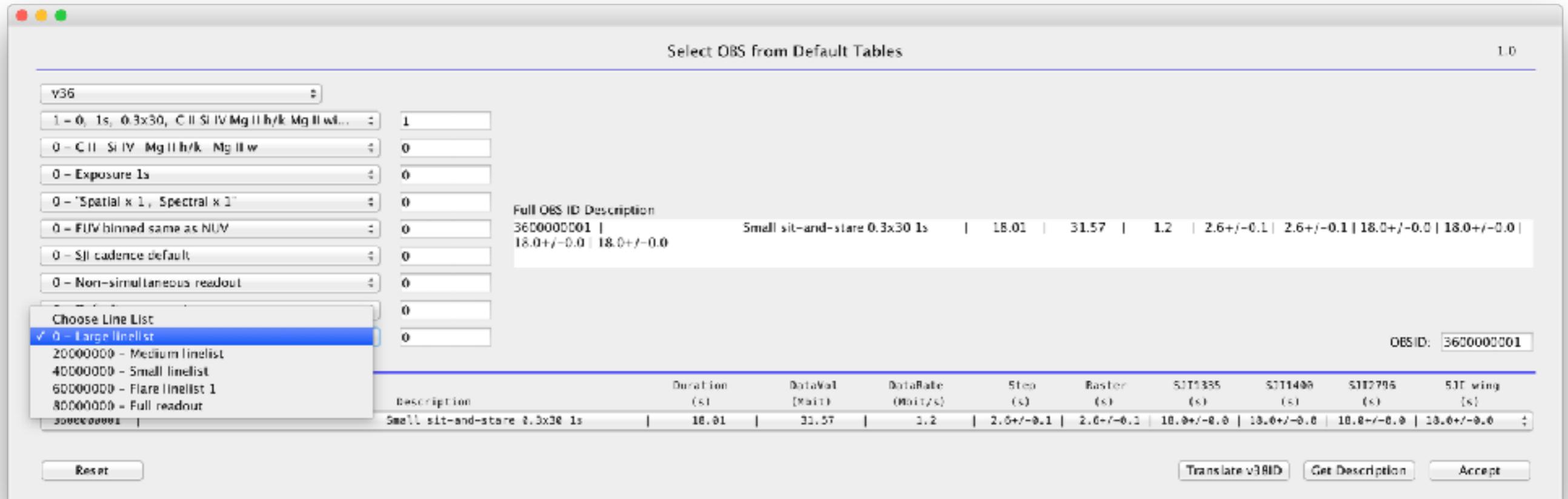
OBSID: 3600000001

OBS ID	Description	Duration (s)	DataVal [bits]	DataRate (Mbit/s)	Step (s)	Raster (s)	S/I1335 (s)	S/I1400 (s)	S/I1795 (s)	S/I wing (s)
3600000001	Small sit-and-stare 0.3x30 1s	18.01	31.57	1.2	2.6+/-0.1	2.6+/-0.1	18.0+/-0.0	18.0+/-0.0	18.0+/-0.0	18.0+/-0.0

Reset Translate v38ID Get Description Accept

Since the S/N in the NUV spectra is much better than in the FUV, there is also an FUV specific summing mode (FUVx2, FUVx4, FUVx8). Most used summing modes are probably FUVx2 (spectral summing x 2 but only for the FUV spectra) and 2x2 (i.e., spatial x2, spectral x 2, for all channels).

# Line Lists



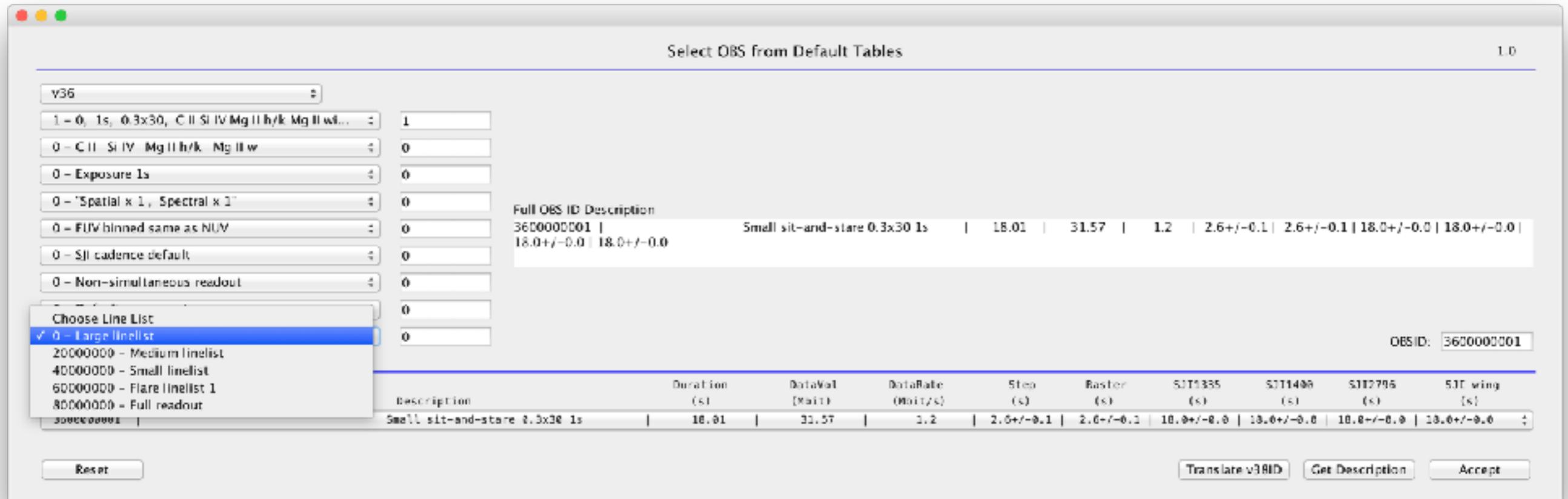
While IRIS observes a spectral range from 1331-1358Å, 1390-1406Å and 2782-2834Å, we rarely read out and downlink the full detector range.

This is to save telemetry and speed up read-out.

We have five pre-defined linelists you can choose from.

By default we use the medium line list. If you desire a different linelist, please let us know.

# Line Lists



Five different linelists have been predefined. The 80 million series is full readout so contains the full wavelength range in both FUV and NUV.

