

JunoCam at PJ33: What the pictures show

John Rogers (BAA) (2021 May 16)

Figures

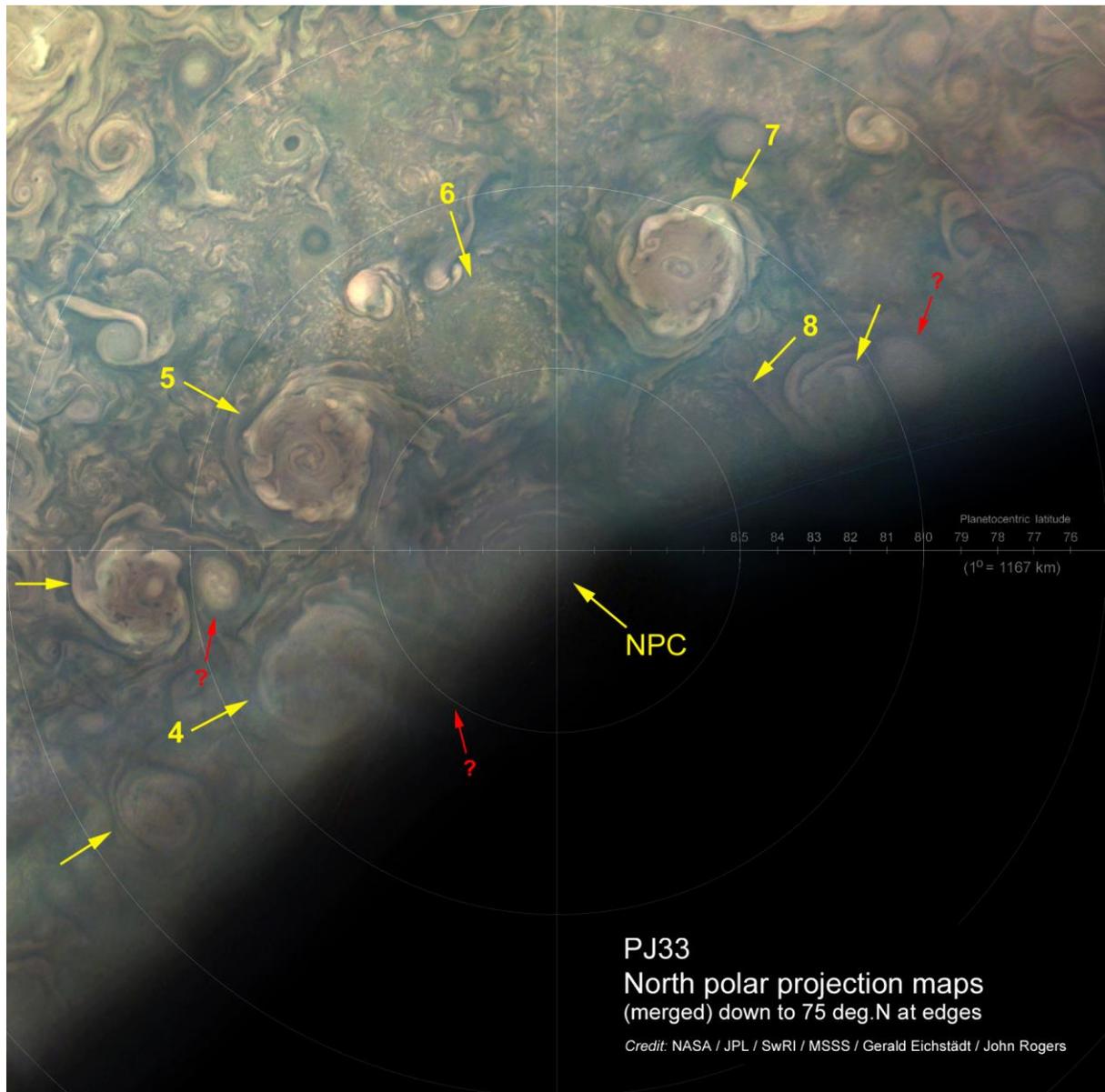
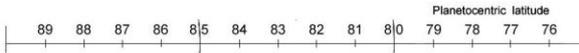


Figure 1. Composite north polar projection map down to 75°N at edges, showing the CPCs cluster.

Composite north polar projection map, PJ30-PJ33

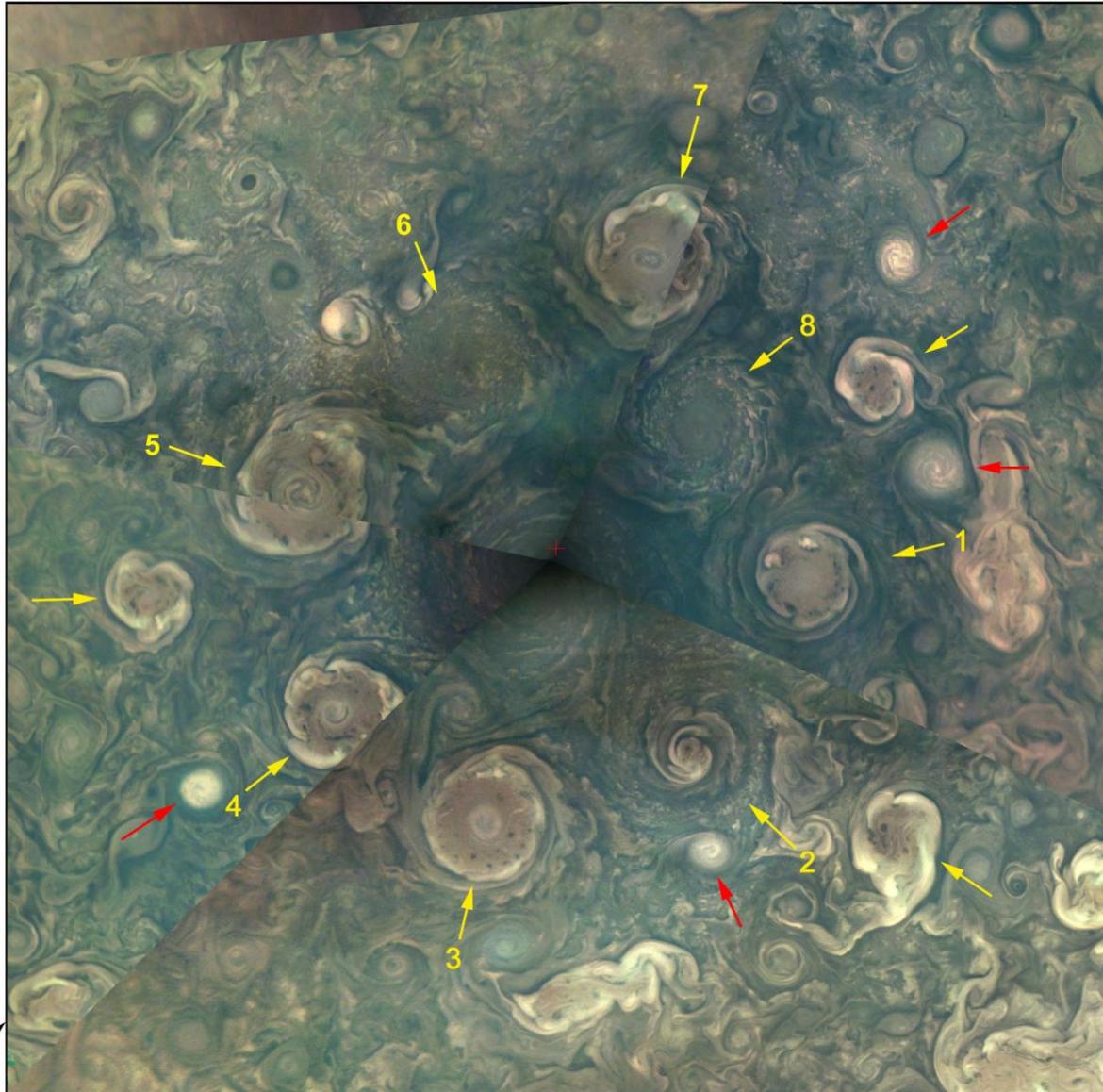
L3=0 to right. PJ33 rotated -7° & shifted 0.2° lat.;
No rotation nor translation for the others.



