Western Oceanus Procellarum as seen by C1XS on Chandrayaan-1

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Outline

- Instrument
- Technique
- Previous / future missions
- Solar modelling
- Flux data
- Modelling
- Abundance data
- Future work

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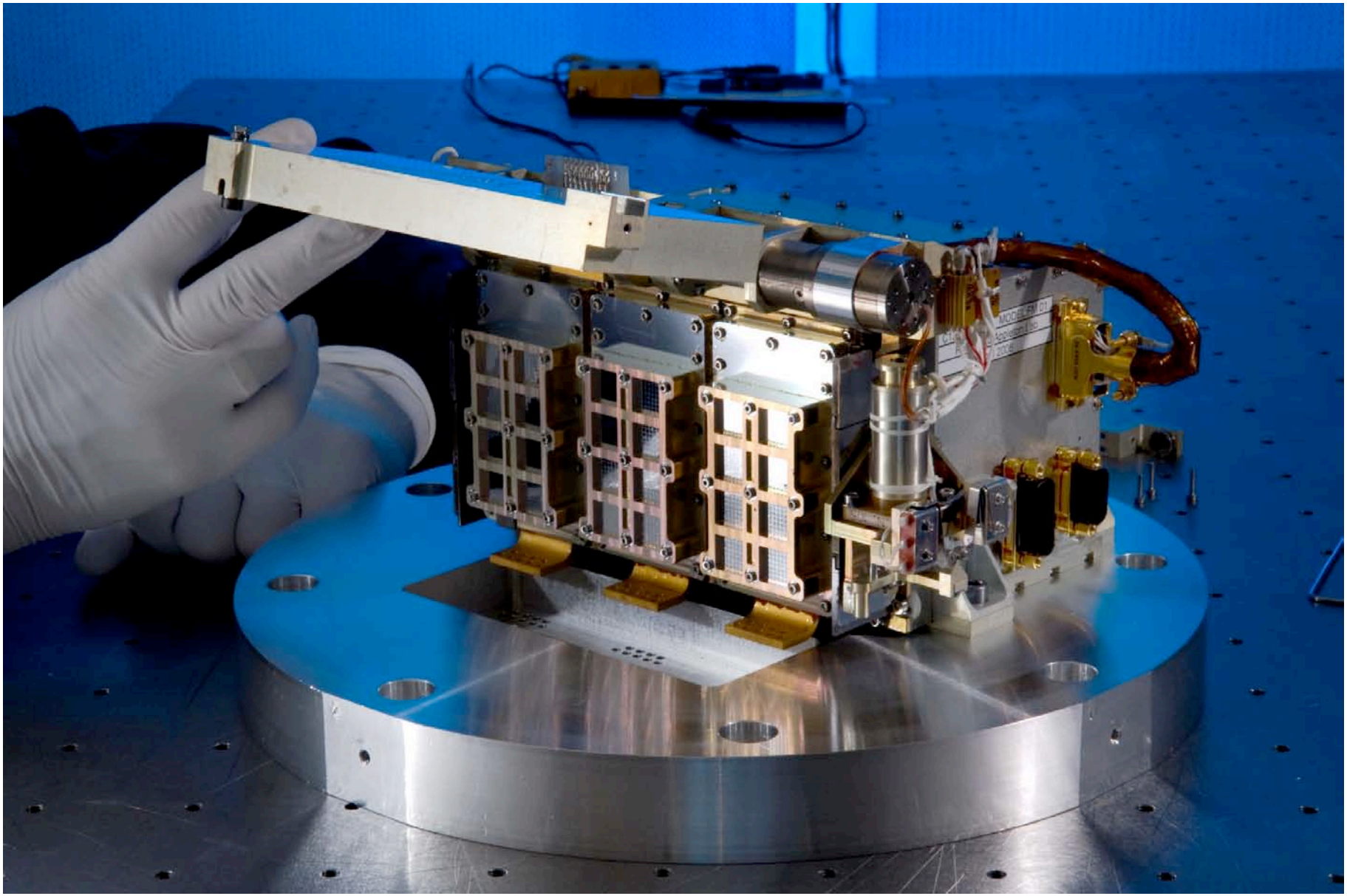
C1XS