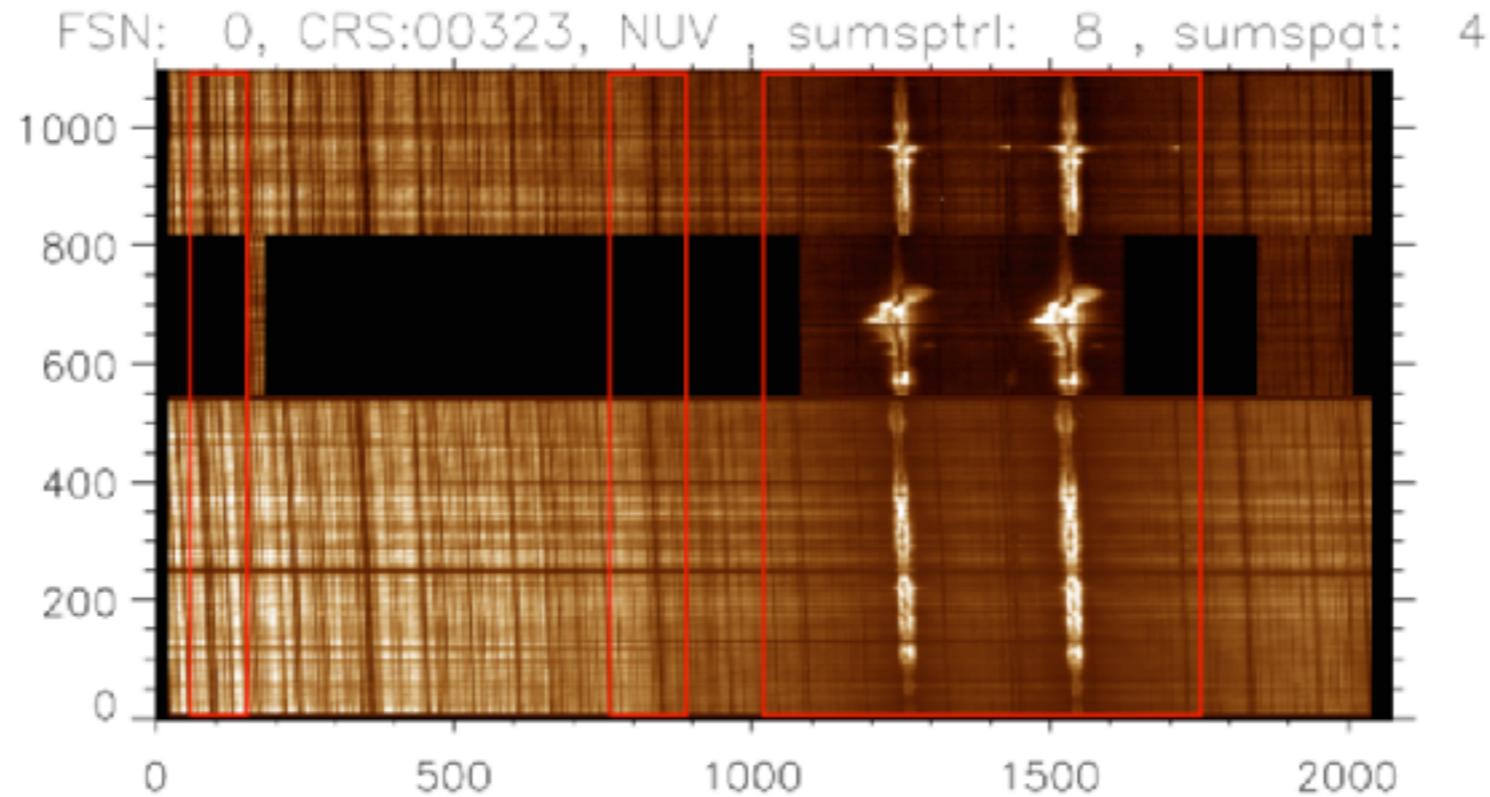
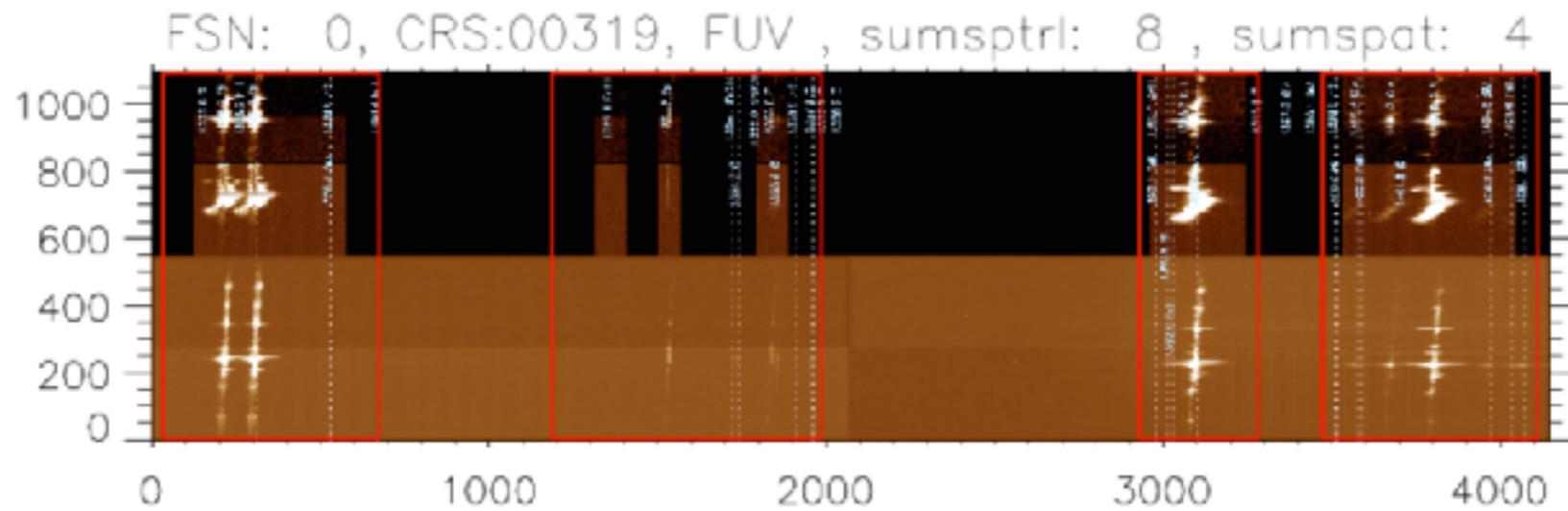
The other linelists are:

- Large Linelist (0 million)
- Medium Linelist (20 million)
- Small Linelist (40 million)
- Flare Linelist (60 million)

Note that larger wavelength regions take longer to read out and affect the cadence. These also lead to larger downlink rate. The fastest cadence can be reached with the small linelist.

# Line Lists

## 7.1 Large Linelist (0 million)

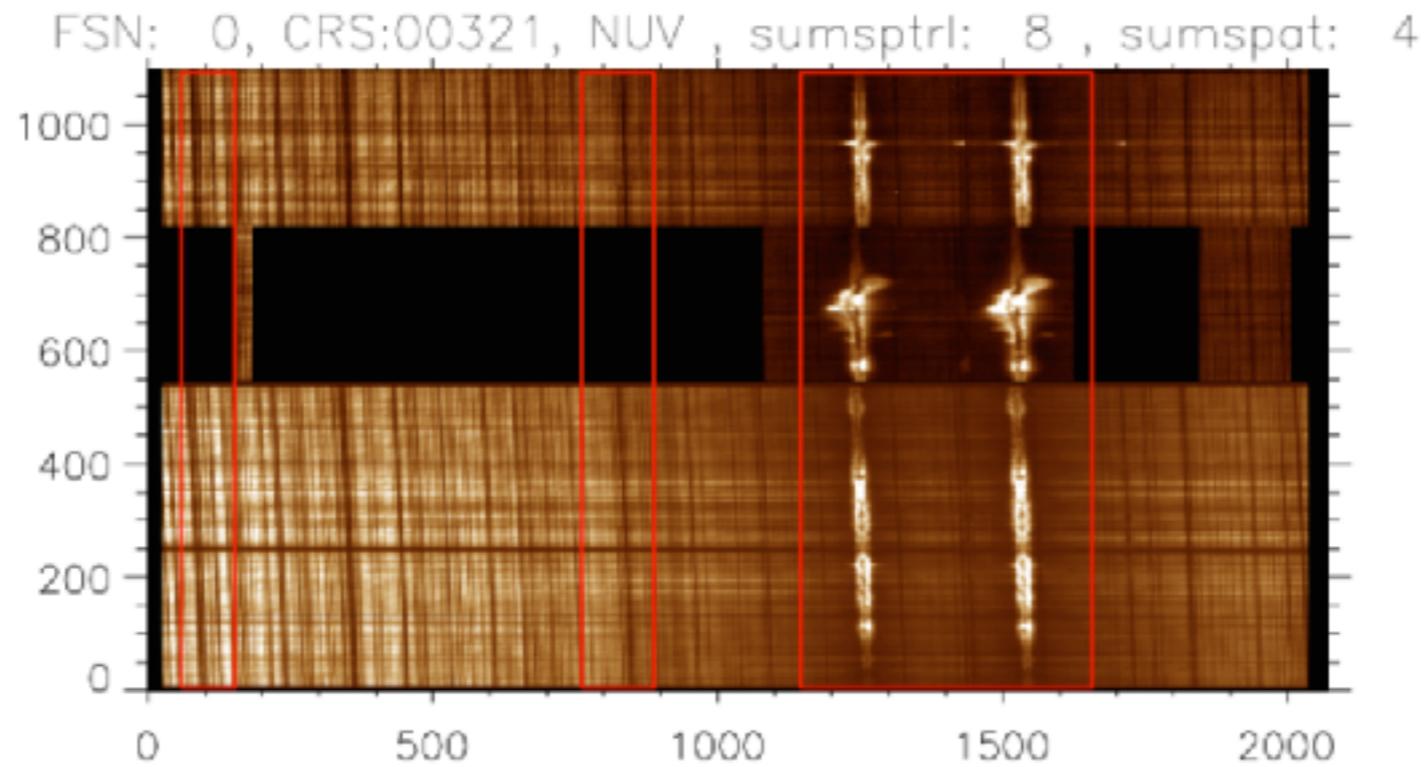
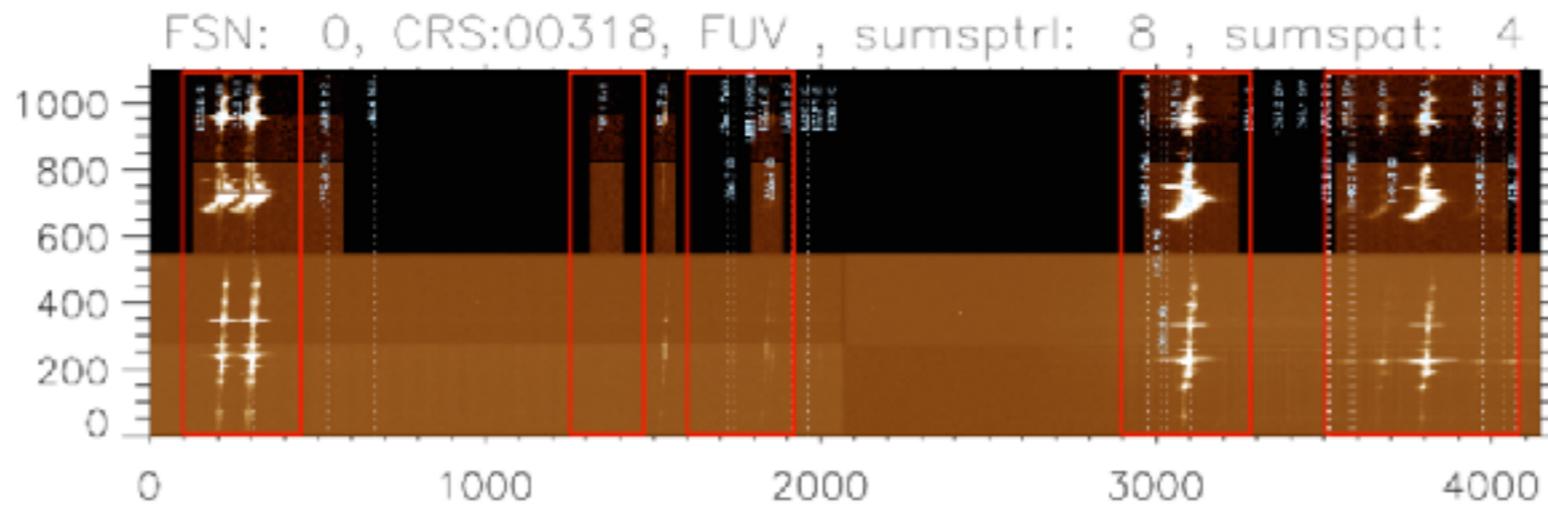


