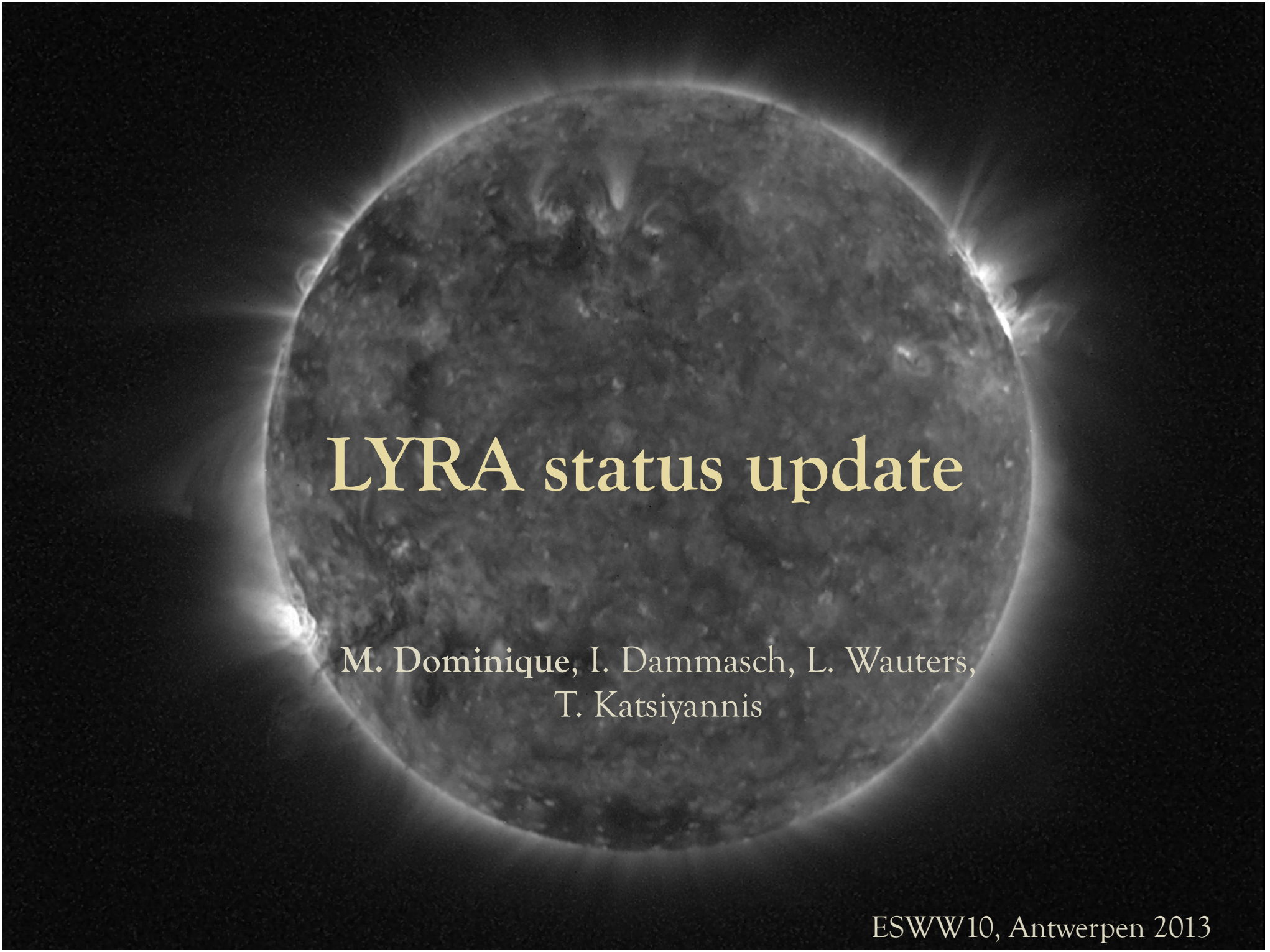
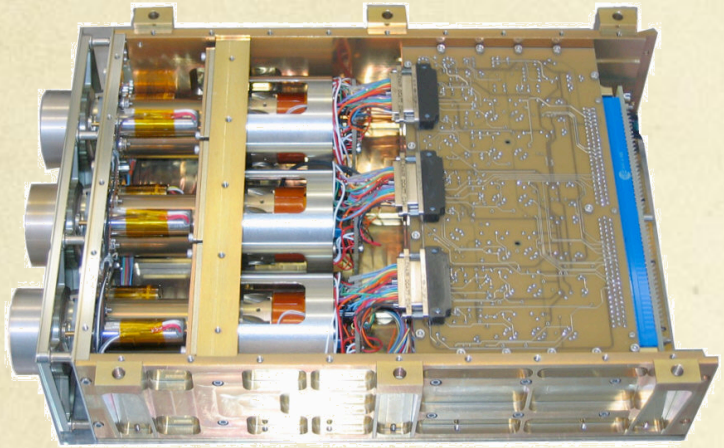