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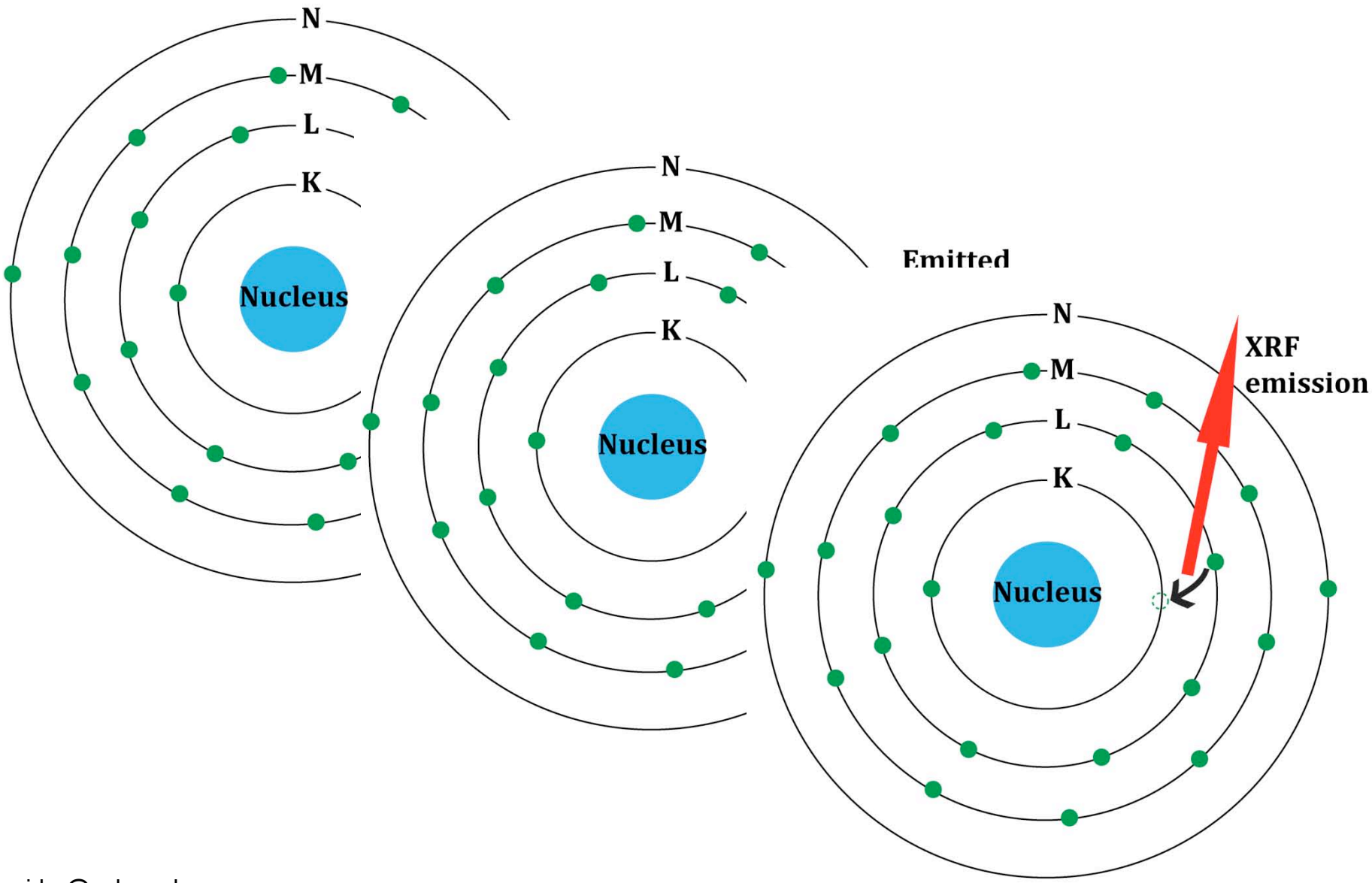
X-ray Fluorescence (XRF)



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Planetary XRF

Moon:

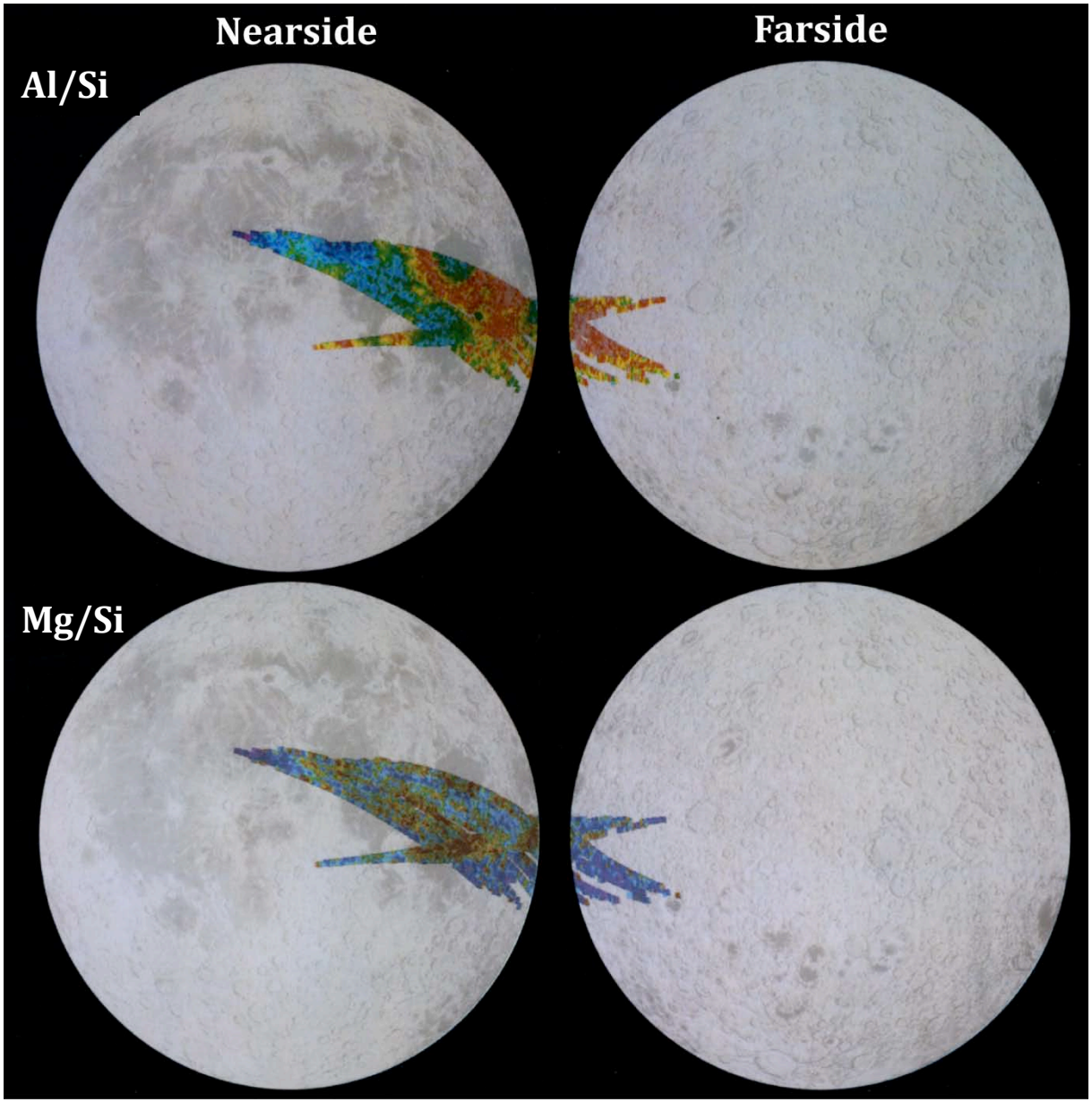
- Apollo 15 & 16
- D-CIXS (SMART-1)
- Kaguya
- Change'1
- C1XS

Mercury:

- MESSENGER
- BepiColombo

Asteroids:

- NEAR
- Hayabusa



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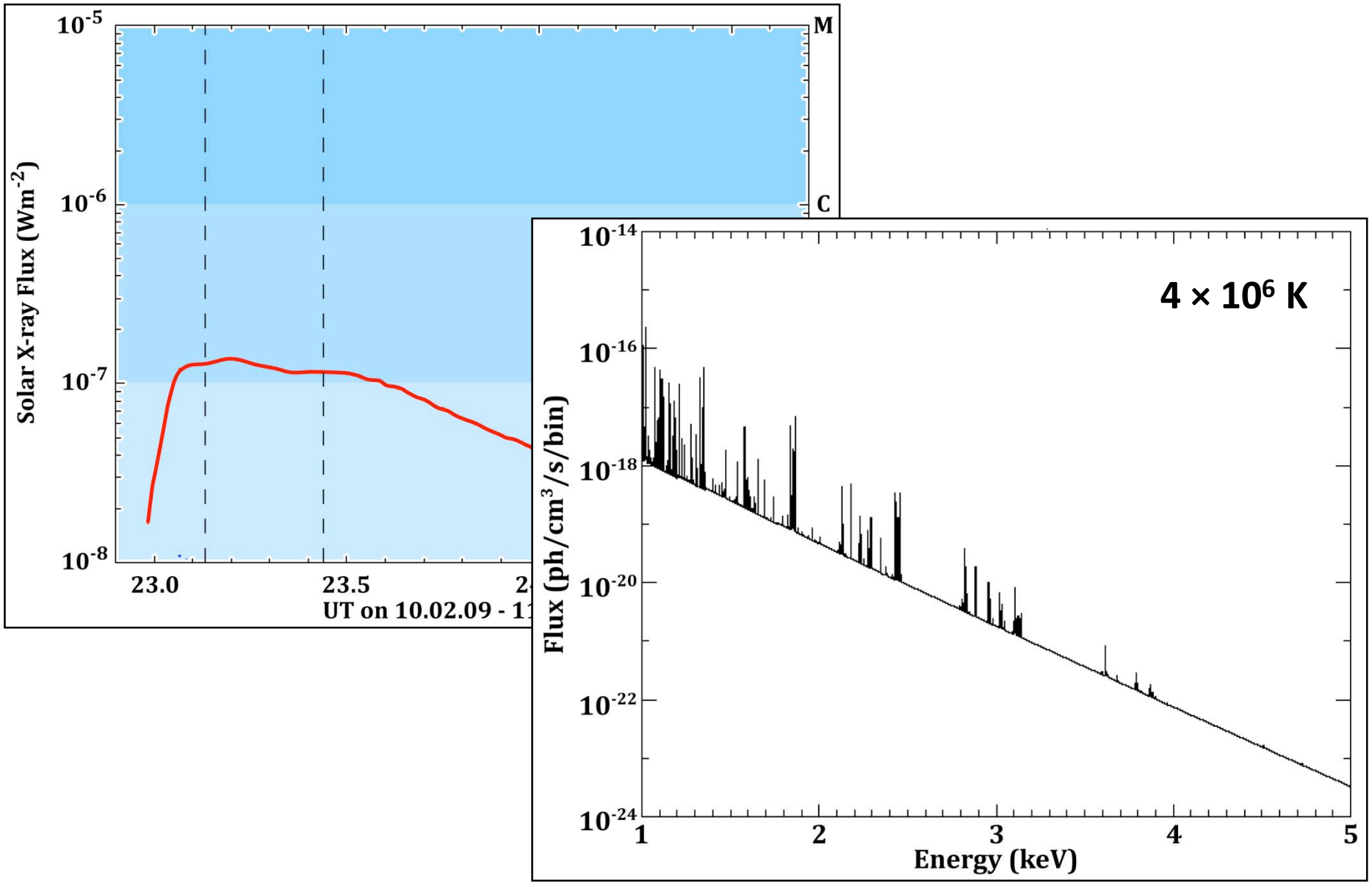
Solar Input