**FUV:** Regions of interest containing most lines are downlinked.

**NUV:** A spectral region of about  $\sim 600$  km/s (Doppler) around Mg II lines is read-out . Only linelist apart from flare and full read-out list that will also capture Mg II 3p-3d transitions for both lines.

# Line Lists

## 7.2 Medium Linelist (20 million)

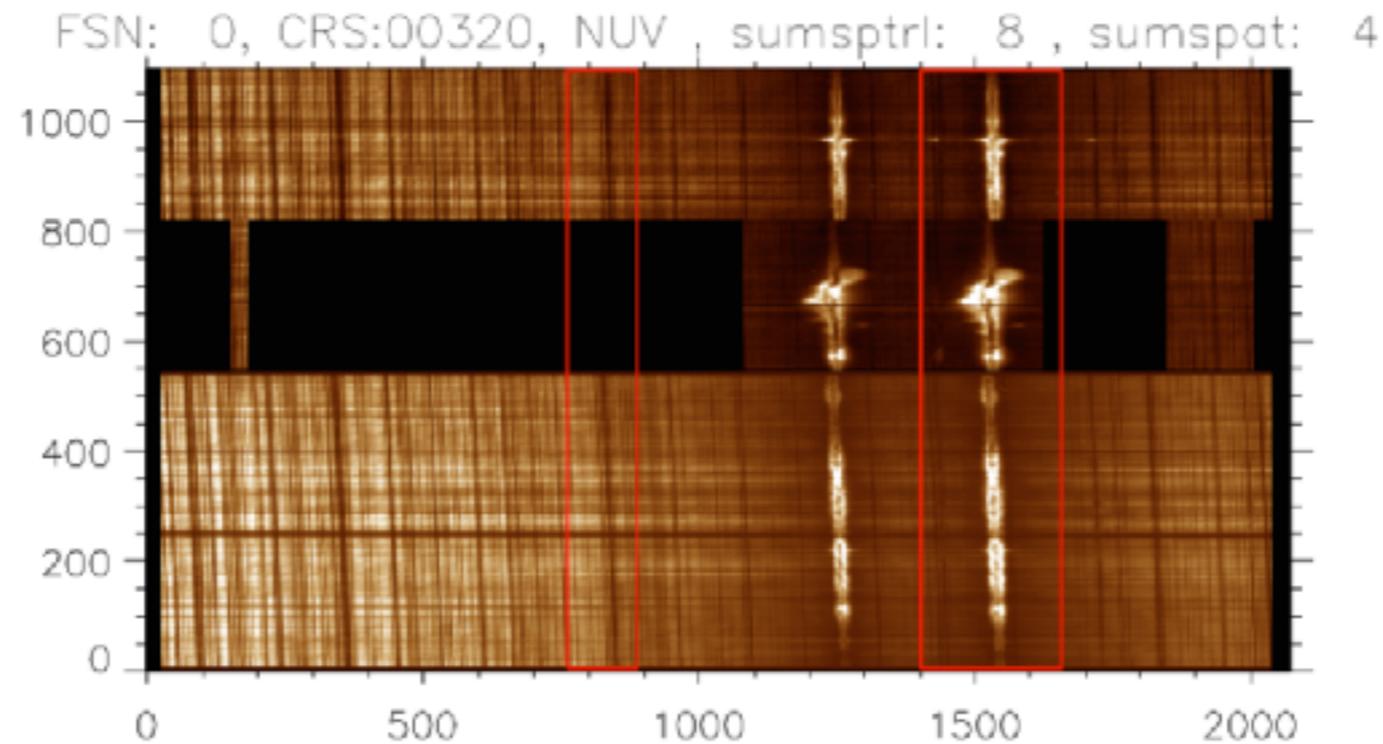
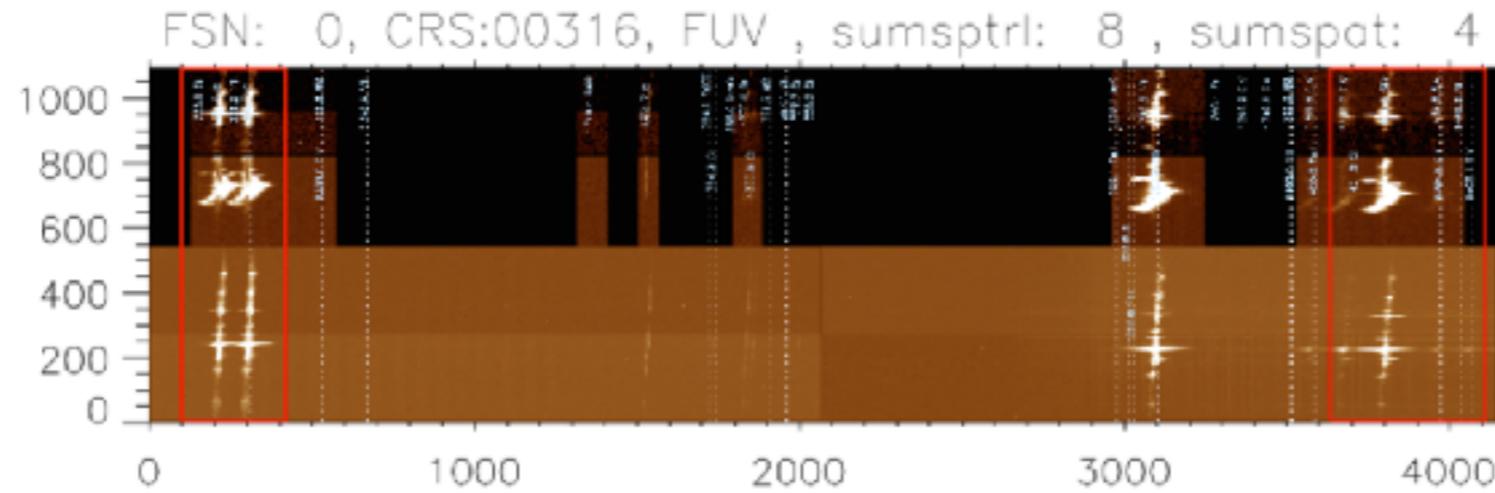


