

X-ray Observations of Recurrent Nova U Sco 2010 with Suzaku

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Recurrent Nova U Sco 2010

- U Scorpii

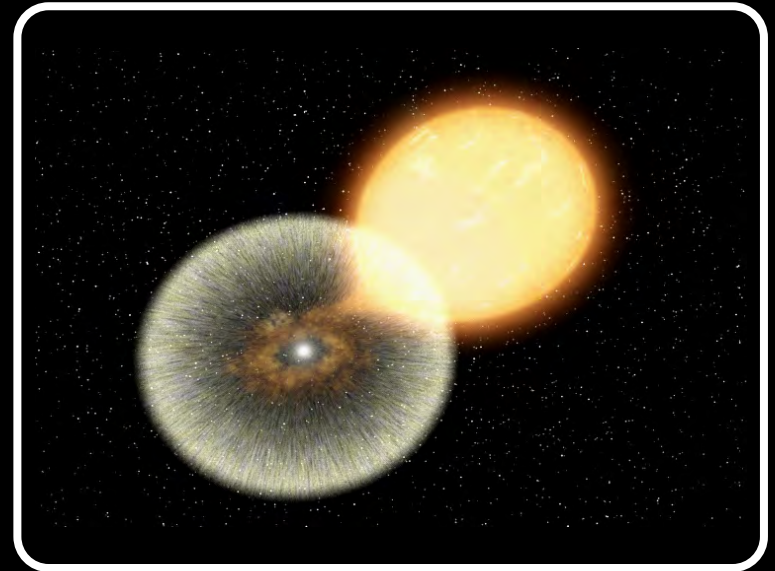
- Eclipsing binary (WD+LT)
- Inclination : ~ 80 deg
- Orbital period : 1.23 days

- Nova outburst 2010

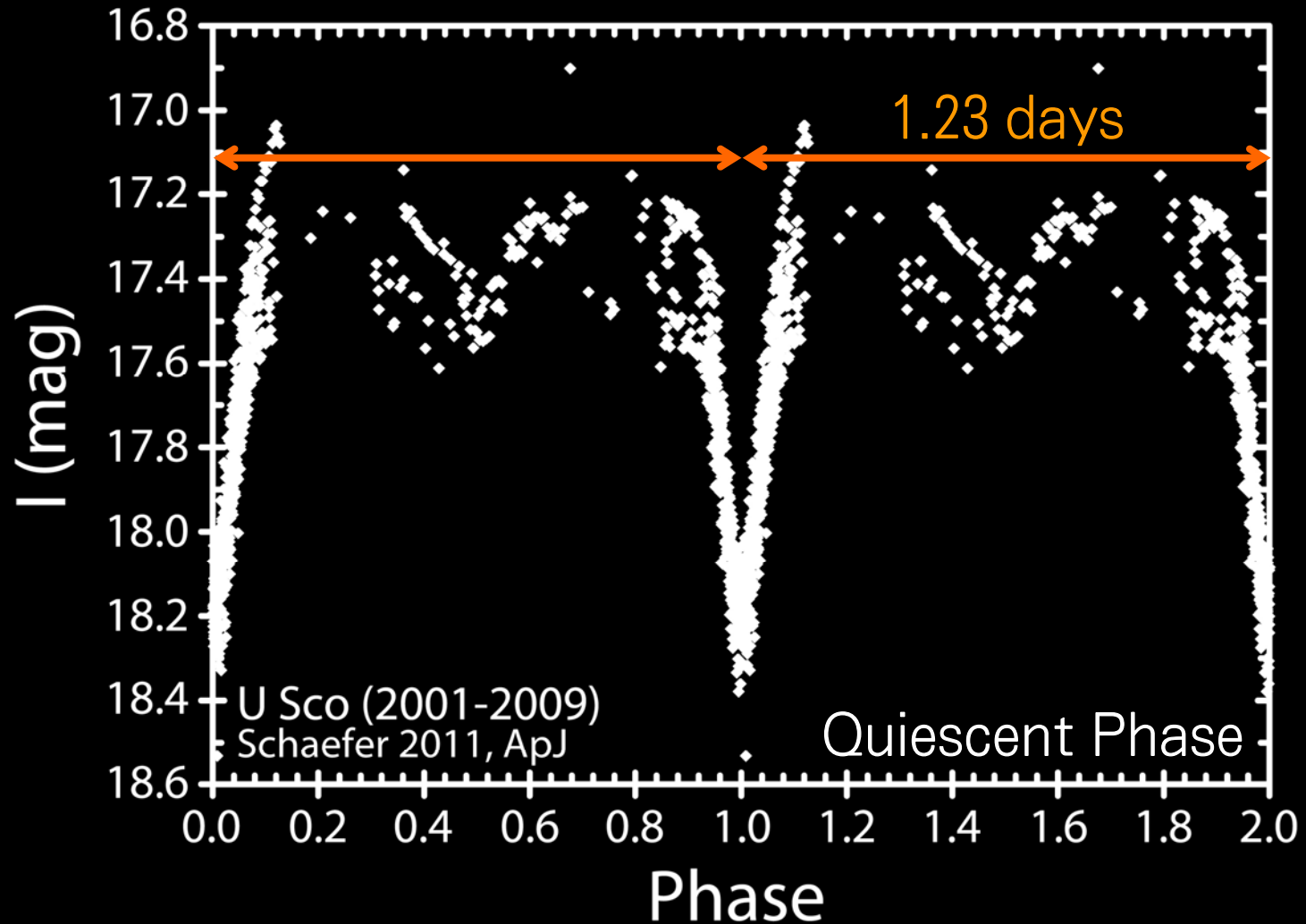
- Once in about a decade
- $V_{\text{ejecta}} : \sim 10000$ km/s