PJ33

Credit: NASA / JPL / SwRI / MSSS / Gerald Eichstädt / John Rogers

PJ32



PJ30

PJ31

Figure 2. Composite north polar projection map of the north polar cluster from the last four perijoves.

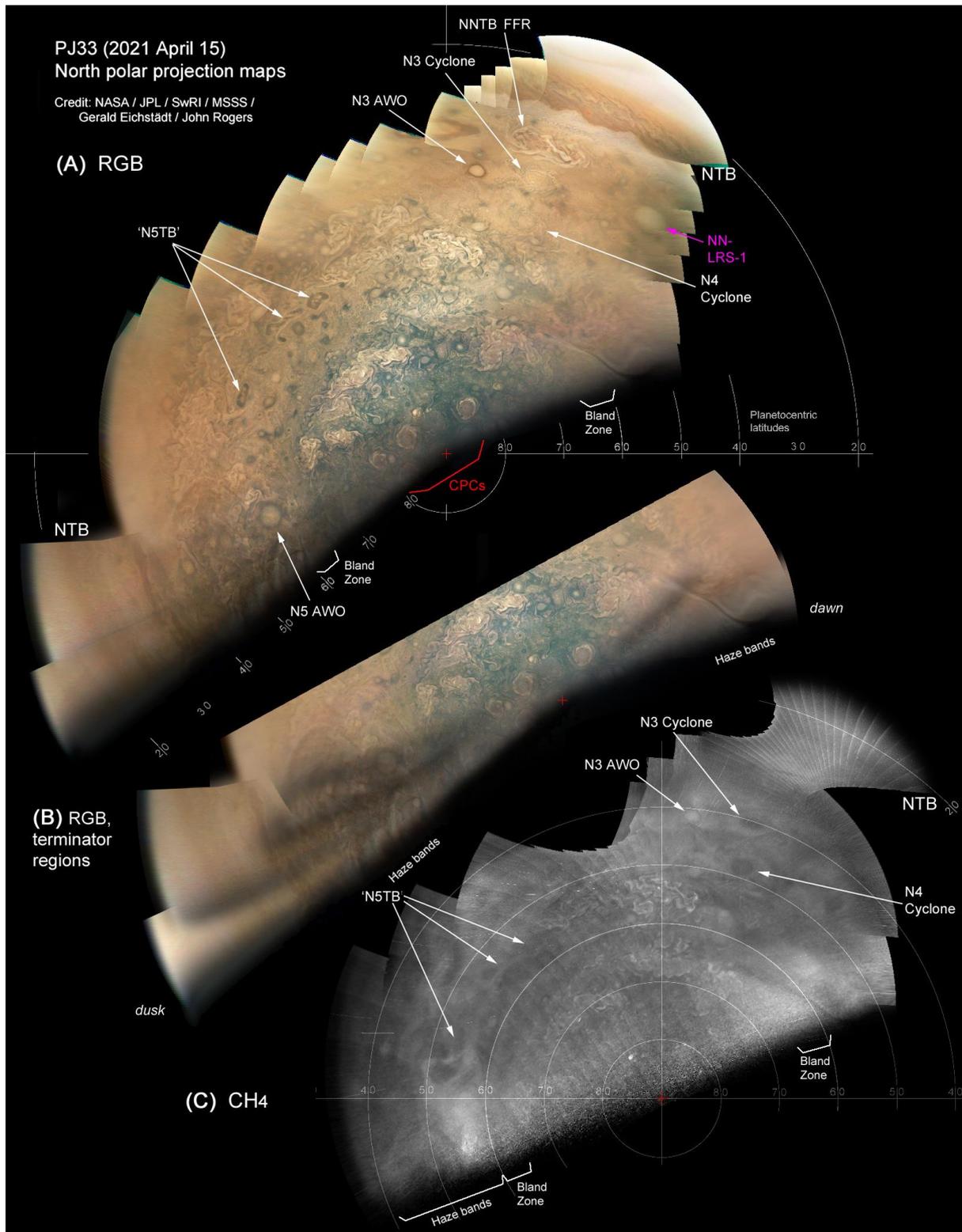


Figure 3. Composite north polar projection maps down to lower latitudes: (A) in RGB, (B) RGB compiled from the terminator regions, (C) in CH₄.

