

Cassini/VIMS observations of the infrared aurora

Tom Stallard

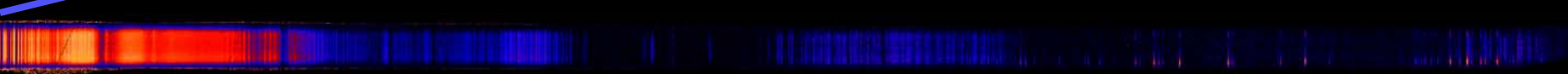
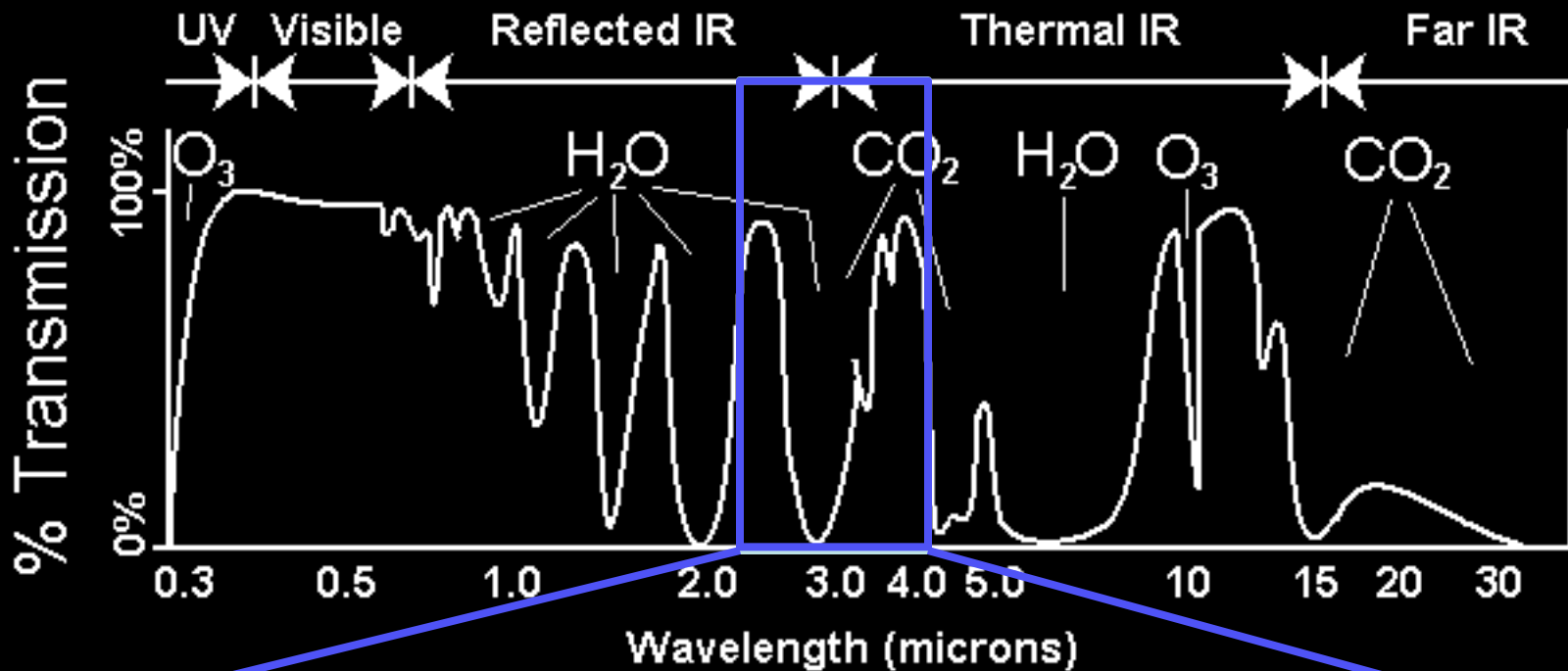
UK MAG-VIMS team