LYRA status update

M. Dominique, I. Dammasch, L. Wauters,
T. Katsiyannis

ESWW10, Antwerpen 2013

LYRA highlights



LYRA channels	
Lyman alpha	120-123 nm
Herzberg	190-222 nm
Aluminium	17-80 nm + <5nm
Zirconium	6-20 nm + <2nm

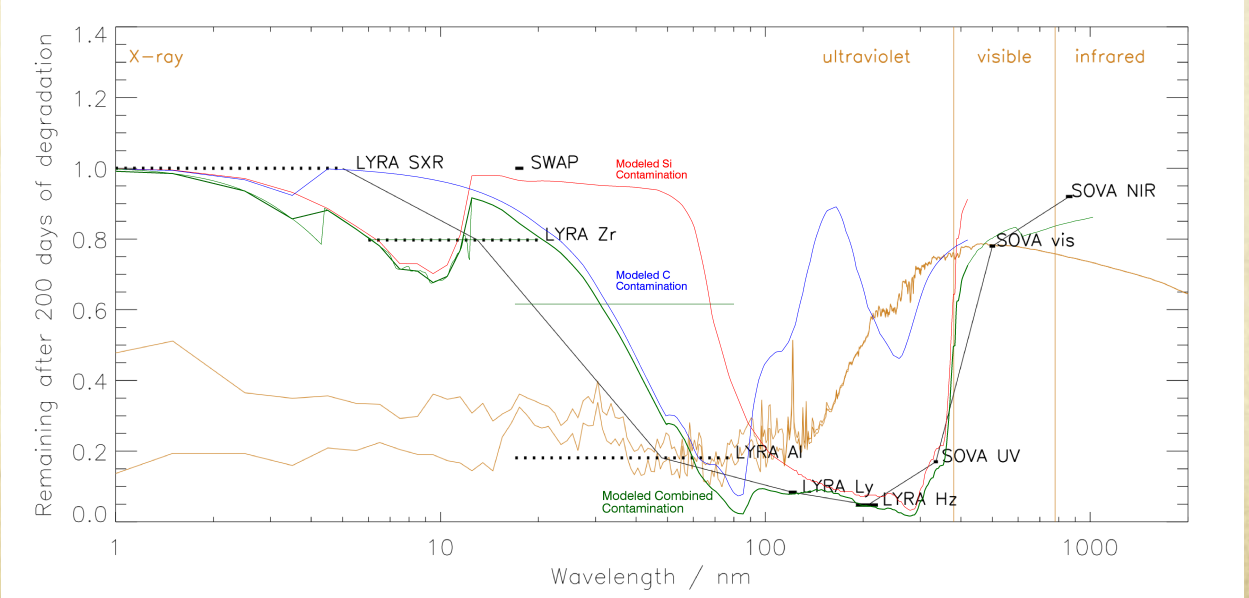
- **3 redundant units** protected by independent covers
- **4 broad-band channels**
- High acquisition cadence: **nominally 20Hz**
- 3 types of detectors:
  - Standard silicon
  - 2 types of **diamond detectors**: MSM and PIN
    - radiation resistant
    - blind to radiation > 300nm
- **Calibration LEDs** with λ of 370 and 465 nm