- X-rays from Novae

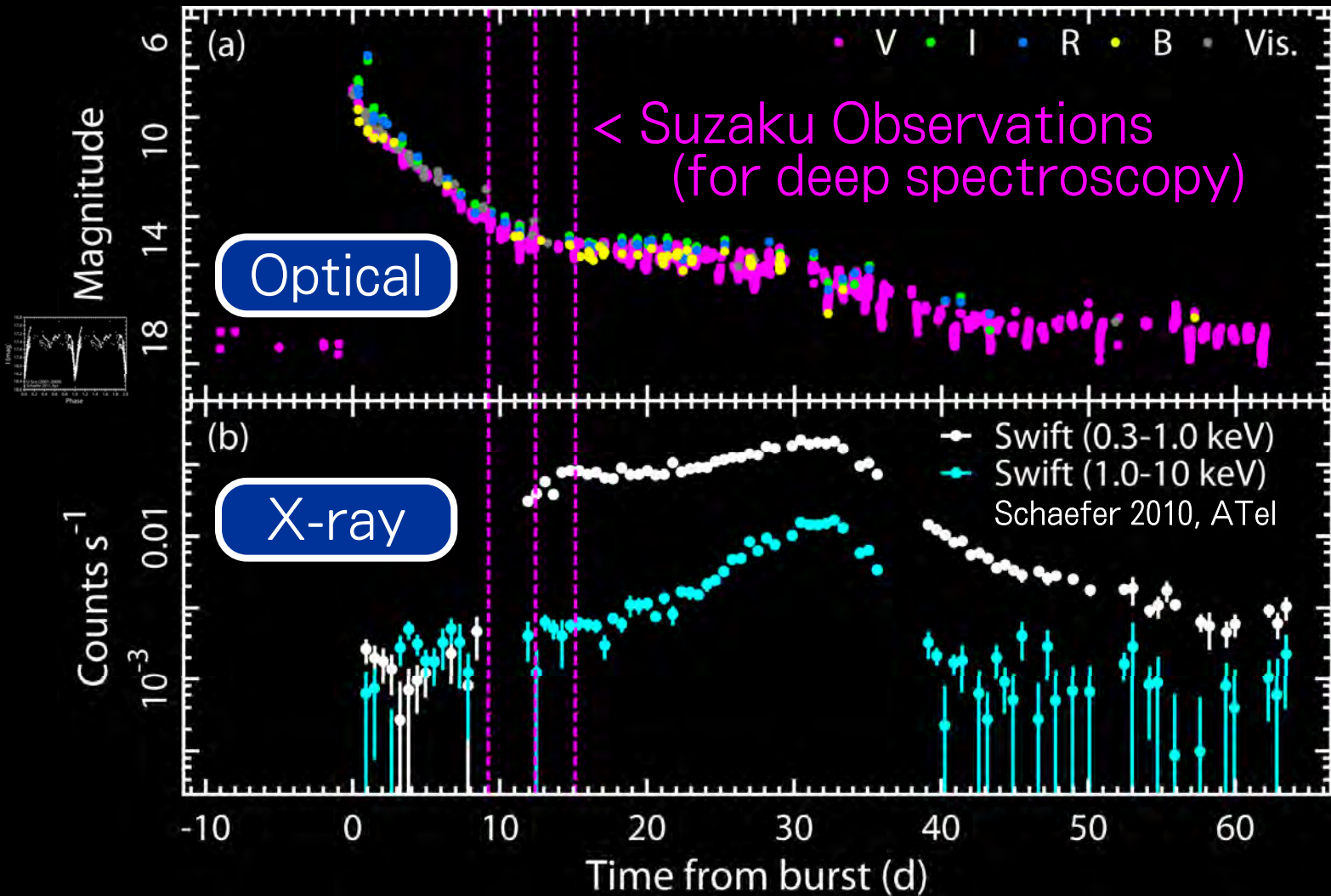
- Soft X-rays (< 1 keV) from photosphere (a.k.a. SSS)
- Novae from known binary systems are quite rare
- Let's study the geometry of X-ray emitting regions !