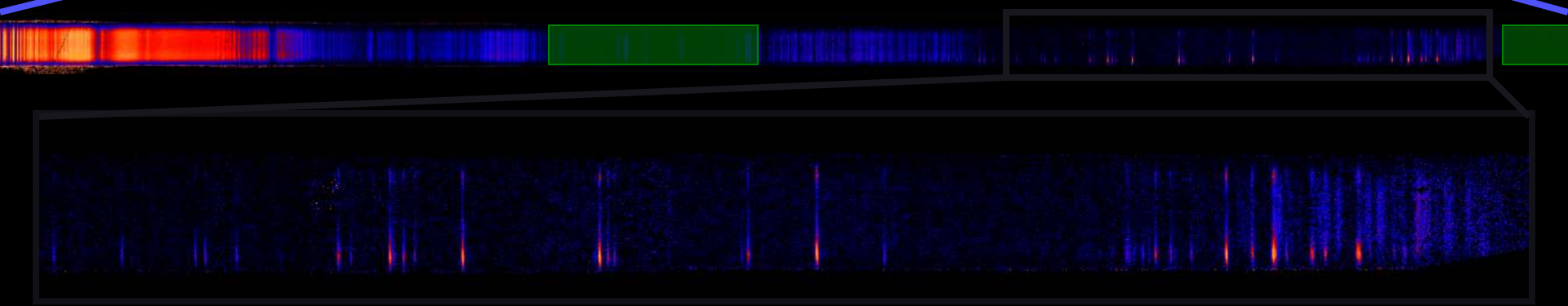
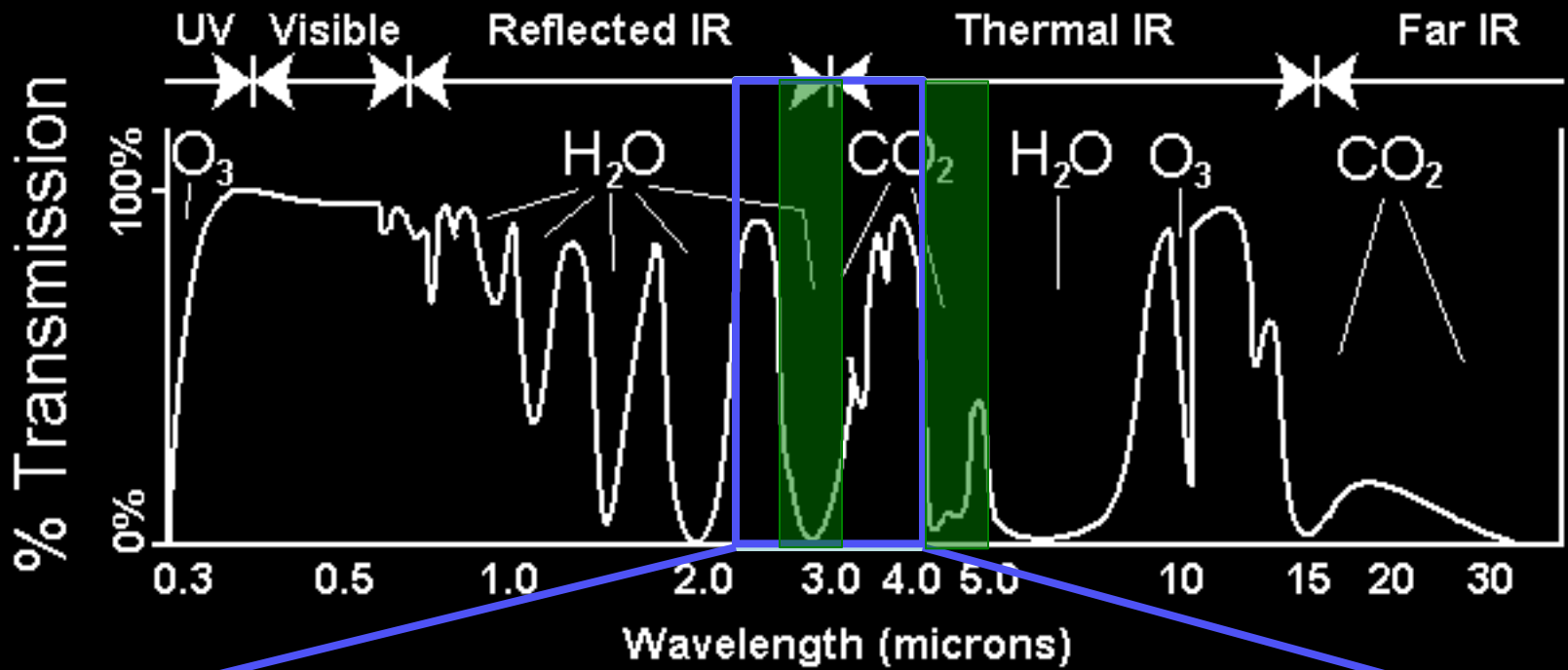
Nicholas Achilleos, Chris Arridge,
Sarah Badman, Emma Bunce, Stan
Cowley, Michele Dougherty, Laurent
Lamy, Makenzie Lystrup, Henrik
Melin, Steve Miller, Dean Talboys