**FUV:** includes most lines, 300 km/s for most regions.

**Medium:** Both Mg II lines, photospheric reference line, plus continuum. ~300 km/s Doppler for Mg II.

# Line Lists

## 7.3 Small Linelist (40 million): NO CORONAL LINE

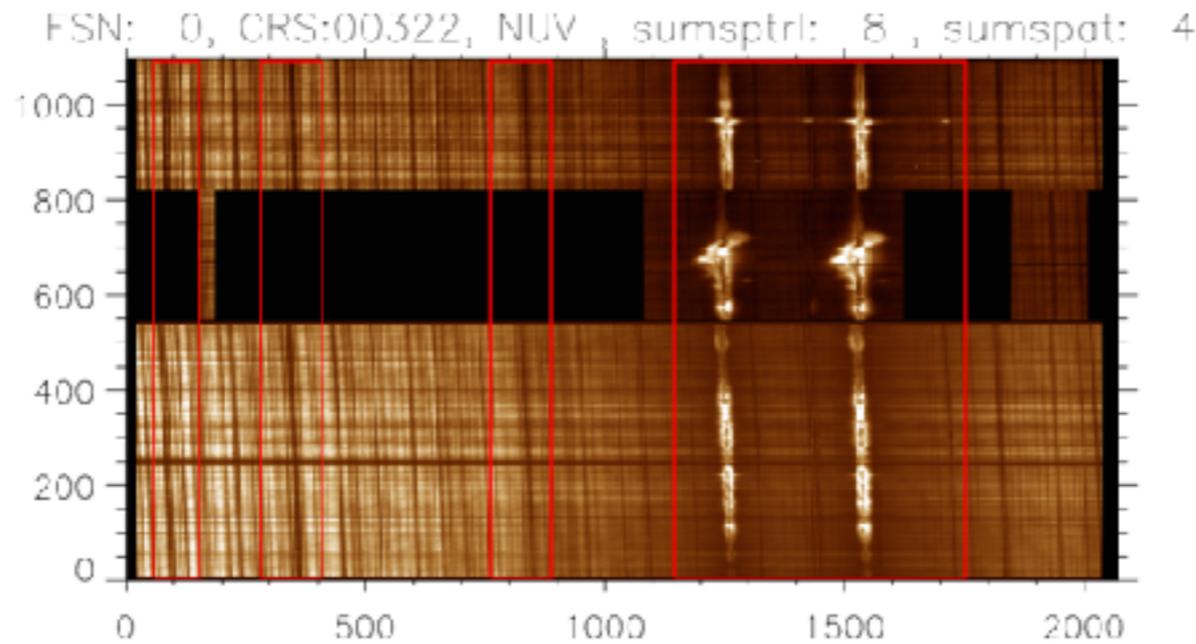
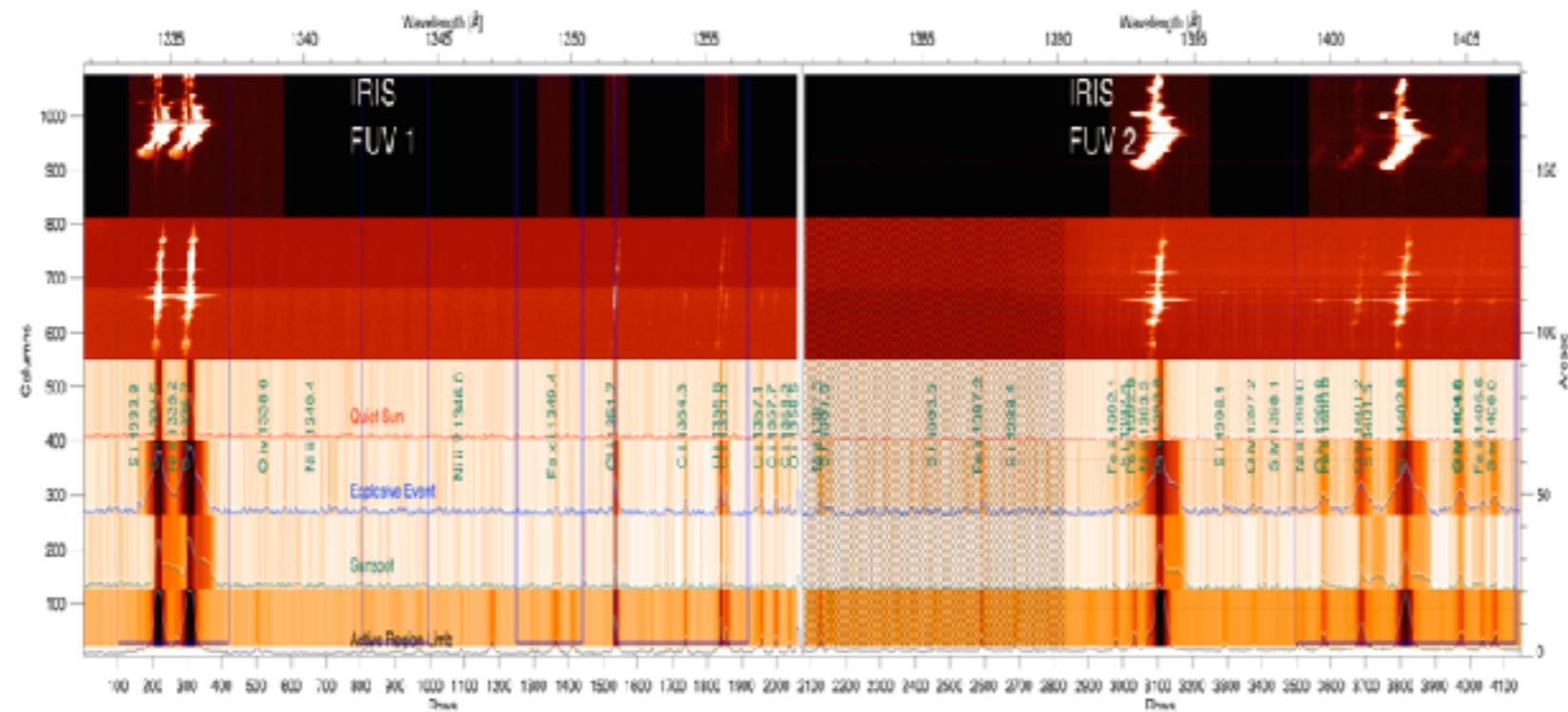


**FUV:** minimal readout for fast observing programs, ~400 km/s Doppler shifts, focusing on Si IV and C II. No Fe XII or O IV 1399.

**NUV:** Only Mg II K line, plus photospheric reference. ~300 km/s Doppler.

# Line Lists

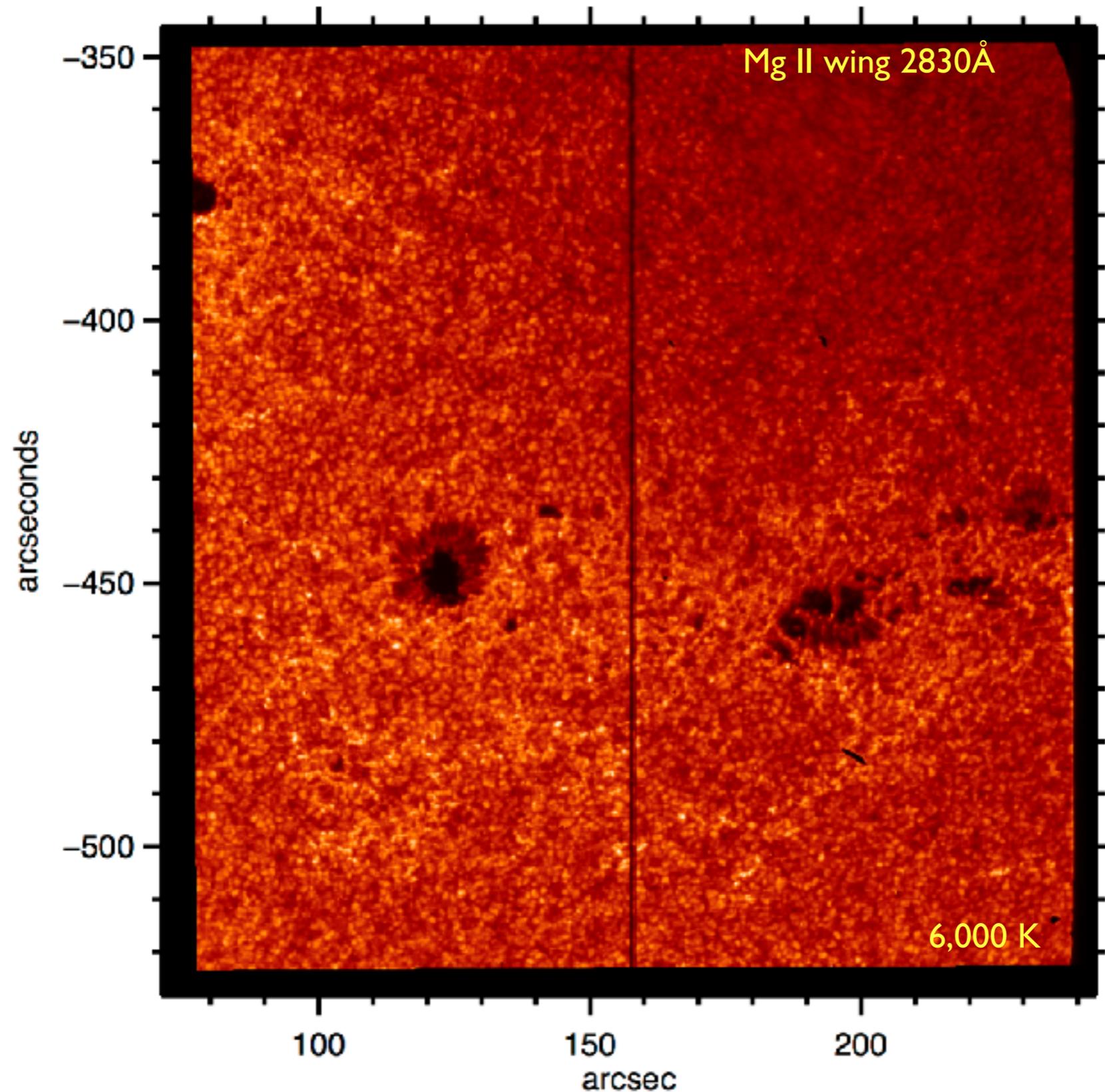
## 7.4 Flare Linelist (60 million)



**FUV:** Si IV and CII. Both Fe lines (XXI and XII) and (allowed) O IV 1343.5 line (flare only). Also includes the S IV 1406 line to assist use of O IV 1399/1401/1404 density sensitive line pairs.