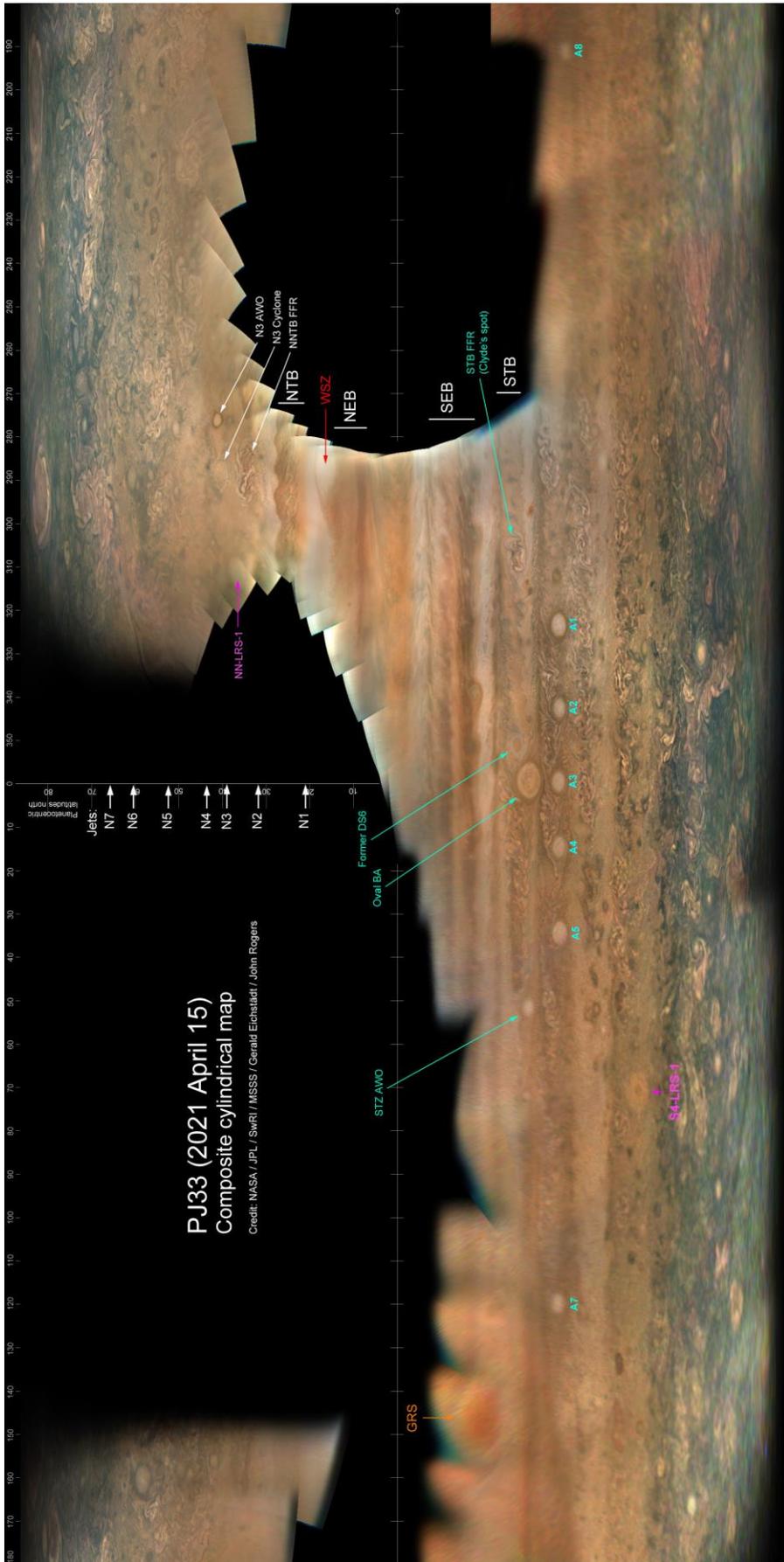


Figure 4. Composite global cylindrical map.

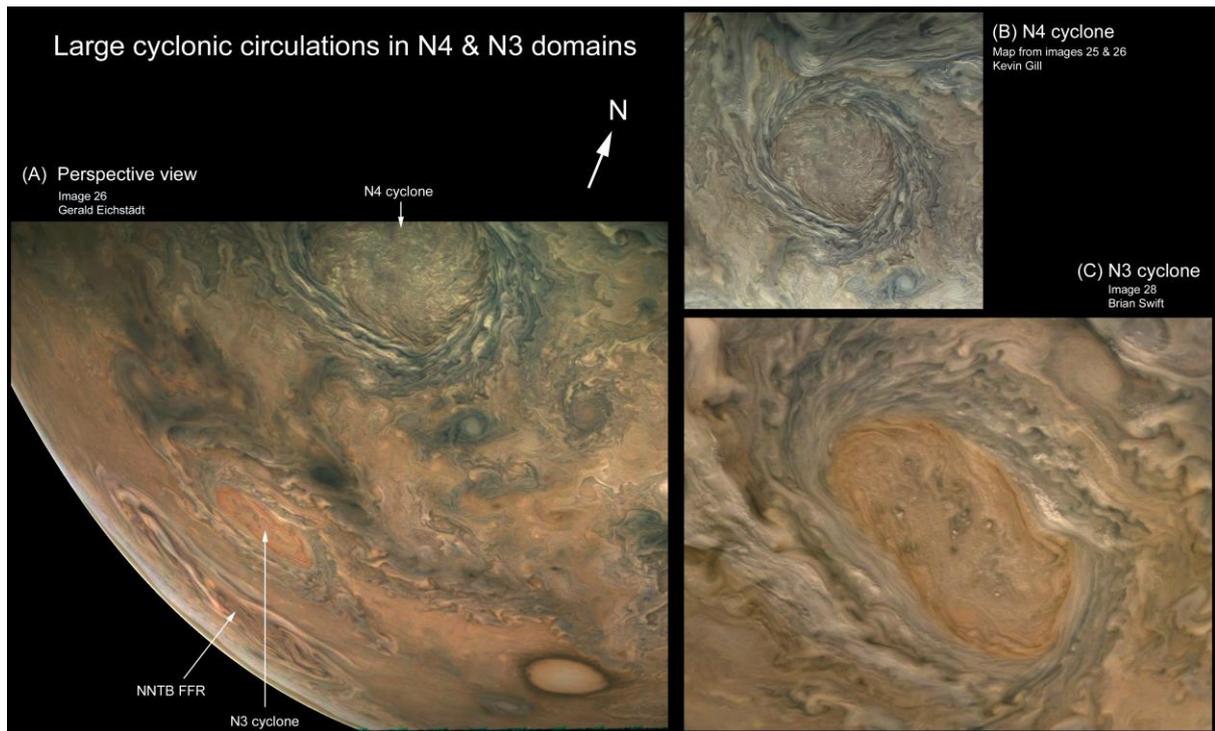


Figure 5. Images of two quite large cyclonic circulations, in the N4 & N3 domains.