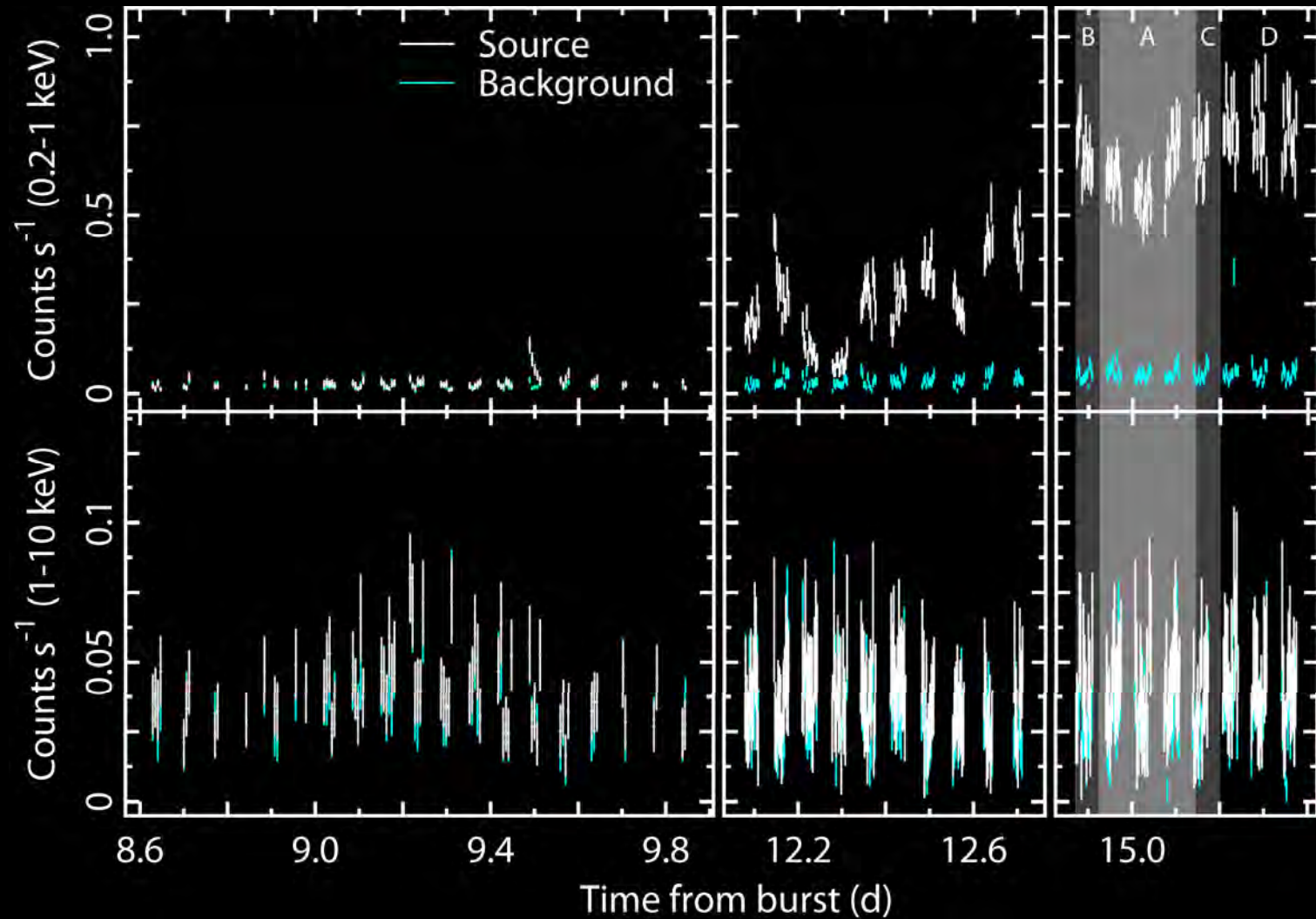
Light Curves of U Sco



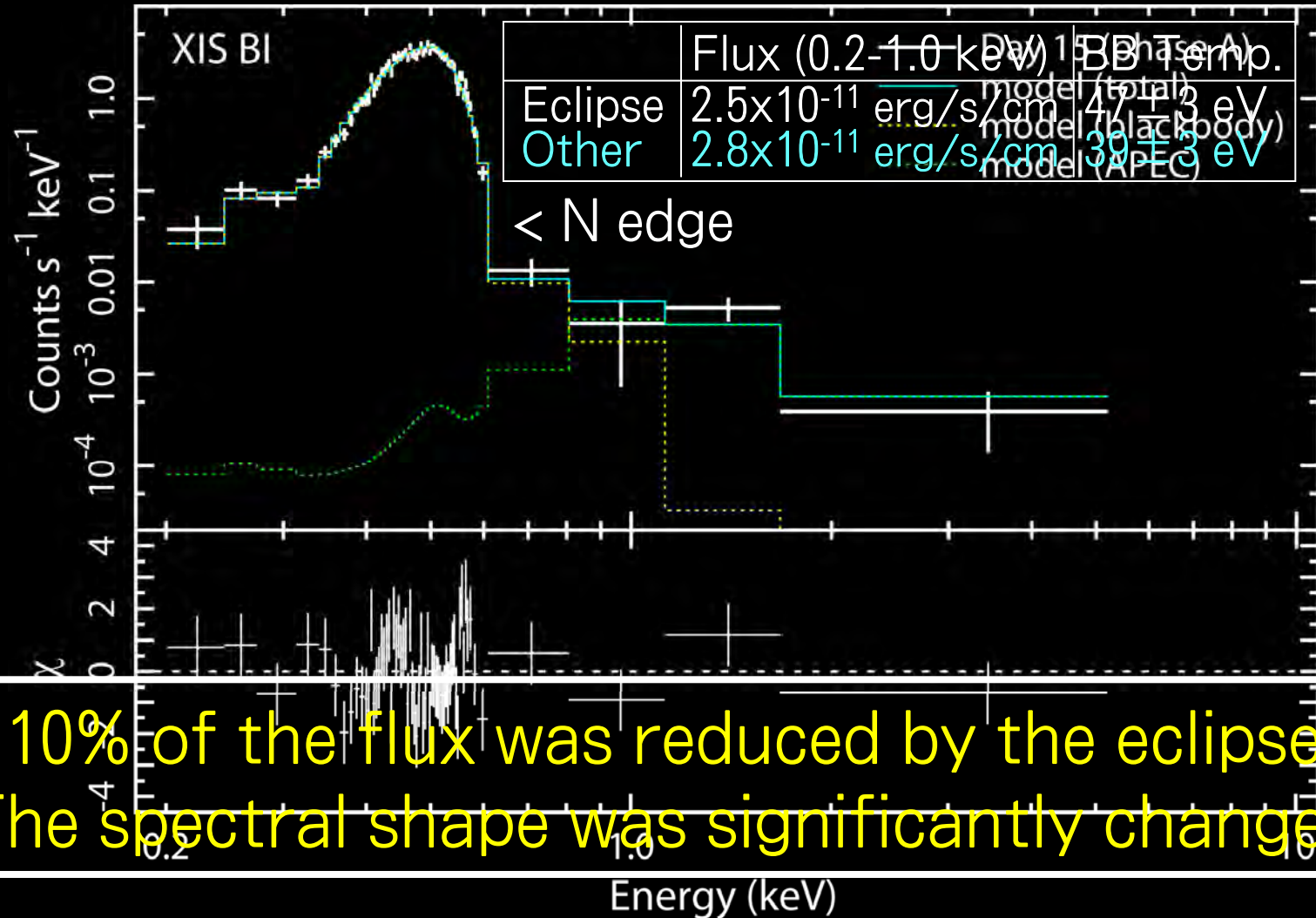
Light Curves of U Sco



Light Curves with Suzaku

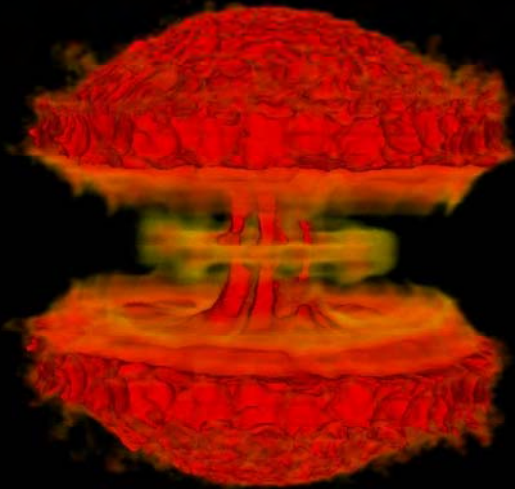


X-ray Spectra with Suzaku



Discussion

- The eclipse affected 10% of the X-ray flux
 - The emitting region was still large on day 15
- The eclipse affected the spectral shape
 - Photospheric plasma was inhomogeneous



Simulation of U Sco 2010
Drake & Orlando 2010, ApJL

Summary

1. Suzaku successfully observed U Sco 2010
2. 10% of the emitting region was occulted
3. X-ray spectra were affected by the eclipse

Please let me know if you are interested
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