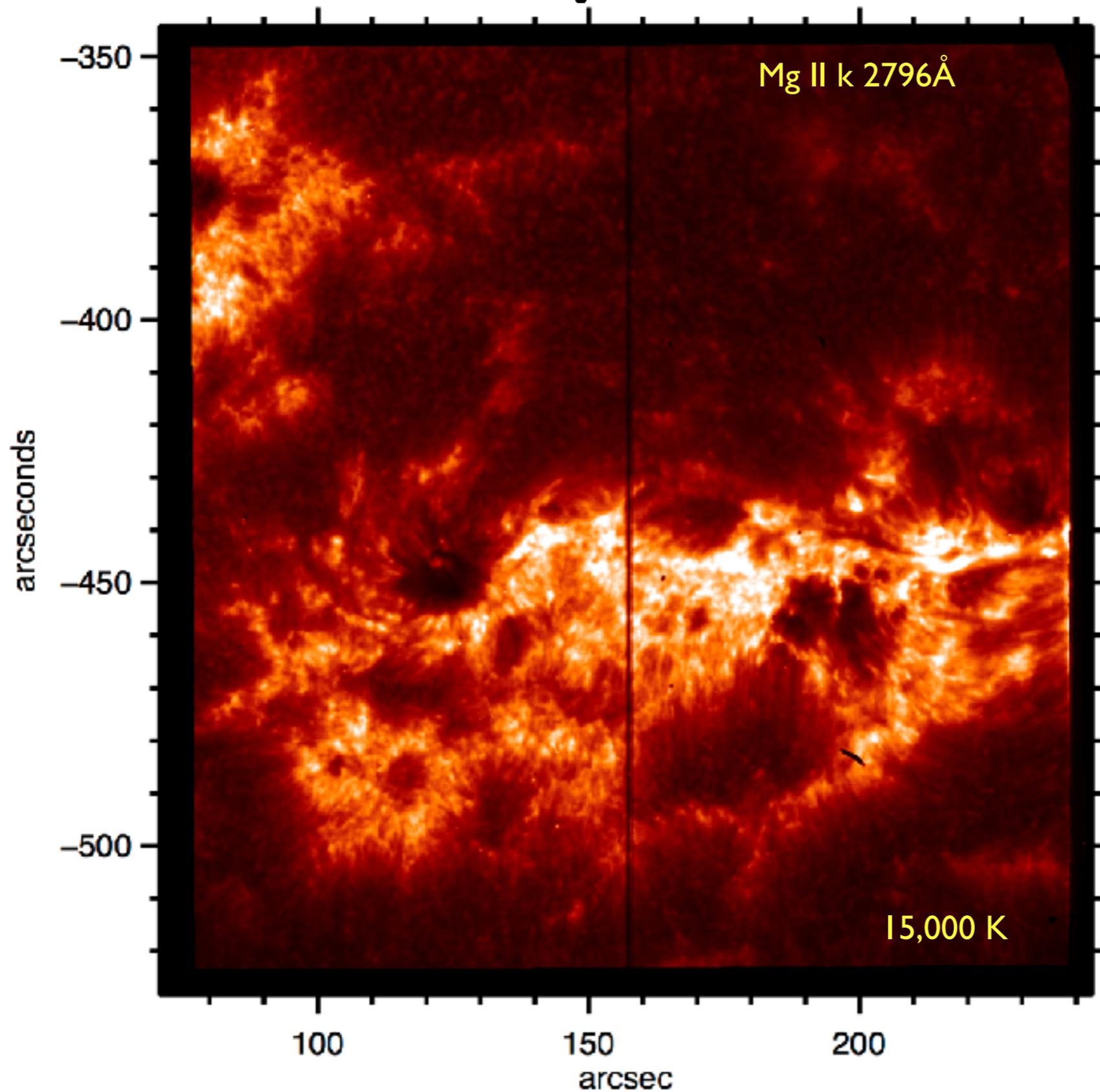
**NUV:** 600 km/s Doppler for blue wing.

# Slit-jaw Choices



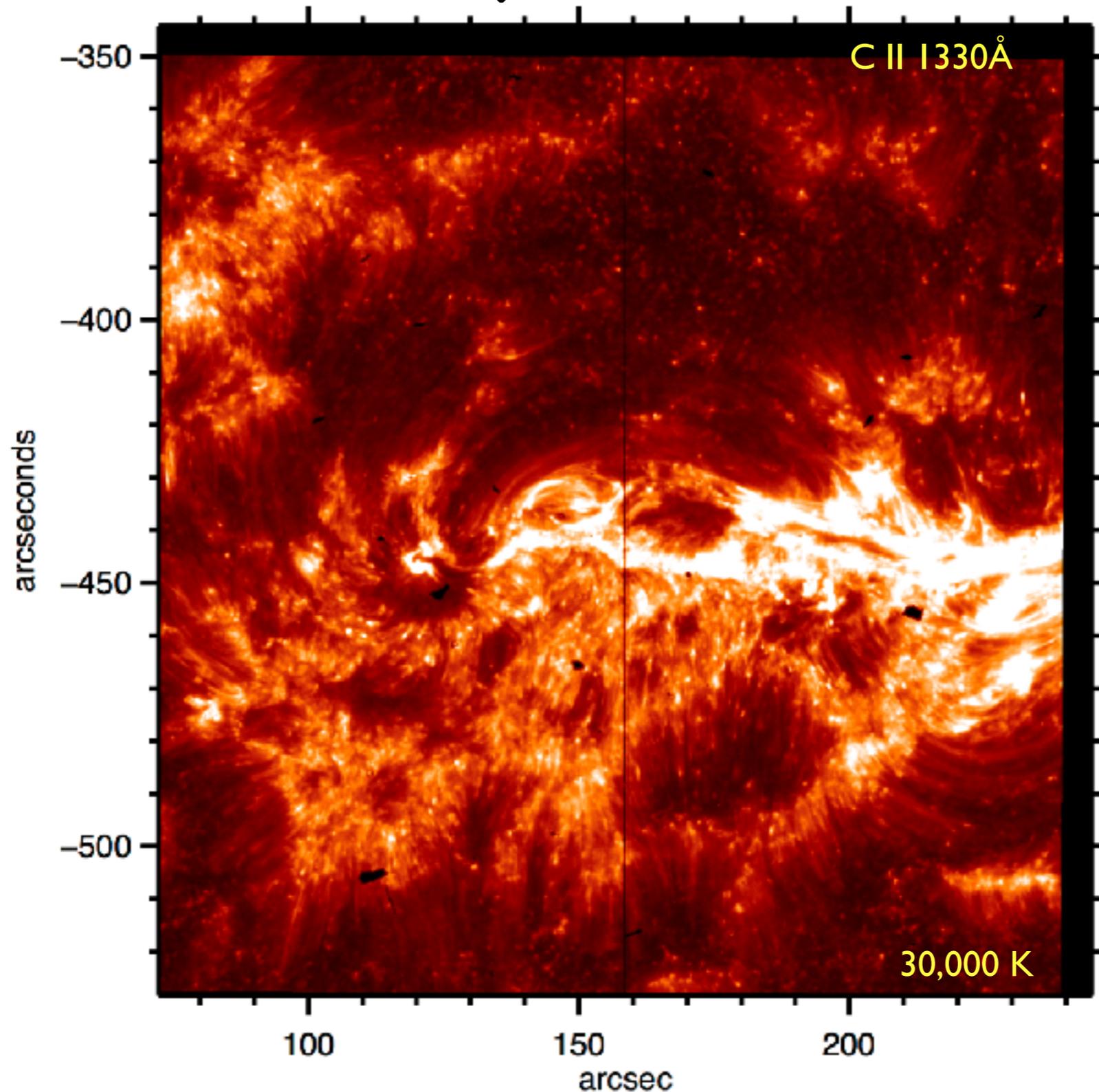
2830, dominated by wing of Mg II h/k lines (photosphere), best for alignment with photospheric images from the ground