The Cassini VIMS team

Robert Brown, Kevin Baines,
Bonnie Buratti, Roger Clark,
Christophe Sotin, Phil
Nicholson and Pierre Drossart







UV

IR



H_2

H_2

$=$

H_2^+

\rightarrow

$H_2^+ + H_2$

$=$

H_3^+

.....

H_3^+

1

2

3

Gas Giant Upper Atmosphere Temperatures

	Jupiter	Saturn	Uranus	Neptune
T_{obs}	940	400-800	600-800	600
T_{calc}	203	177	138	132



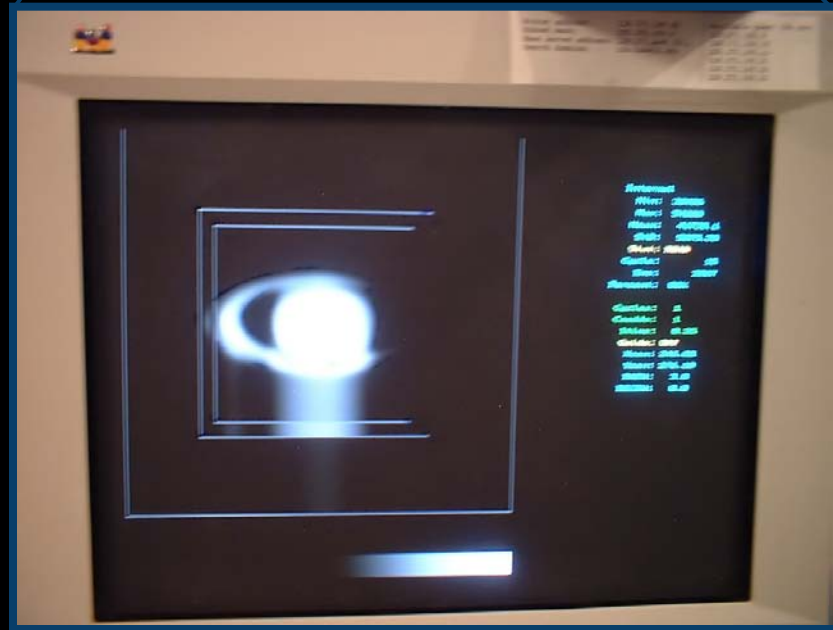


Mauna Kea, Hawaii





NASA InfraRed Telescope Facility (IRTF)



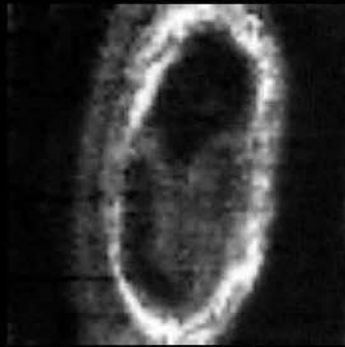
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T = 400K