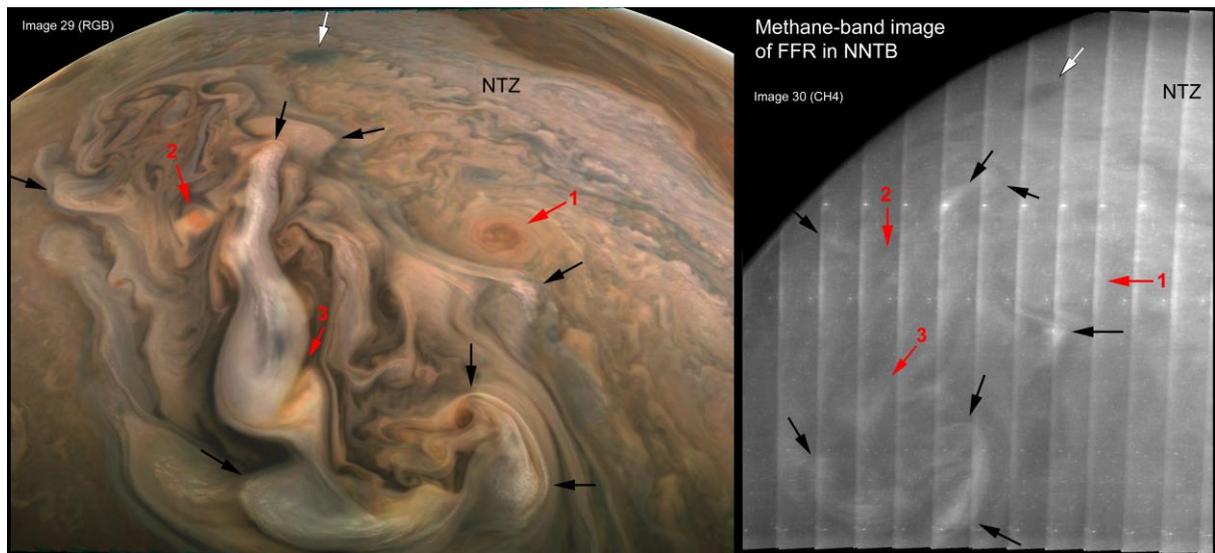


Figure 6. RGB and CH₄ images of a FFR in the NNTB, looking east. *Black arrows* indicate selected extremities of the brightest strips in the FFR, allowing registration with the CH₄ image. These are topped with bright white popup clouds and are methane-bright. The RGB image suggests that they may be extending above lower cloud layers. *Red arrows* indicate reddish patches, all of which have approx. the same brightness as the surroundings in the CH₄ image: (1) a small reddish-brown cyclone; (2) an orange patch on a cyclonic eddy; (3) a yellowish-orange patch on a cyclonic eddy, which appears to be over-riden by a bright white cloud strip. (All colour descriptions are relative. The CH₄ image contained much noise, which has been partially removed in Photoshop.)

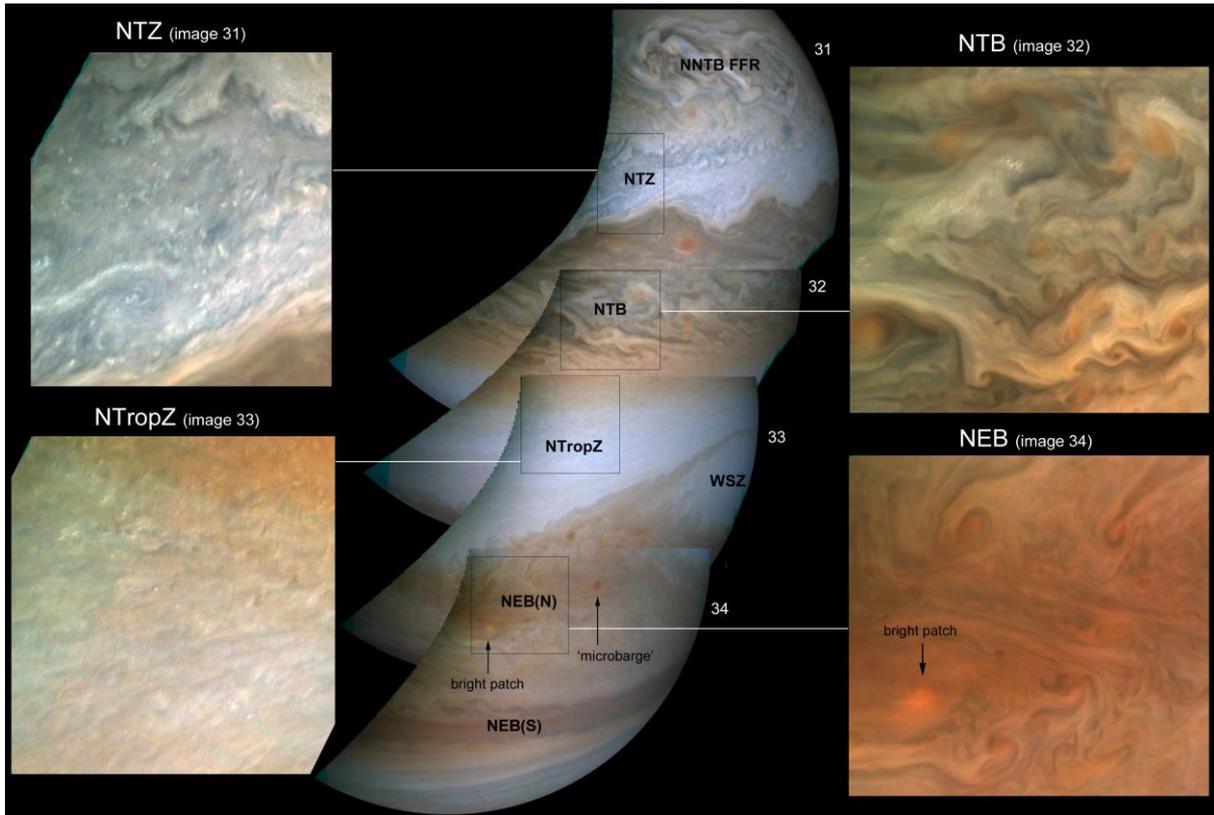


Figure 7. Images 31-34 showing the cloud textures in the quiescent NTZ, NTB, NTropZ, & NEB. The main panel is a stack of the versions posted by the JunoCam (MSSS) team, with only rough alignment. The side panels are full-resolution excerpts from the versions by Gerald Eichstädt. Intensities and colours have been arbitrarily adjusted.