# Slit-jaw Choices



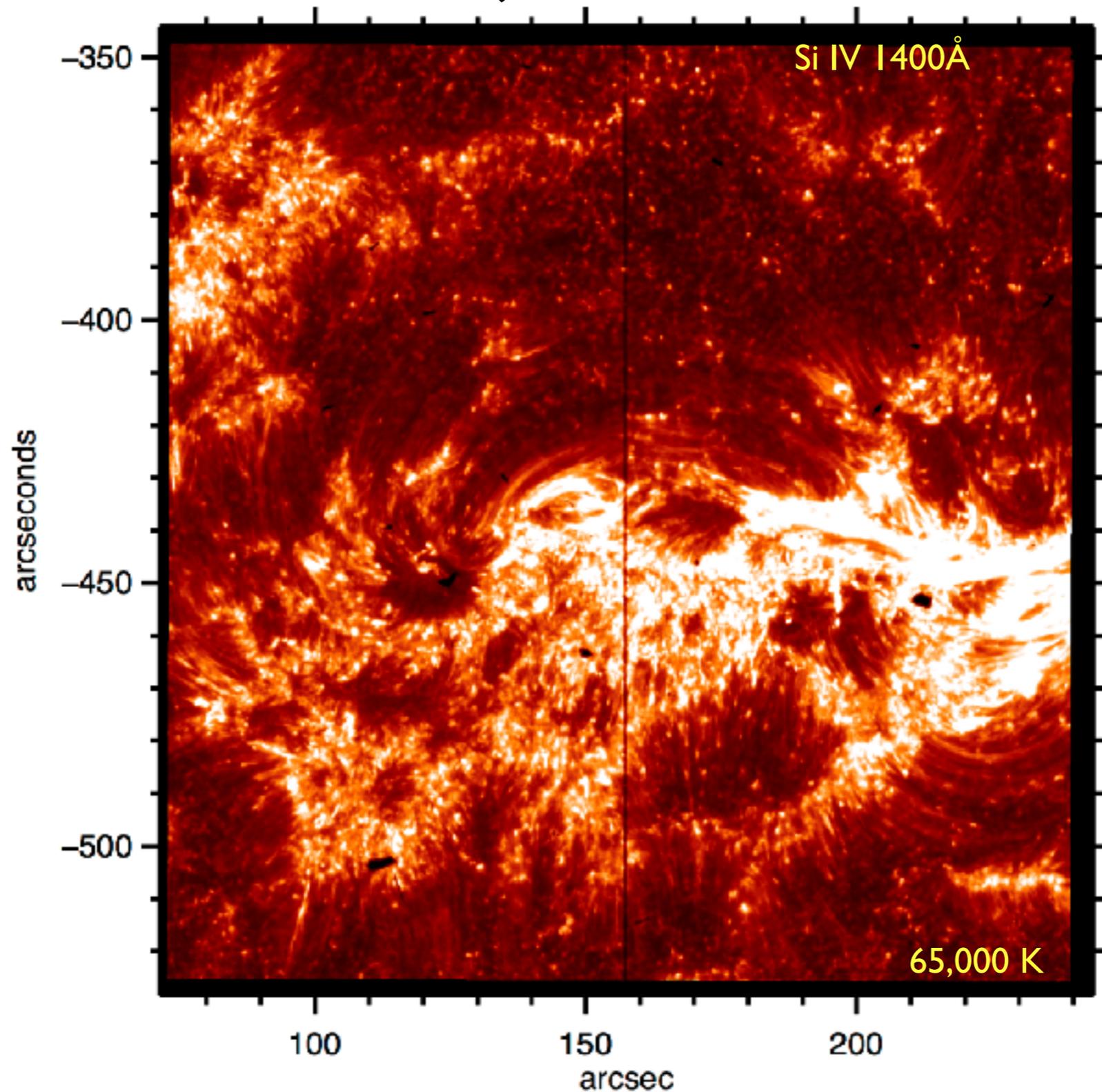
2796, dominated by Mg II k (chromosphere) and inner wings (photosphere), can be aligned with SDO 1600 and photospheric images from the ground

# Slit-jaw Choices



1330, dominated by FUV continuum (upper photosphere, low chromosphere) and C II 1335 Å lines (upper chromosphere, lower transition region), can be aligned with SDO 1600 (and some bright points are the same as photospheric/chromospheric images from the ground)

# Slit-jaw Choices



1400, dominated by FUV continuum (upper photosphere, low chromosphere) and Si IV 1394/1402Å lines (transition region), can be aligned with SDO 1600 (and some bright points are the same as photospheric/chromospheric images from the ground)

# Slit-jaw Choices

Select OBS from Default Tables 1.0

v36

Choose SJI Type

- ✓ 0 - C II Si IV Mg II h/k Mg II w
- 100 - C II Si IV Mg II h/k Mg II w s
- 200 - C II Si IV Mg II w s
- 300 - C II Mg II h/k Mg II w s
- 400 - Si IV Mg II h/k Mg II w s
- 500 - C II Mg II w s
- 600 - Si IV Mg II w s
- 700 - Mg II h/k Mg II w s
- 800 - Si IV Mg II h/k Mg II w
- 900 - C II Mg II h/k Mg II w
- 1000 - C II Si IV Mg II w
- 1100 - C II Si IV Mg II h/k
- 1200 - C II Si IV
- 1300 - C II Mg II h/k
- 1400 - Si IV Mg II h/k
- 1500 - C II
- 1600 - Si IV
- 1700 - Mg II h/k
- 1800 - Mg II w
- 1900 - Mg II h/k Mg II w

1  
0  
0  
0  
0  
0  
0  
0  
0  
0

Full OBS ID Description  
3600000001 | Small slit-and-stare 0.3x30 1s | 18.01 | 31.57 | 1.2 | 2.6+/-0.1 | 2.6+/-0.1 | 18.0+/-0.0 | 18.0+/-0.0 | 18.0+/-0.0 | 18.0+/-0.0

OBSID: 3600000001

Description	Duration (s)	DataVal (Mbit)	DataRate (Mbit/s)	Step (s)	Baster (s)	SJI335 (s)	SJI400 (s)	SJI795 (s)	SJI wing (s)
Small slit-and-stare 0.3x30 1s	18.01	31.57	1.2	2.6+/-0.1	2.6+/-0.1	18.0+/-0.0	18.0+/-0.0	18.0+/-0.0	18.0+/-0.0

Translate v38ID Get Description Accept

For your desired observations, you should choose which slit-jaw filters you would like images from, with almost any combination of these 4 filters available.

Keep in mind that these slit-jaw images cannot be taken simultaneously — one type of slit-jaw image is available per time-step (during which we always take FUV and NUV spectra). So if you would like all 4 slit-jaw types, the fastest cadence of each individual SJI type is 4x cadence of spectra.

It is possible to get any combination of 2796/1330/1400 at high cadence and combine it with a slower cadence for 2830 (for context).



# Compression mode

Select OBS from Default Tables 1.0

v36

1 - 0, 1s, 0.3x30, C II Si IV Mg II h/k Mg II w... 1

0 - C II Si IV Mg II h/k Mg II w 0

0 - Exposure 1s 0

0 - Spatial x 1, Spectral x 1 0

0 - FUV binned same as NUV 0

0 - SJI cadence default 0

Choose Compression

✓ 0 - Default compression

10000000 - Lossless compression

Full OBS ID Description

3600000001 | Small sit-and-stare 0.3x30 1s | 18.01 | 31.57 | 1.2 | 2.6+/-0.1 | 2.6+/-0.1 | 18.0+/-0.0 | 18.0+/-0.0 | 18.0+/-0.0 | 18.0+/-0.0

OBS ID: 3600000001

OBS ID	Description	Duration (s)	DataVol (Mbit)	DataRate (Mbit/s)	Step (s)	Raster (s)	SJI1335 (s)	SJI1400 (s)	SJI1795 (s)	SJI wing (s)
3600000001	Small sit-and-stare 0.3x30 1s	18.01	31.57	1.2	2.6+/-0.1	2.6+/-0.1	18.0+/-0.0	18.0+/-0.0	18.0+/-0.0	18.0+/-0.0

Reset Translate v38ID Get Description Accept

Default is lossy compression which is adequate for bright lines and normal observations

If you're interested in faint lines, choose "lossless compression". This leads to higher data rates

# Readout mode

Select OBS from Default Tables 1.0

v36

1 - 0, 1s, 0.3x30, C II Si IV Mg II h/k Mg II w... 1

0 - C II Si IV Mg II h/k Mg II w 0

0 - Exposure 1s 0

0 - "Spatial x 1, Spectral x 1" 0

0 - FUV binned same as NUV 0

0 0

0 0

0 0

0 0

0 0

0 - Large linelist 0

Choose whether readout staggered

0 - Non-simultaneous readout

5000000 - Simultaneous readout

OBS ID: 3600000001

Full OBS ID Description  
3600000001 | Small sit-and-stare 0.3x30 1s | 18.01 | 31.57 | 1.2 | 2.6+/-0.1 | 2.6+/-0.1 | 18.0+/-0.0 | 18.0+/-0.0  
18.0+/-0.0 | 18.0+/-0.0

OBS ID	Description	Duration (s)	DataVal [bits]	DataRate (Mbit/s)	Step (s)	Raster (s)	SJT1335 (s)	SJT1400 (s)	SJT1795 (s)	SJT wing (s)
3600000001	Small sit-and-stare 0.3x30 1s	18.01	31.57	1.2	2.6+/-0.1	2.6+/-0.1	18.0+/-0.0	18.0+/-0.0	18.0+/-0.0	18.0+/-0.0