In brief …

- Mission currently founded till end 2014, funded by ESA science directorate and SSA
- PROBA2 website: http://proba2.oma.be
- The PROBA2 topical issue was released in August 2013
- A STCE workshop on degradation and inter-calibration was held at the Royal Observatory of Brussels from 15->18/04/2013
- Fourth Guest Investigator Programme on-going:
  - Vida Žigman (University of Nova Gorica, Slovenia) is presently at the Observatory to work on ionization enhancements of the lower ionosphere induced by flares
- New collaborators: L. Wauters, T. Katsiyannis, D. Ryan (from mid-January 2014)

Degradation correction

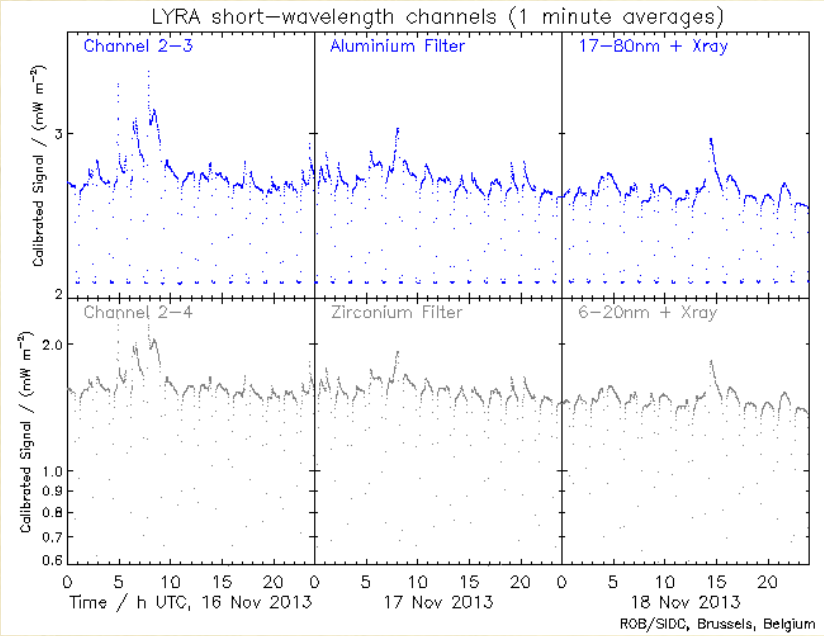
- Spectral degradation due to a contaminant layer. Two identified candidates, both in the front door mechanism:
  - Silicone RTV566
  - EpoxyAV138 / HV 998
- **We are getting closer from a fully spectral correction of degradation**