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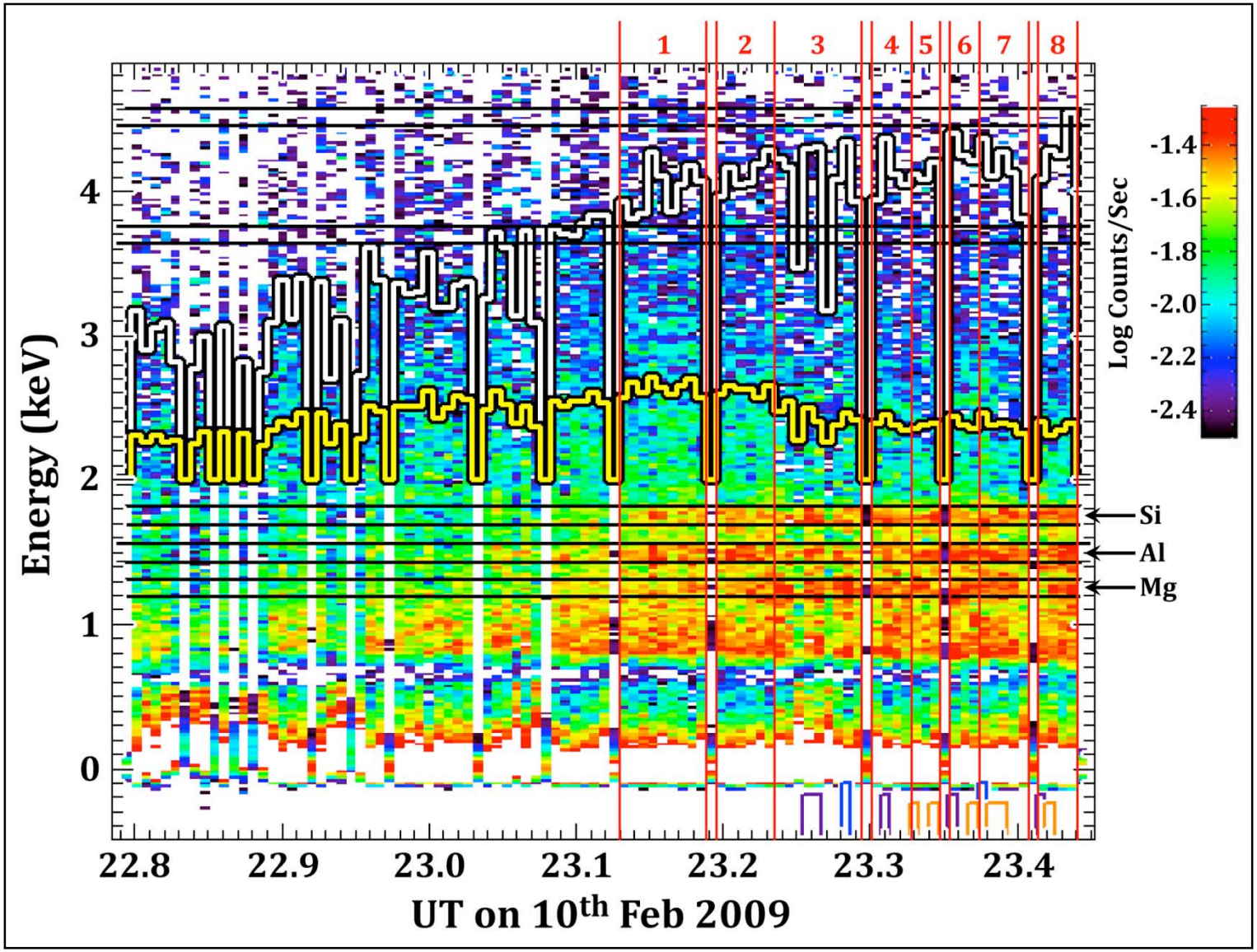
Data