Reset Translate v38ID Get Description Accept

Default is non-simultaneous readout which is adequate for most science goals

If very high cadence is critical, select simultaneous readout. Note that this leads to electronic read-out noise which can be very problematic for FUV spectra (given the lower signal-to-noise)

# Other considerations

- **Roll**

- Slit can be rolled up to +/- 90 degrees (e.g. to align with the limb, or cross the AR neutral line)
- Rolls can be limited on certain days (twice per month), or can impact telemetry rate; work with planner to determine optimal roll
- Best to choose 0, +/-45 or +/-90 degree (for pointing stability)

- **Limb Observations**

- Generally best to have the slit on the disk for at least part of the observation
- Even better if the slit fiducial is on the disk
- Consider rolling so the slit is parallel or perpendicular to the limb
- Easiest co-alignment with GBO is through SJI 2832 (granulation), but also possible with 1400 or 2796

# Other considerations

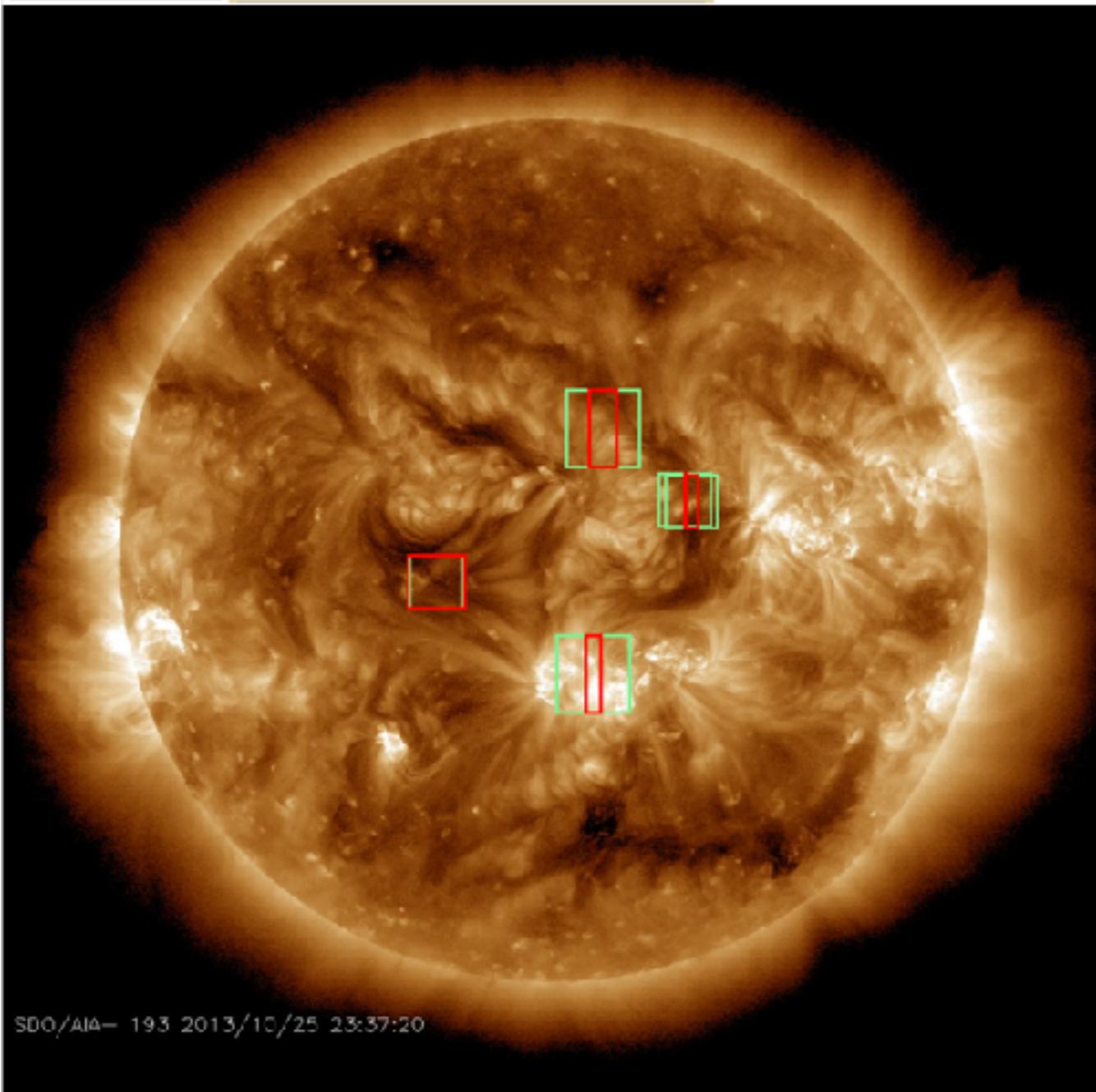
- **Solar rotation tracking**
  - Recommended for most observations, but can be left off for wide rasters, long runs, or limb observations
- **SAA**
  - Certain orbits are affected by particle storms (image spikes); if you're especially sensitive to these, request that the planner choose a time period to minimize SAA during your observation
- **AEC**
  - Automatic exposure control kicks in when there is a flare
  - Generally the planner will worry about this (setting up the AEC if there is any chance of a flare in the field), but let them know if you think it should be disabled (e.g. you are looking for faint features in an active region)

# Finding data: IRIS observing plans

<http://iris.lmsal.com/iristoday>

INTERFACE REGION IMAGING SPECTROGRAPH  
IRIS TODAY

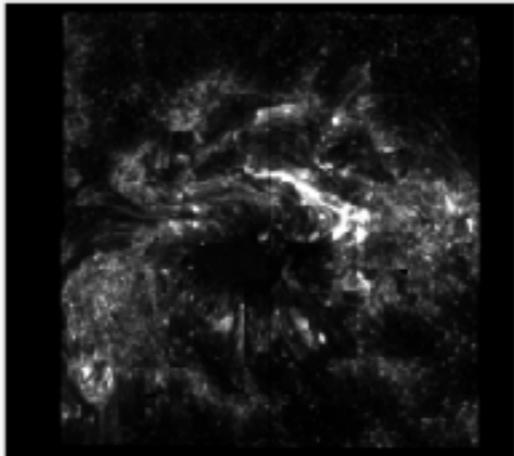
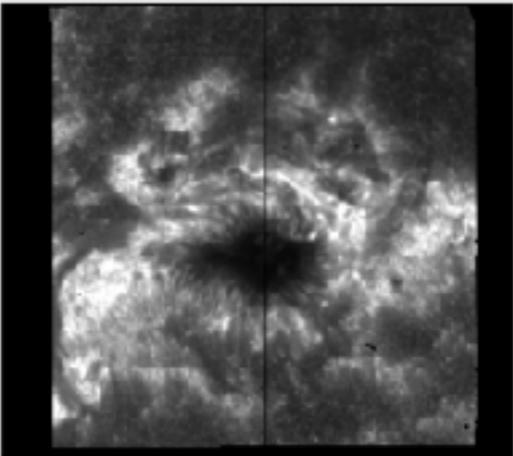
2013-10-25  2013-10-26



SDO/AIA— 193 2013/10/25 23:37:20

Full-frame sunspot spectrum

OBS 3880013447: Dense synoptic raster  
2013-10-25 05:05:30-05:56:51

<b>1400: 64s, 48 imgs</b> 	<b>2796: 64s, 47 imgs</b> 
<b>Where</b>	<b>Data Links</b>
x,y: 95°,-280° Max FOV: 199"x174" Target: AR	Not yet available
<b>Raster</b>	<b>SJI</b>
FOV: 33"x174" Steps: 96x0.35" Step Cad: 32.1s Raster Cad: 3,049s, 1 ras Linelist: v38_04	wave: cadence, # images  FOV: 166"x174"  1400: 64s, 48 imgs 2796: 64s, 47 imgs

# How is IRIS operated?

<http://iris.lmsal.com/operations.html>

**INTERFACE REGION IMAGING SPECTROGRAPH**

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**Current Operations**

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- [Planned Observations/Pointings](#)

**Future Operations**

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- [IRIS Planning Calendar](#)
- [IRIS Calibration/Synoptic Calendar](#)
- [IRIS Calibration-As-Run Calendar](#)

**Recent Observations**

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**Status**

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**Solar Conditions**

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- [Solar Monitor](#)
- [NOAA/SEC Solar Data](#)
- [LMSAL SSWIDL Recent Events](#)
- [LMSAL Solar Status and Links](#)

**Mail List**

Contact us if you would like daily planner e-mails with IRIS pointings/observing programs.