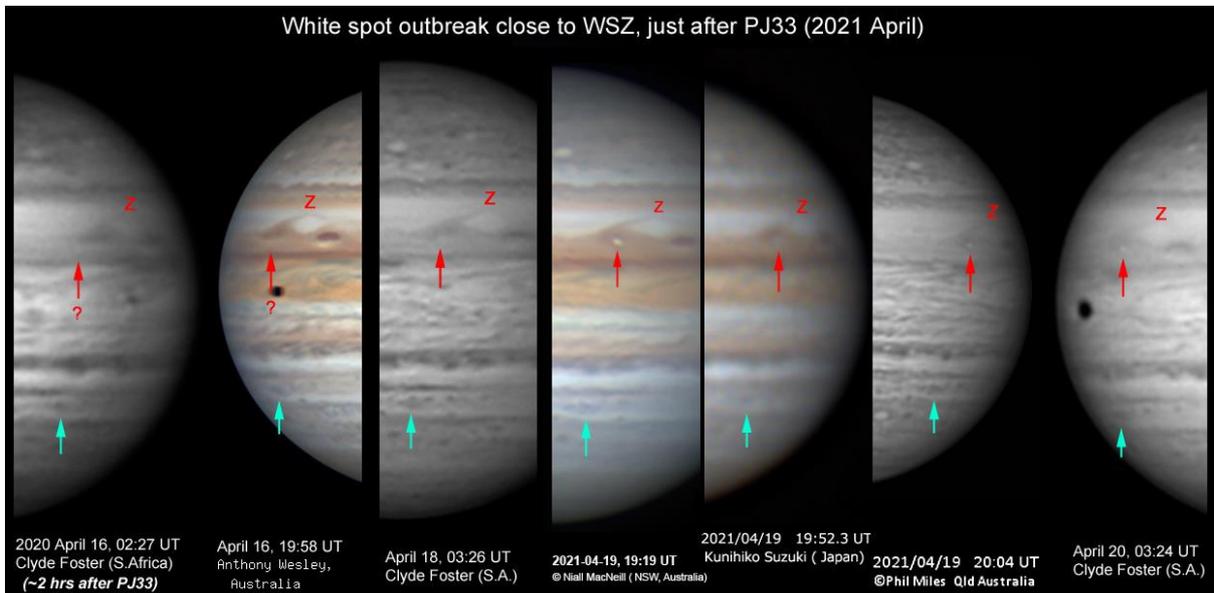


Figure 8. Ground-based images showing two successive eruptions of a tiny bright spot (red arrow) in the NEB, in a dark brown formation just following White Spot Z: (A) just after PJ33 in April, (B) in May. Also shown is “Clyde’s spot” (cyan arrow). [(B) is on next page.]

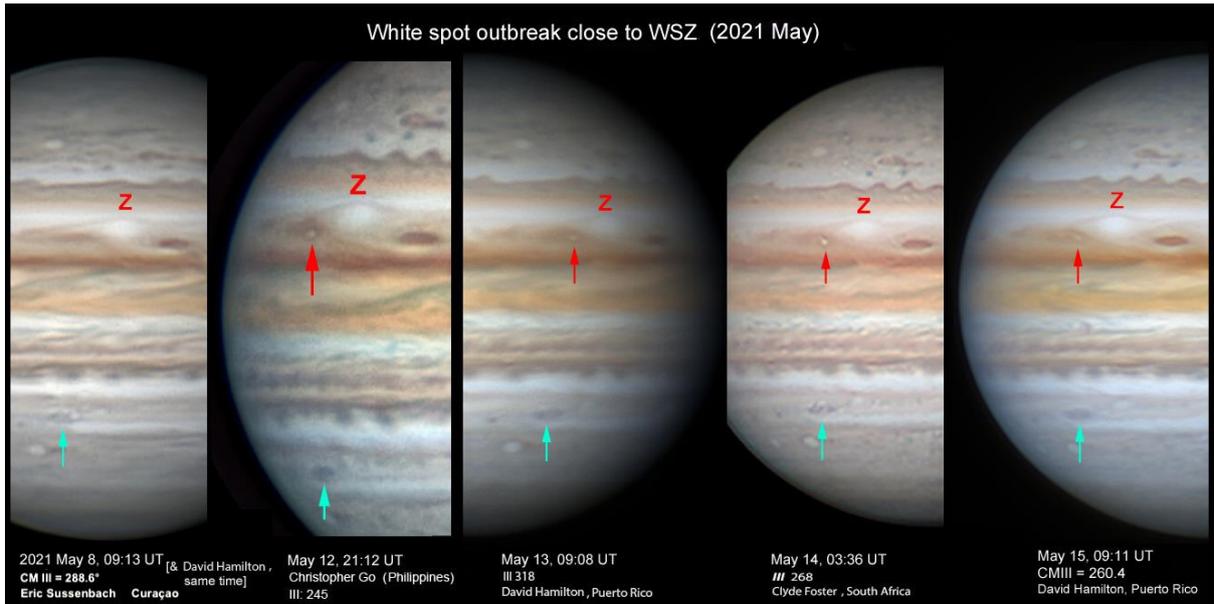


Figure 8 (B), in May.