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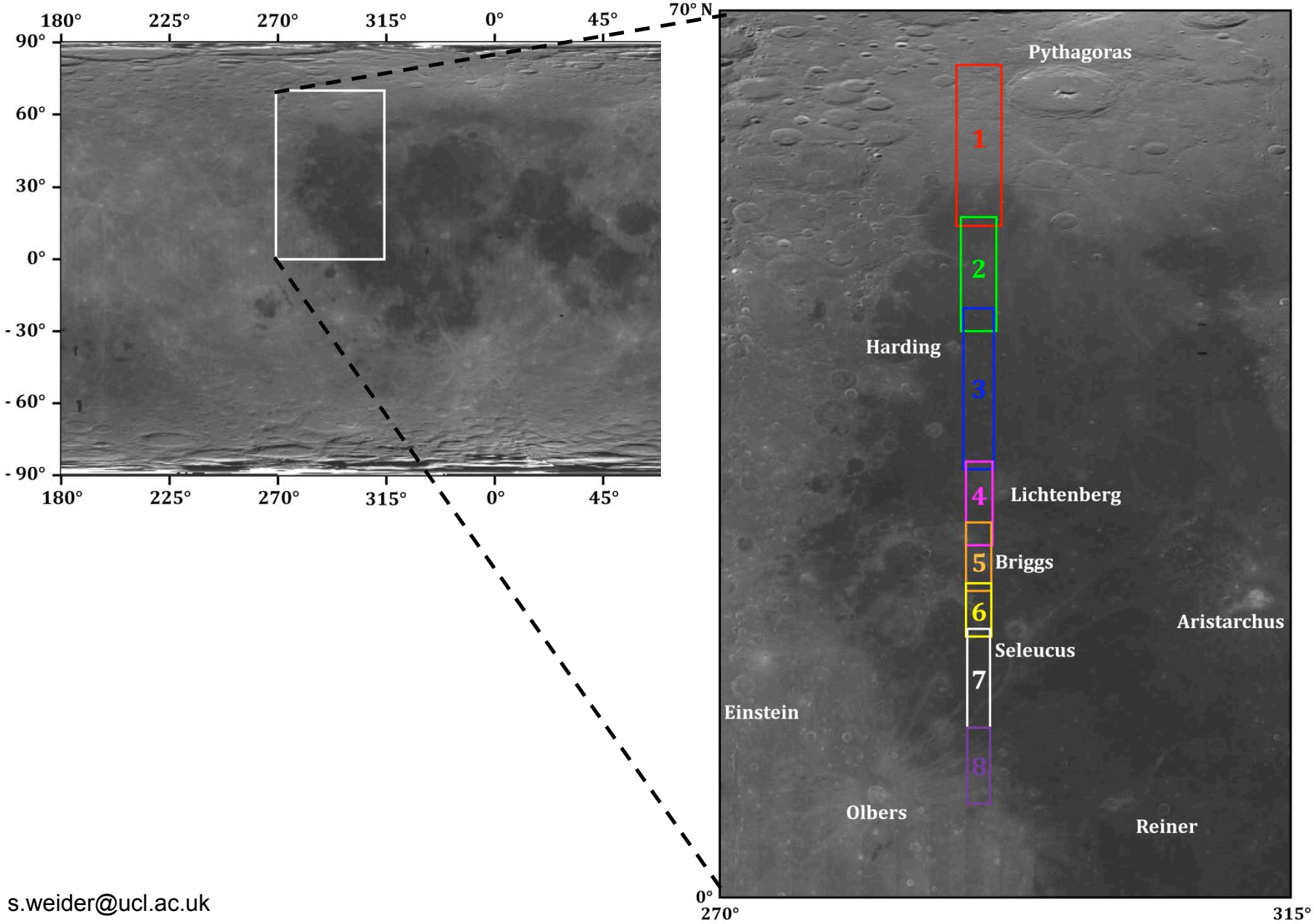
Flare Footprint