Lockheed Martin Solar and Astrophysics Laboratory | NASA IRIS Home Page | NASA Explorer | IRIS on Facebook



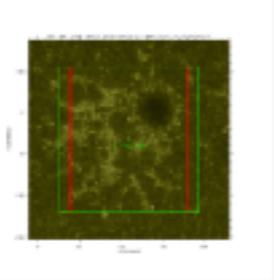
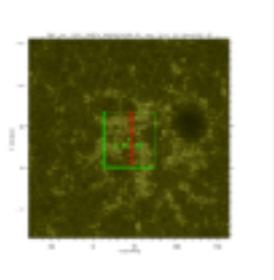
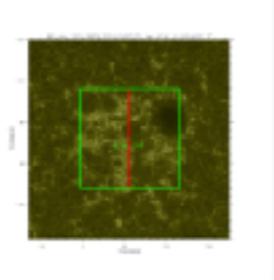
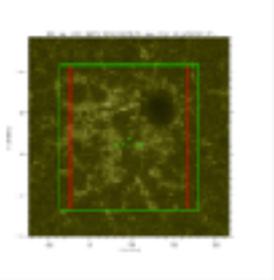
## Planned Observations

All IRIS planned observations (most recent first)

Filter by instrument:

10278 matches

[1] 2 3 4 5 6 7 8 9 10 ...686 next

Overview	Where	Raster	SJI
<p>2016-03-31 01:29:09-02:30:31</p> 	<p><a href="#">AR monitoring, 400-step raster, AR12526</a></p> <p>x,y: 110°,18'                      Max FOV: 140°x175°                      Target: AR  <a href="#">Nearby Events</a></p>	<p>OBS 3600108078: Very large dense 400-step raster</p>	
<p>2016-03-30 22:43:44-01:17:31 +1d</p> 	<p><a href="#">IHOP 243 on plage, AR12526</a></p> <p>x,y: 44°,35'                      Max FOV: 5°x62°                      Target: AR  <a href="#">Nearby Events</a></p>	<p>OBS 3655602035: Medium dense 16-step raster</p>	
<p>2016-03-30 21:29:24-22:31:59</p> 	<p><a href="#">explosive events study, AR 12526</a></p> <p>x,y: 56°,30'                      Max FOV: 0°x119°                      Target: AR  <a href="#">Nearby Events</a></p>	<p>OBS 3664101603: Large sit-and-stare</p>	
<p>2016-03-30 19:04:39-20:06:01</p> 	<p><a href="#">AR monitoring, 400-step raster, AR12526</a></p> <p>x,y: 47°,20'                      Max FOV: 140°x175°                      Target: AR  <a href="#">Nearby Events</a></p>	<p>OBS 3600108078: Very large dense 400-step raster</p>	

# Finding data: IRIS data search

<http://iris.lmsal.com/search>

INTERFACE REGION IMAGING SPECTROGRAPH  
IRIS DATA SEARCH

Help

<< < Start > >>
<< < End > >>

2013-10-06 11:00
2013-10-21 11:00

**Raster**

min FOV X max

FOV Y

Count

Cadence

**Raster Step**

Count

Size

Cadence

**Exposure Time**

Min Exp

Exp Time

**Spectral Lines**

min SJI max

FOV X

FOV Y

**Cadence**

1330

1400

2796

2832

**Target**

XGEN

YGEN

Radius

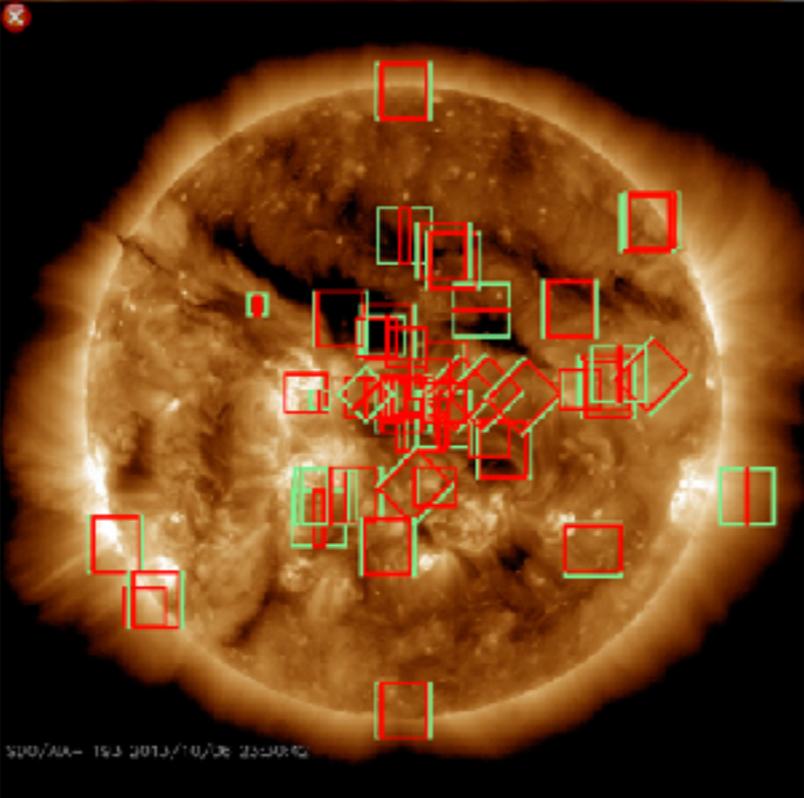
OBSID

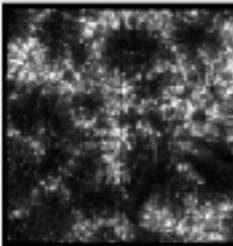
Target

Count: 56 Search Reset 193  Boxes

Only CBS with data

Time	Goal	OBS Desc.	X,Y	RX	RY	Raster Cad	Step Cad	Fast SJI	OBSID
2013-10-19 04:20-04:38	Throughput monitoring	Large coarse 84-step raster	43°,-61°	127°	119°	1082s	17s	1330: 58s	3882010144
2013-10-19 05:10-08:42	Prominence at E-limb	Very large dense raster	-875°,-442°	141°	174°	12674s	32s	1400: 54s	3820013446
2013-10-19 17:55-18:56	Context raster of AR11871	Very large dense raster	-46°,212°	141°	174°	3826s	9s	1400: 18s	3820009446
2013-10-19 22:40-23:31	Full-frame reference spectrum of AR	Dense synoptic raster	-266°,-360°	33°	174°	3048s	32s	1400: 54s	3880013447
2013-10-19 19:29-20:41	Moss of AR11871	Large sit-and-stare	-55°,206°	0°	119°	5s	5s	1400: 11s	3820007403
2013-10-17 04:20-04:38	Throughput monitoring	Large coarse 84-step raster	0°,-2°	127°	119°	1082s	17s	1330: 58s	3882010144
2013-10-17 18:40-19:31	Full-frame spectra of quiet Sun	Dense synoptic raster	127°,-64°	33°	174°	3048s	32s	1400: 54s	3880013447
2013-10-17 20:20-21:11	Full-frame spectra of coronal hole	Dense synoptic raster	4°,50°	33°	174°	2757s	32s	1400: 54s	3880013447
2013-10-18 04:20-04:38	Throughput monitoring	Large coarse 84-step raster	72°,-64°	127°	119°	1082s	17s	1330: 58s	3882010144
2013-10-17 07:16-10:47	Context raster of AR 11856	Very large dense raster	676°,-464°	141°	174°	12674s	32s	1400: 54s	3820013446



Overview	Where	Raster	SJI wavelength; cadence, no. of images	Data Links
<p>2013-10-19 19:29:30-20:41:17</p> 	<p><a href="#">Moss of AR11871</a></p> <p>x,y: -55°,206°</p> <p>Max FOV: 118°x119°</p> <p>Target: AR</p>	<p>OBS 3820007403: Large sit-and-stare</p> <p>FOV: 0°x119°</p> <p>Steps: 800x0°</p> <p>Step Cad: 5.4s</p> <p>Raster Cad: 5s, 1 ras</p> <p>Linelist: v38_01</p>	<p>FOV: 118°x119°</p> <p>1400: 11s, 391 imgs</p> <p>2796: 11s, 394 imgs</p>	<p><a href="#">Raster</a> 1430 MB</p> <p><a href="#">1400</a> 258 MB</p> <p><a href="#">2796</a> 252 MB</p>

# Conclusions

- IRIS can provide powerful insight on a wide range of science questions
- Maximizing its utility for your observation requires:
  - Thinking about exactly what you want to measure
  - Weighing relative importance of various observable parameters
  - Working with the planner to design the observation and choose the target
- IRIS team looks forward to working with you!
- Check out IRIS Technical Note 50 for more details:
  - [https://www.lmsal.com/iris\\_science/doc?cmd=dcur&proj\\_num=IS0301&file\\_type=pdf](https://www.lmsal.com/iris_science/doc?cmd=dcur&proj_num=IS0301&file_type=pdf)
- IRIS data available at: <http://iris.lmsal.com/search>
- Documentation available at: <http://iris.lmsal.com/documents.html>