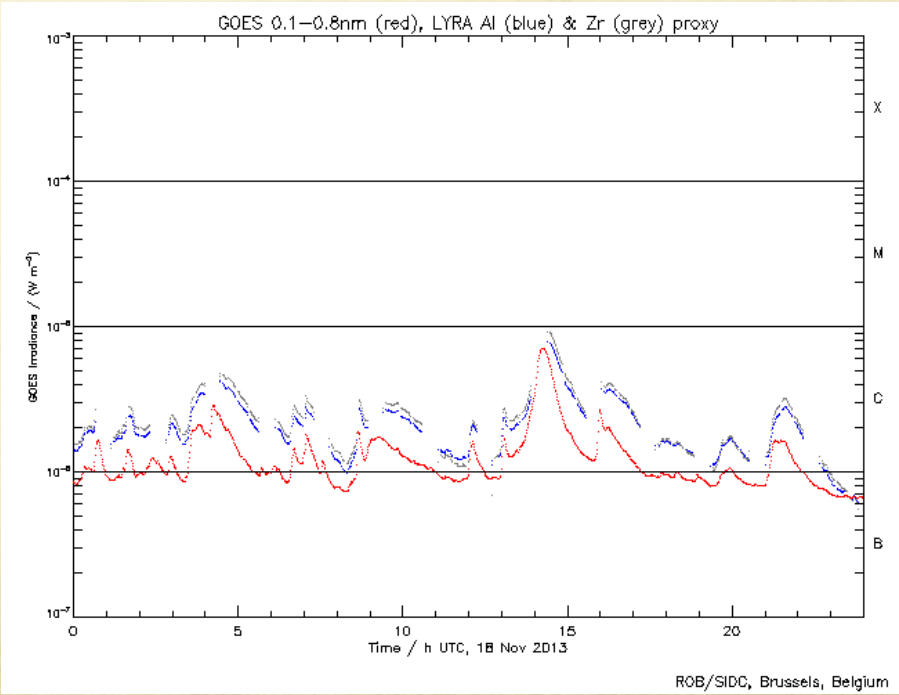
2-component Si-C model
(Si thickness = 13.33e-9,
C thickness = 12.62e-9)