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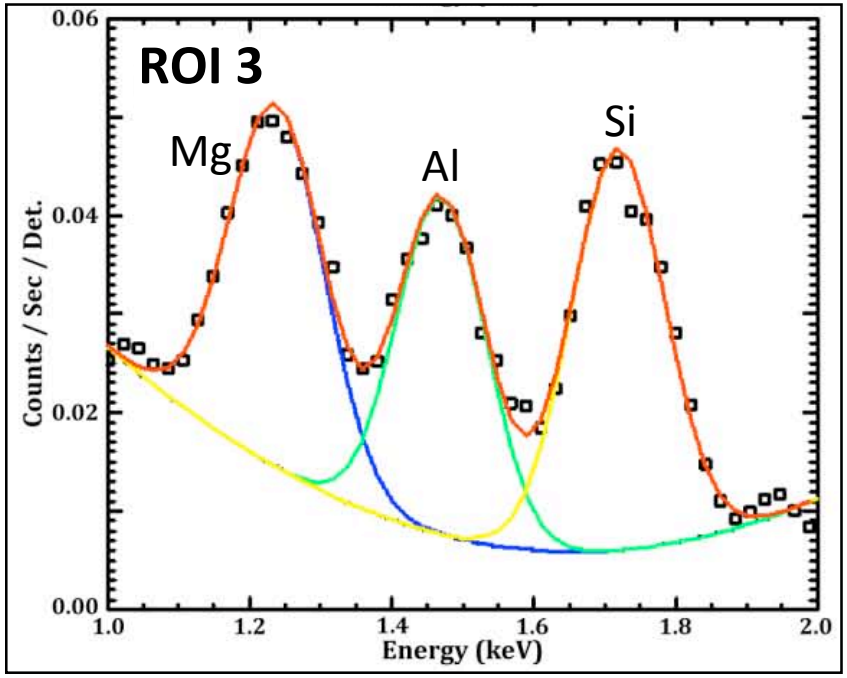
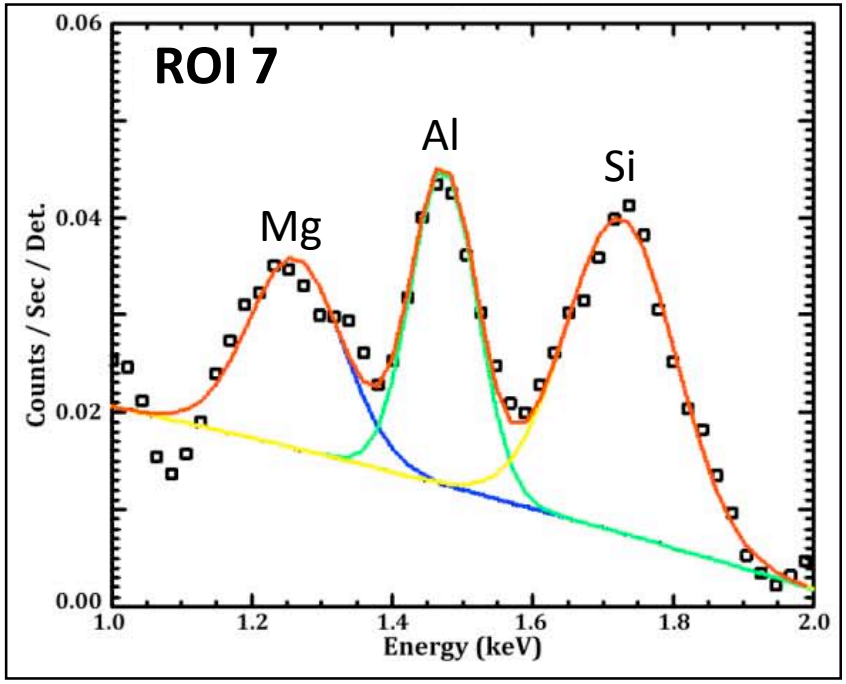
Example spectra





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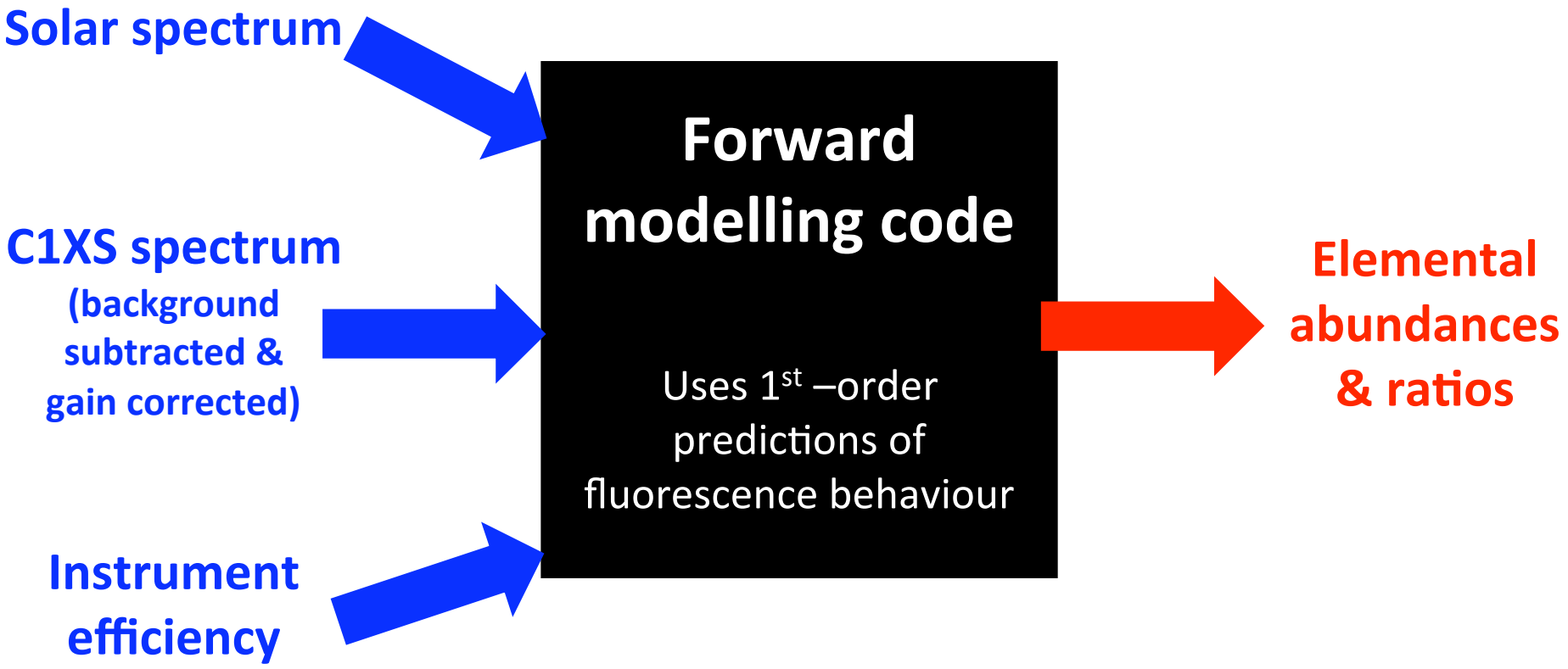
Modelling algorithm