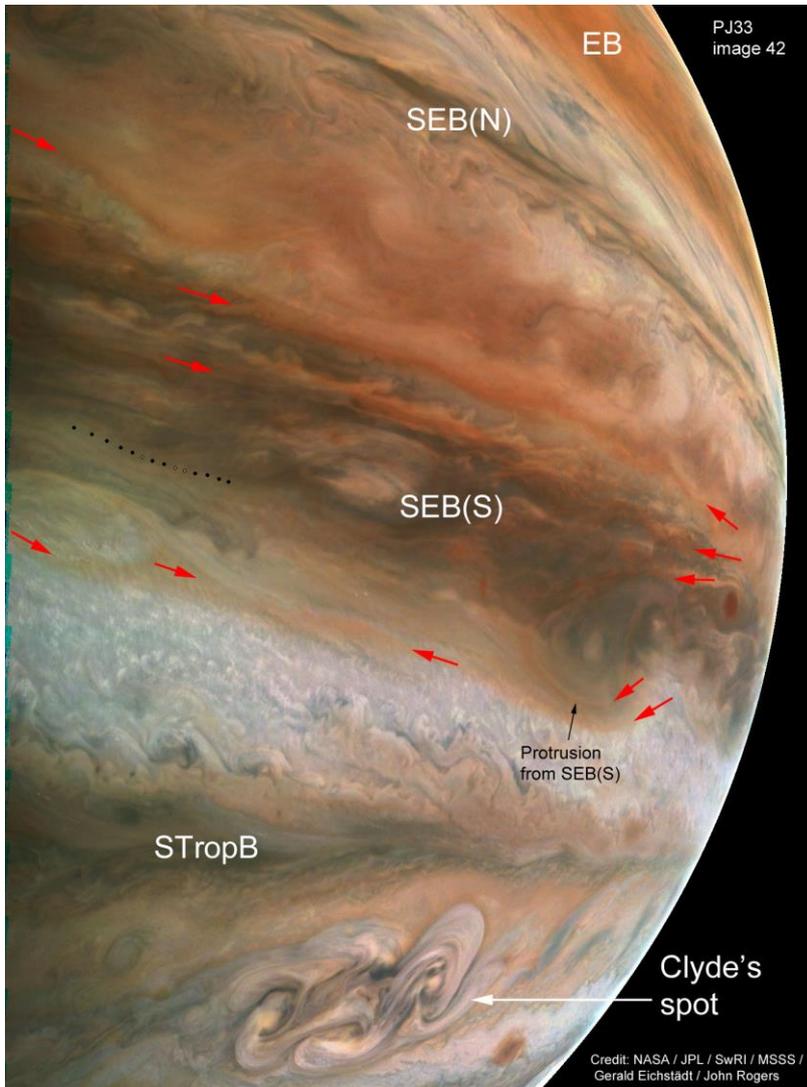
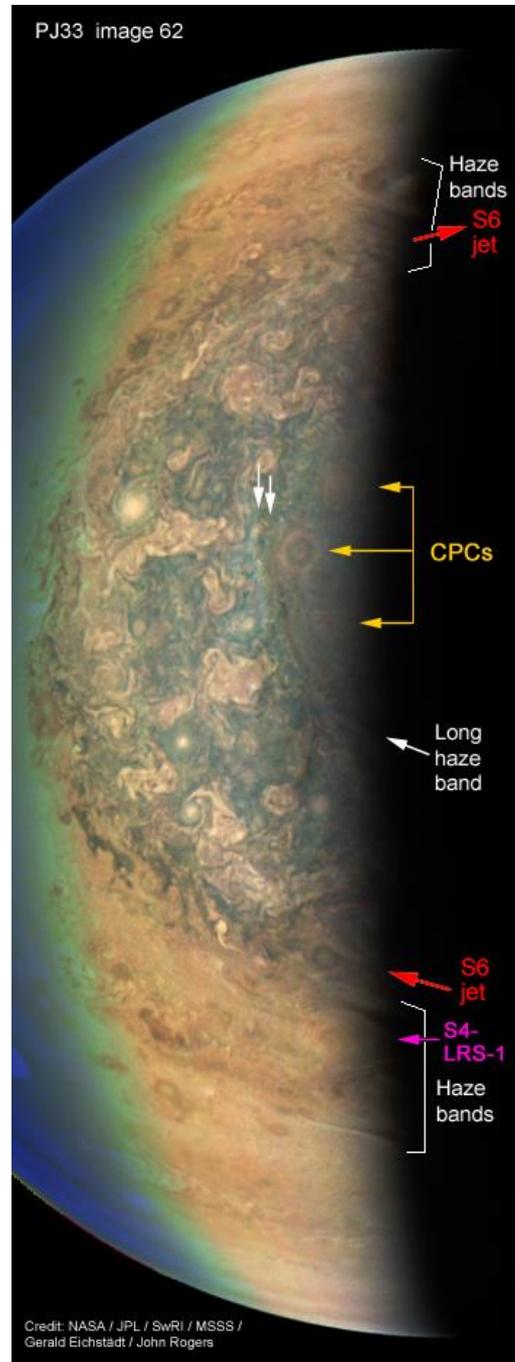
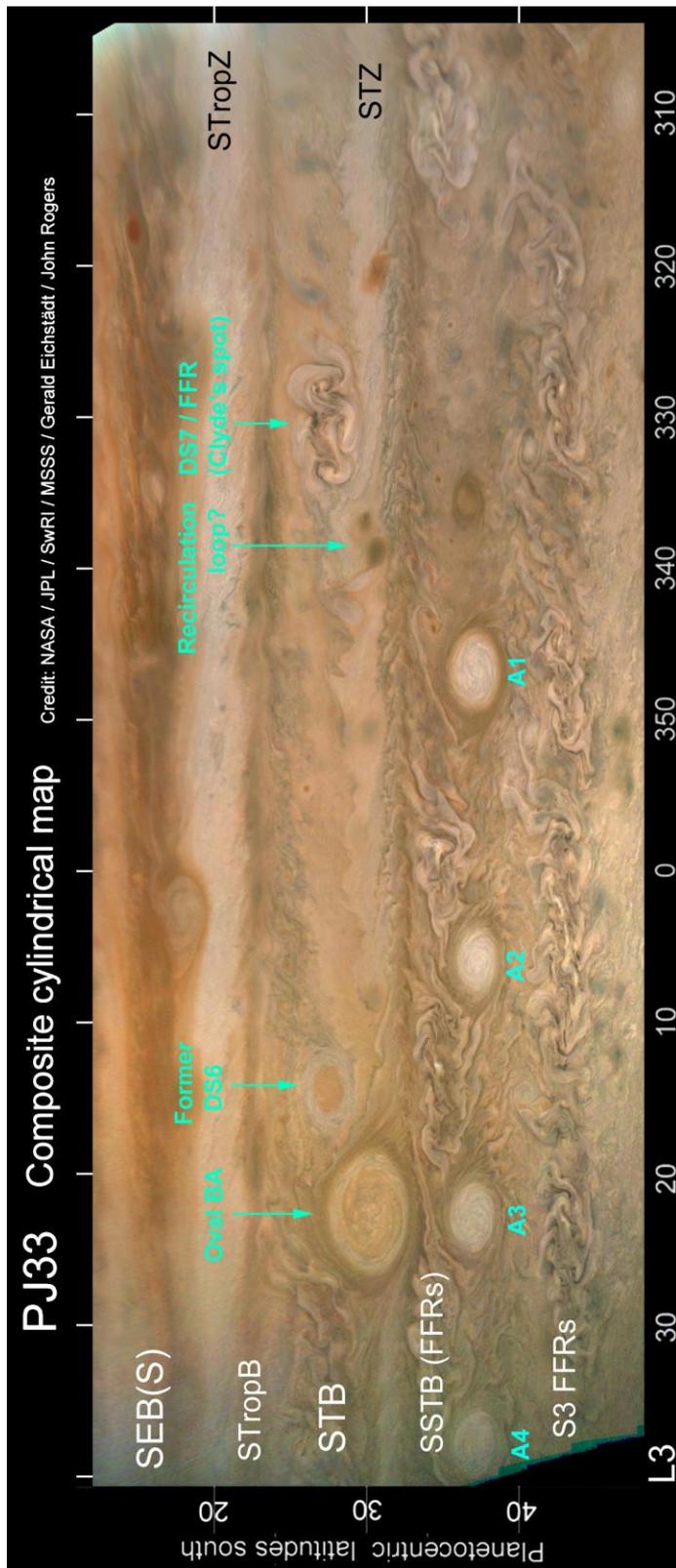


Figure 9. Image of the SEB(S), showing reddish bands (between red arrows) and faint mesoscale waves (above row of black dots).



(L) Figure 10. Cylindrical map of S. Temperate and S.S. Temperate domains, from images 44 & 49.