I.E. Dammasch + A. Jones

What's new about the data

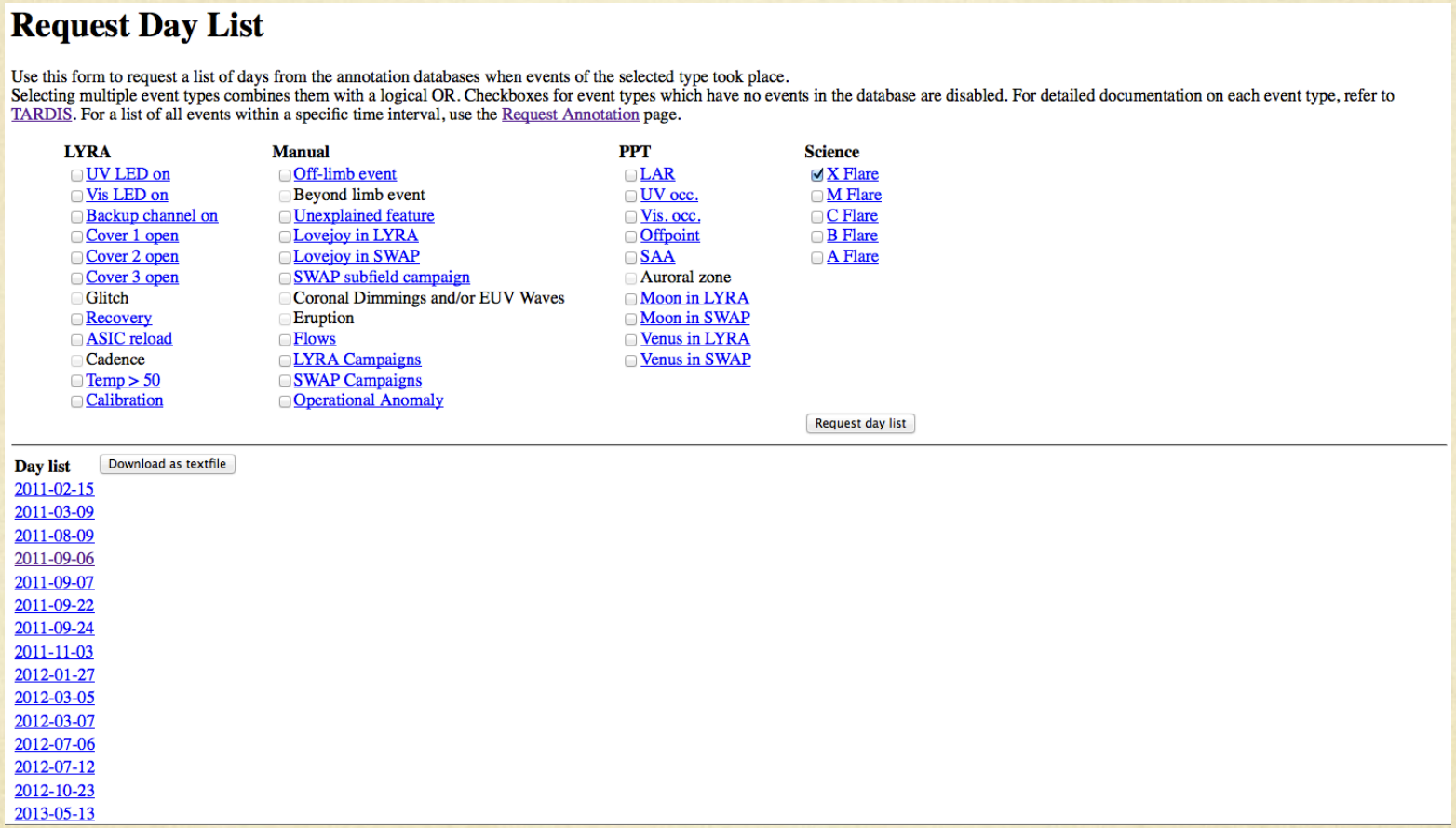


LYRA data exhibit "comb-like" patterns due to the atmospheric absorption during the occultation season ...



... pattern which is now removed in some of our quicklooks.

LYTAF: A new tool for detecting any unusual event in LYRA data



Request Day List

Use this form to request a list of days from the annotation databases when events of the selected type took place.
Selecting multiple event types combines them with a logical OR. Checkboxes for event types which have no events in the database are disabled. For detailed documentation on each event type, refer to TARDIS. For a list of all events within a specific time interval, use the Request Annotation page.

LYRA	Manual	PPT	Science
☐ UV LED on	☐ Off-limb event	☐ LAR	☑ X Flare
☐ Vis LED on	☐ Beyond limb event	☐ UV occ.	☐ M Flare
☐ Backup channel on	☐ Unexplained feature	☐ Vis. occ.	☐ C Flare
☐ Cover 1 open	☐ Lovejoy in LYRA	☐ Offpoint	☐ B Flare
☐ Cover 2 open	☐ Lovejoy in SWAP	☐ SAA	☐ A Flare
☐ Cover 3 open	☐ SWAP subfield campaign	☐ Auroral zone	
☐ Glitch	☐ Coronal Dimmings and/or EUV Waves	☐ Moon in LYRA	
☐ Recovery	☐ Eruption	☐ Moon in SWAP	
☐ ASIC reload	☐ Flows	☐ Venus in LYRA	
☐ Cadence	☐ LYRA Campaigns	☐ Venus in SWAP	
☐ Temp > 50	☐ SWAP Campaigns		
☐ Calibration	☐ Operational Anomaly		

Request day list

Day list Download as textfile

2011-02-15
2011-03-09
2011-08-09
2011-09-06
2011-09-07
2011-09-22
2011-09-24
2011-11-03
2012-01-27
2012-03-05
2012-03-07
2012-07-06
2012-07-12
2012-10-23
2013-05-13

http://proba2.oma.be/lyra/data/lytaf/requestDay.php

LYTAF: A new tool for detecting any unusual event in LYRA data

Request Annotation

Use this form to request a list of events from the annotation databases between the *Begin Time* and *End Time*. The maximum time interval that can be specified is one Carrington rotation (27 days). For detailed documentation on each event type, refer to TARDIS. For a list of all days with a specific event type, use the Request Day List page.