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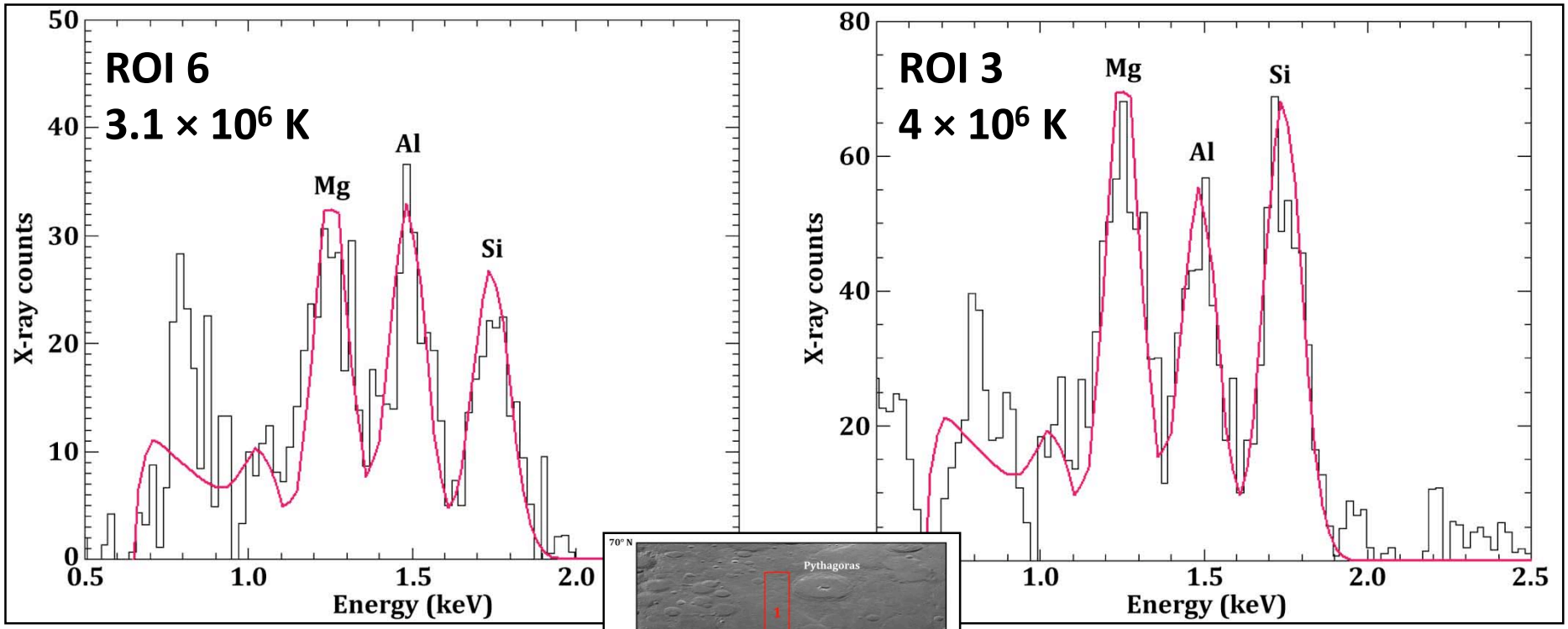
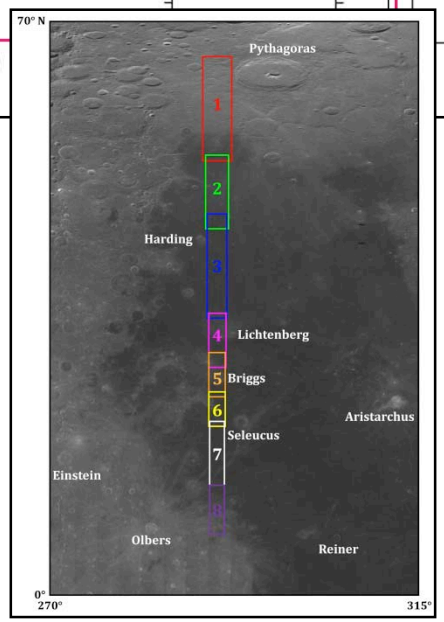
Fitted spectra