(R) Figure 11. View over the south polar region (image 62). This is a long exposure taken to record faint features at the terminator, hence the overexposed (deep blue) part of the crescent. Many haze bands are visible near the terminator, including some further south than the polar maps in Fig.14, in the S4 and (near bottom) S3 domains. There is also a long band visible on the sunlit disk, tangential to two CPCs.

PJ33: South polar projection map (CH₄) Credit: NASA / JPL / SwRI / MSSS / Gerald Eichstädt / John Rogers

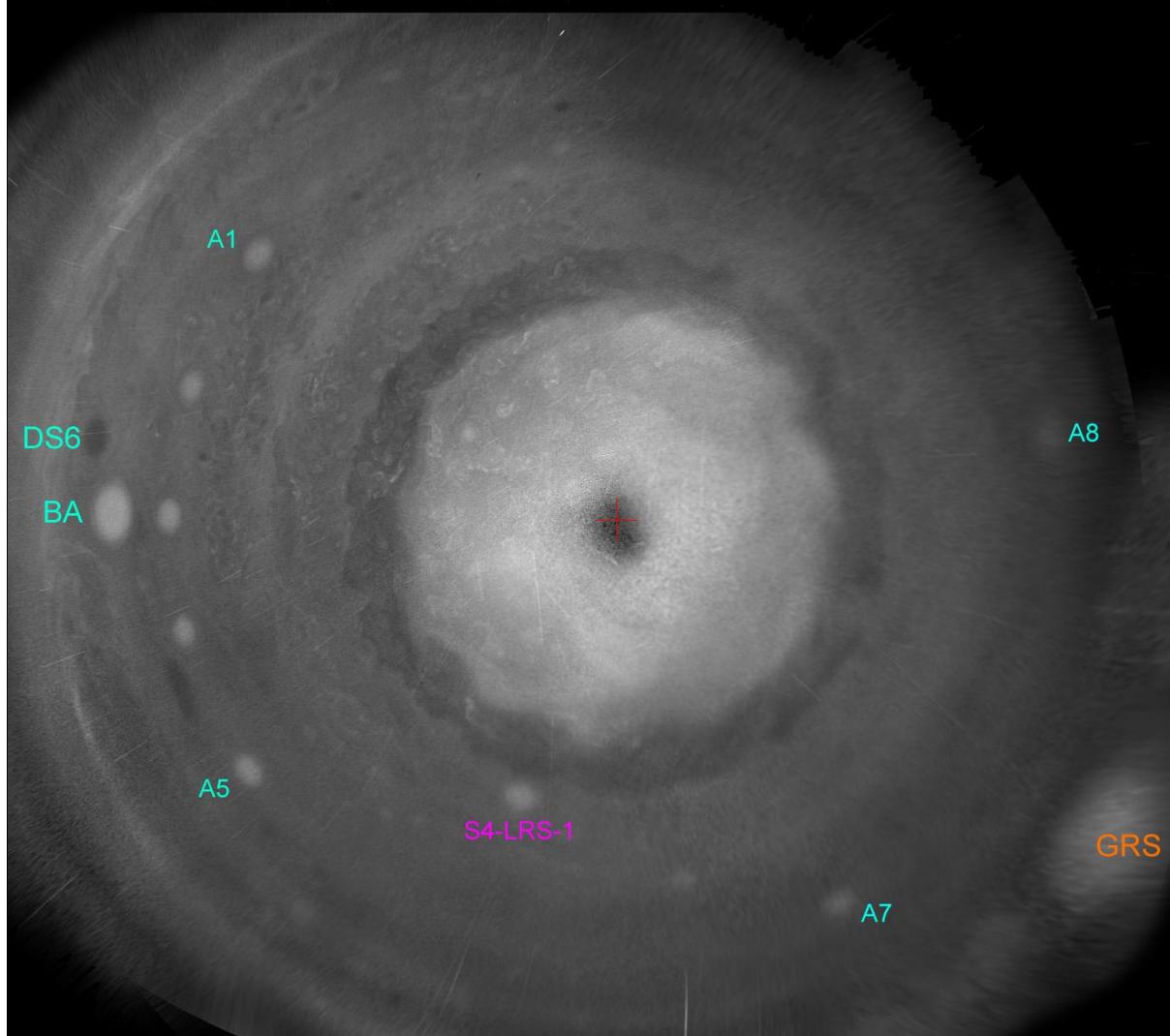


Figure 12. Composite south polar projection map in the methane band.

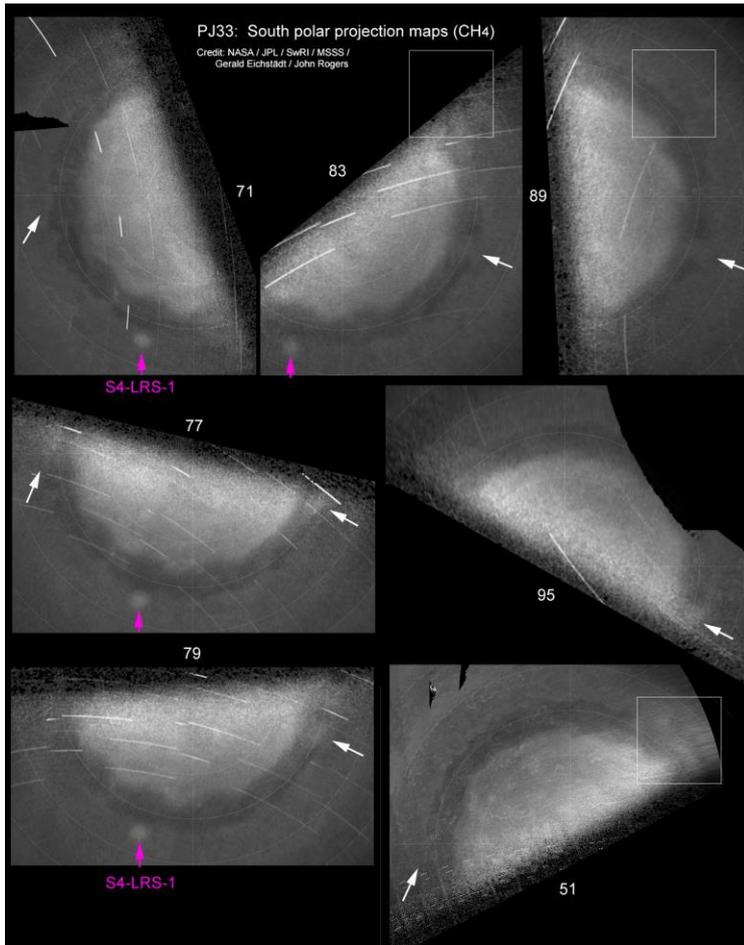


Figure 13. South polar projection maps from some individual methane images, as numbered. White arrows indicate two locations where a faint extension of the S. Polar Hood is seen when near the terminator (see map 77), and a white box encloses a location with more complex such features. Some of these features are seen at both dawn and dusk, but not under higher sun. (The numerous curved streaks are caused by ‘hot pixels’ that produce streaks repeating on each strip of the image.)