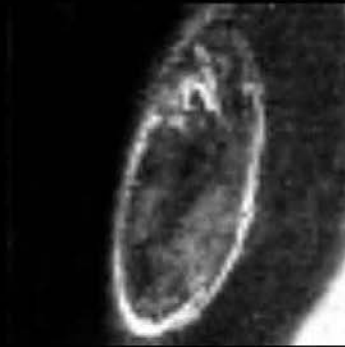
Jul 13 2008 02:31:32



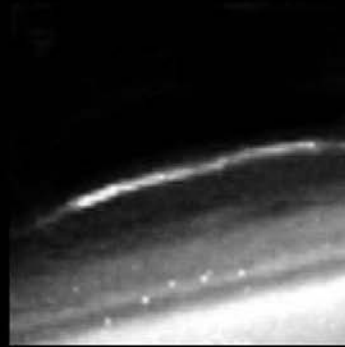
Jul 18 2008 03:09:23



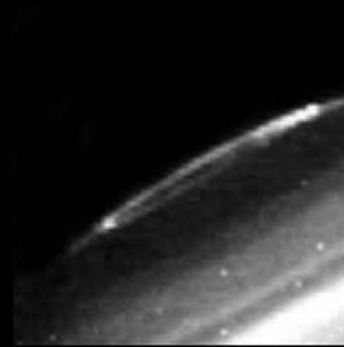
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Jul 19 2008 13:38:07