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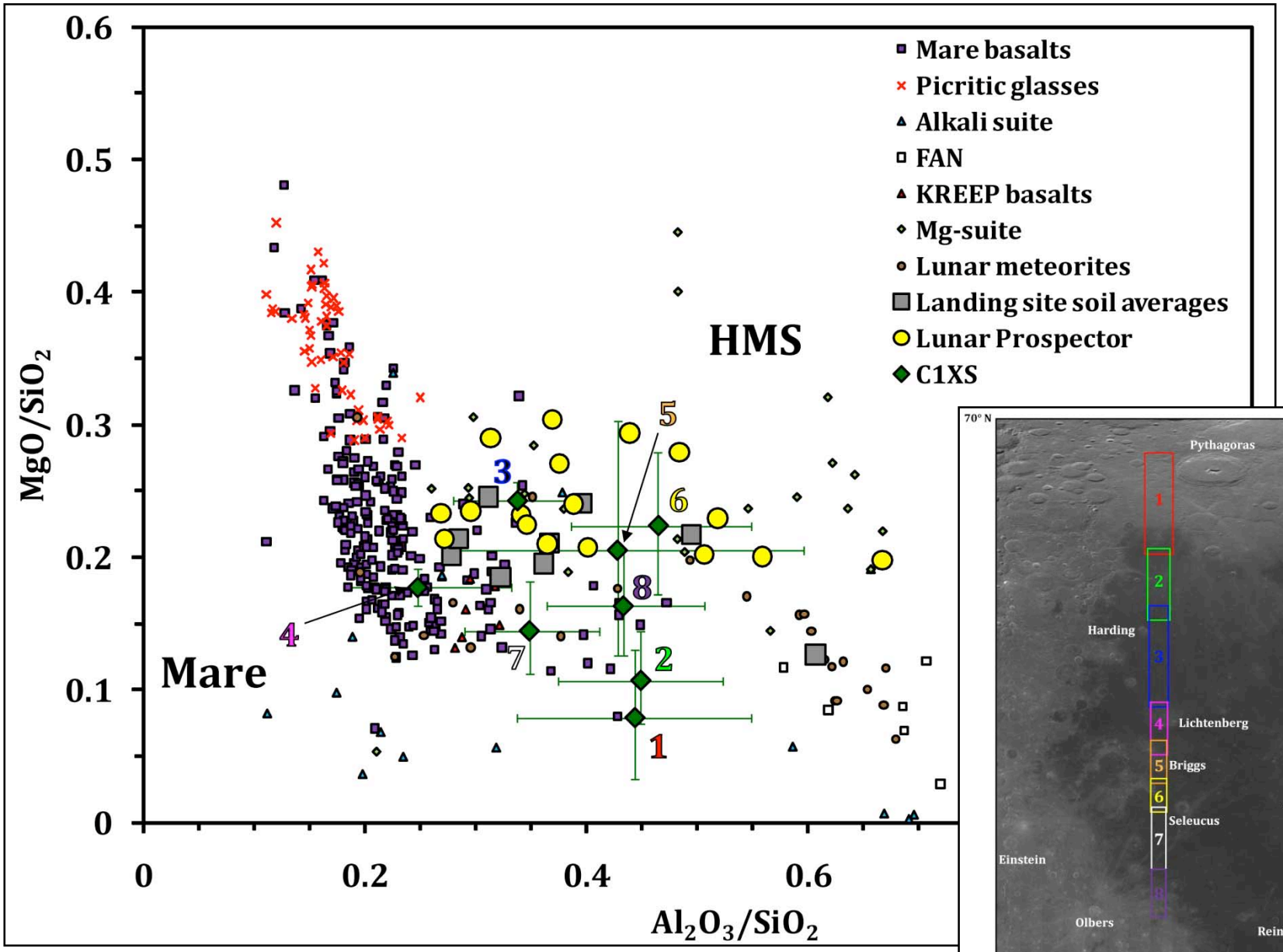
Results



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Future work

- Need to finalise the optimum modelling parameters, investigate effect of varying:
    1. X-ray background that is subtracted from the C1XS spectra
    2. Flare temperature and the resulting modelled solar spectrum
    3. Fixed Si abundance
- More in depth comparison with existing datasets
- Investigate how compositional data obtained by different remote sensing techniques with different sampling depths will vary.

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