Begin Time: 2013-11-20T00:00:00Z
End Time: 2013-11-20T23:59:59Z Request annotation

Download as textfile

Event Type	Begin time	Reference time	End time
Cover 2 open	2013-11-06T09:49:47Z	2013-11-13T09:24:57Z	2013-11-20T09:00:07Z
LAR	2013-11-20T00:17:56Z	2013-11-20T00:18:26Z	2013-11-20T00:20:56Z
UV occ.	2013-11-20T00:38:19Z	2013-11-20T00:51:52Z	2013-11-20T01:05:26Z
LAR	2013-11-20T00:44:46Z	2013-11-20T00:45:16Z	2013-11-20T00:47:46Z
Vis. occ.	2013-11-20T00:44:48Z	2013-11-20T00:51:55Z	2013-11-20T00:59:03Z
LAR	2013-11-20T01:07:23Z	2013-11-20T01:07:53Z	2013-11-20T01:10:23Z
LAR	2013-11-20T01:34:22Z	2013-11-20T01:34:52Z	2013-11-20T01:37:22Z
LAR	2013-11-20T01:57:07Z	2013-11-20T01:57:37Z	2013-11-20T02:00:07Z
UV occ.	2013-11-20T02:17:31Z	2013-11-20T02:31:04Z	2013-11-20T02:44:38Z
LAR	2013-11-20T02:23:58Z	2013-11-20T02:24:28Z	2013-11-20T02:26:58Z
Vis. occ.	2013-11-20T02:23:59Z	2013-11-20T02:31:07Z	2013-11-20T02:38:15Z
LAR	2013-11-20T02:46:35Z	2013-11-20T02:47:05Z	2013-11-20T02:49:35Z
LAR	2013-11-20T03:13:34Z	2013-11-20T03:14:04Z	2013-11-20T03:16:34Z
LAR	2013-11-20T03:36:19Z	2013-11-20T03:36:49Z	2013-11-20T03:39:19Z
UV occ.	2013-11-20T03:56:42Z	2013-11-20T04:10:16Z	2013-11-20T04:23:51Z
LAR	2013-11-20T04:03:10Z	2013-11-20T04:03:40Z	2013-11-20T04:06:10Z
Vis. occ.	2013-11-20T04:03:10Z	2013-11-20T04:10:19Z	2013-11-20T04:17:28Z
LAR	2013-11-20T04:25:46Z	2013-11-20T04:26:16Z	2013-11-20T04:28:46Z
LAR	2013-11-20T04:52:46Z	2013-11-20T04:53:16Z	2013-11-20T04:55:46Z
LAR	2013-11-20T05:15:30Z	2013-11-20T05:16:00Z	2013-11-20T05:18:30Z
C Flare	2013-11-20T05:24:00Z	2013-11-20T05:36:00Z	2013-11-20T06:11:00Z
UV occ.	2013-11-20T05:35:54Z	2013-11-20T05:49:28Z	2013-11-20T06:03:03Z
LAR	2013-11-20T05:42:21Z	2013-11-20T05:42:51Z	2013-11-20T05:45:21Z
Vis. occ.	2013-11-20T05:42:21Z	2013-11-20T05:49:30Z	2013-11-20T05:56:40Z
LAR	2013-11-20T06:04:58Z	2013-11-20T06:05:28Z	2013-11-20T06:07:58Z
LAR	2013-11-20T06:31:57Z	2013-11-20T06:32:27Z	2013-11-20T06:34:57Z
SAA	2013-11-20T06:48:18Z	2013-11-20T06:54:30Z	2013-11-20T07:00:43Z
LAR	2013-11-20T06:54:42Z	2013-11-20T06:55:12Z	2013-11-20T06:57:42Z
Backup channel on	2013-11-20T06:59:37Z	2013-11-20T07:28:37Z	2013-11-20T07:57:37Z

http://proba2.oma.be/lyra/data/lytaf/requestAnnotation.php

Recent campaigns

- Daily observation with the backup unit 3
- During the occultation season:
  - Daily occultation measurements with unit 3
  - Weekly campaign synchronized with SWAP
  - Common campaign with PREMOS (28/01/2013)
- Eclipses (13-14/11/2012, 10/05/2013, 03/11/2013)
- Several flare campaigns
- Cross-calibration campaign with SDO/EVE on Oct 21 during their last calibration rocket flight

Collaborations

THANK YOU!