Jul 24 2008 02:54:43



Jul 24 2008 14:22:25



Jul 25 2008 01:39:42

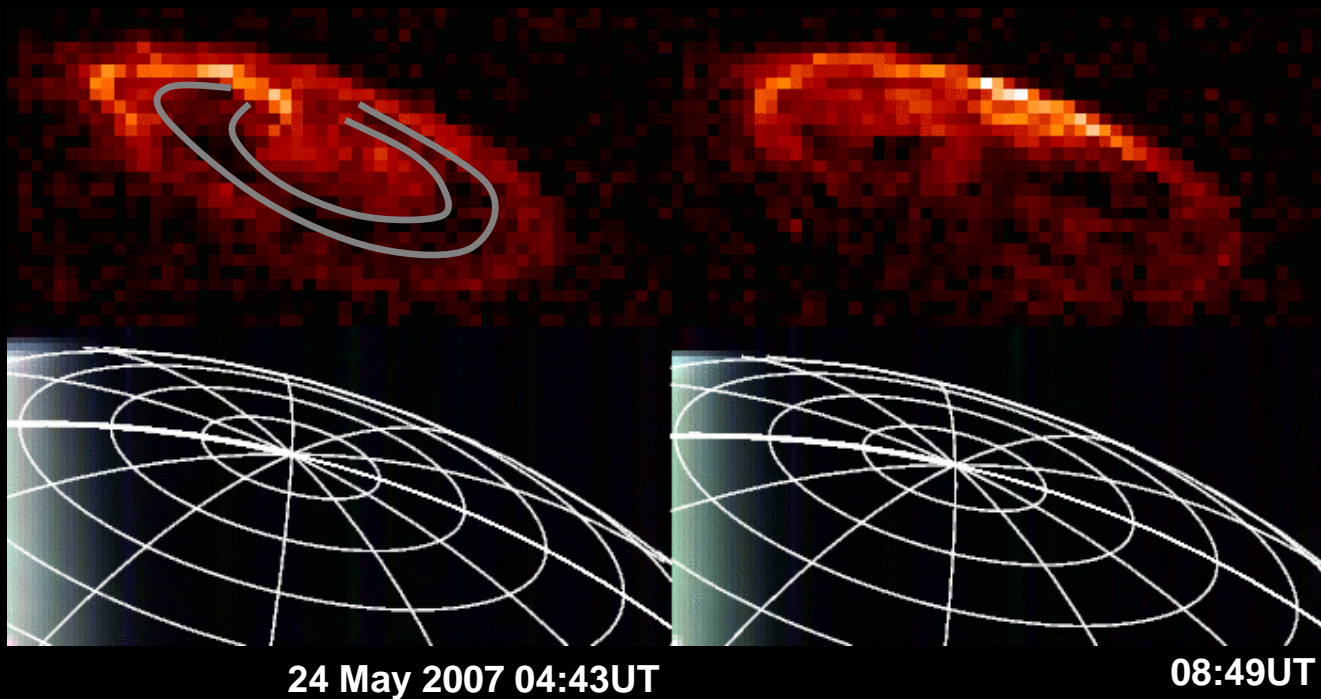


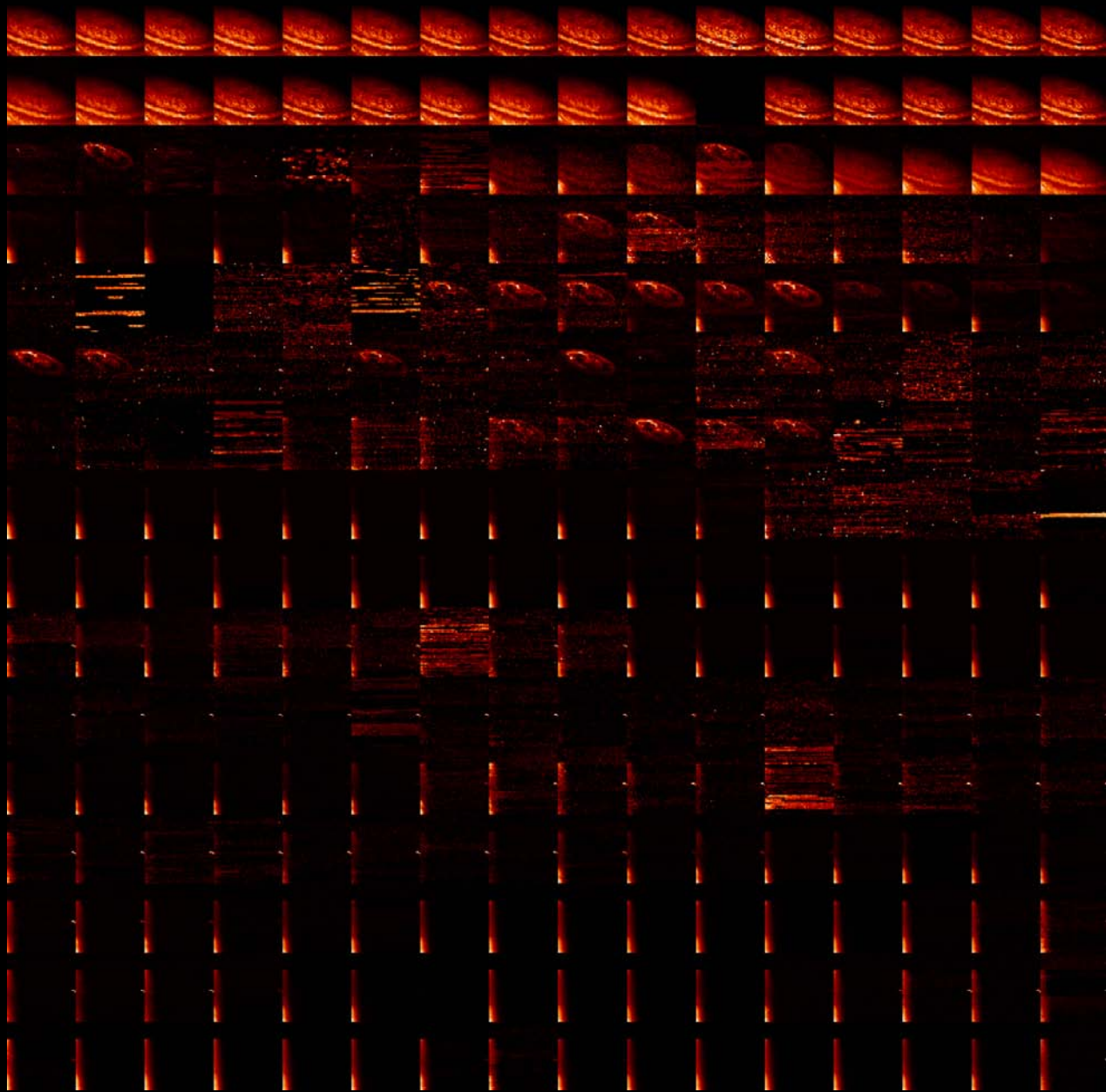
Jul 25 2008 13:19:24



Jul 26 2008 02:39:43

Bright Polar Aurora





Thermal emission

Auroral emission
- methane absorbs sunlight

Reflected sunlight