[Figure 14 is on next page.]

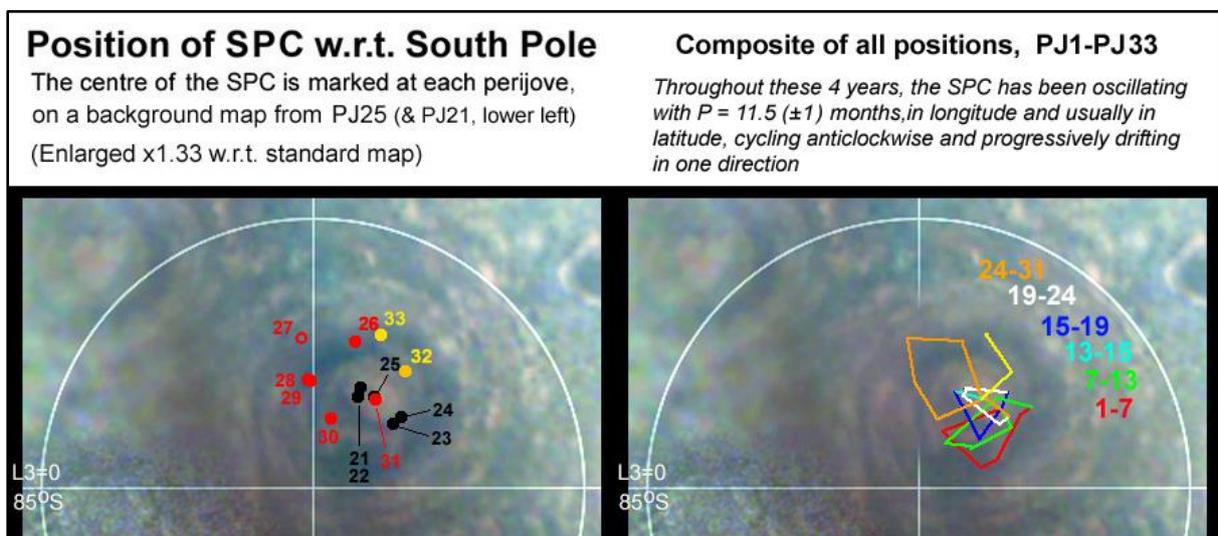
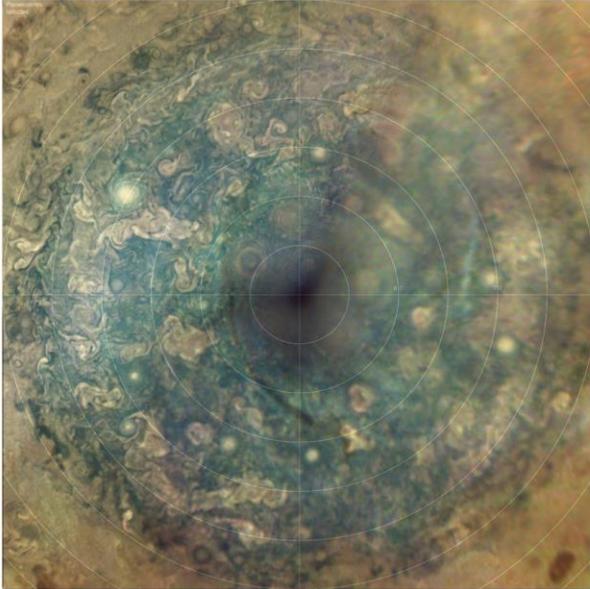


Figure 15. Motion of the centre of the SPC: (A) from PJ21 to PJ33, (B) throughout the Juno mission.

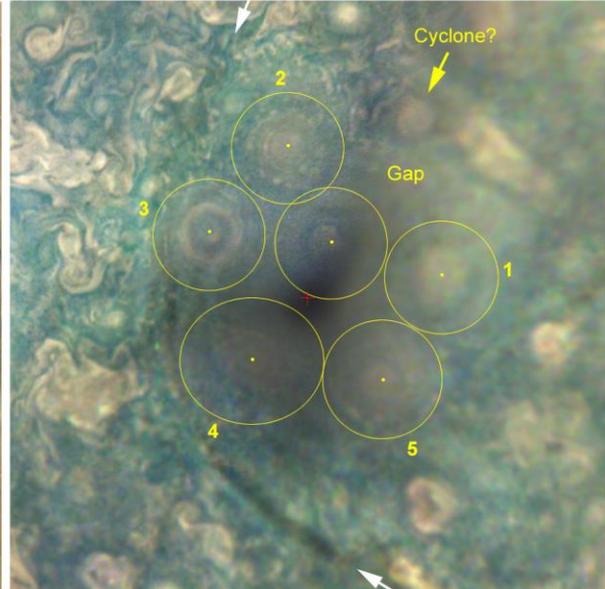
PJ32: South polar projection maps

All down to 60°S at edges (half scale) except (B) L3=0 to left. Red cross = south pole.

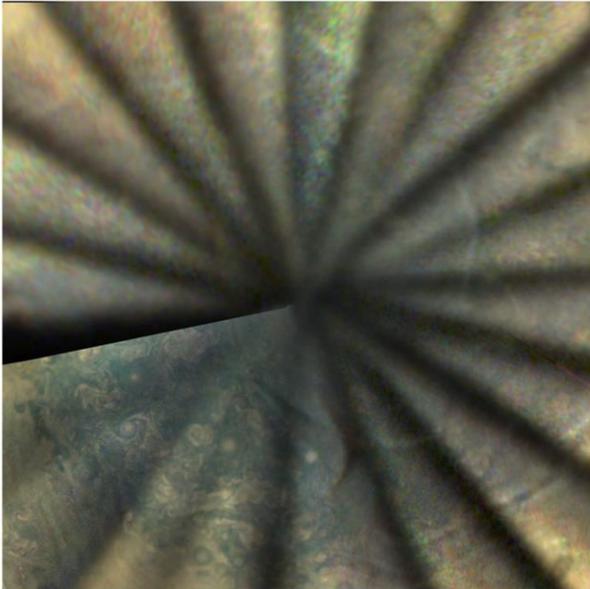
(A) RGB



(B) RGB (full scale, down to 75°S at edges): CPCs are numbered



(C) Near-terminator regions (dawn)



(D) Near-terminator regions (dusk)

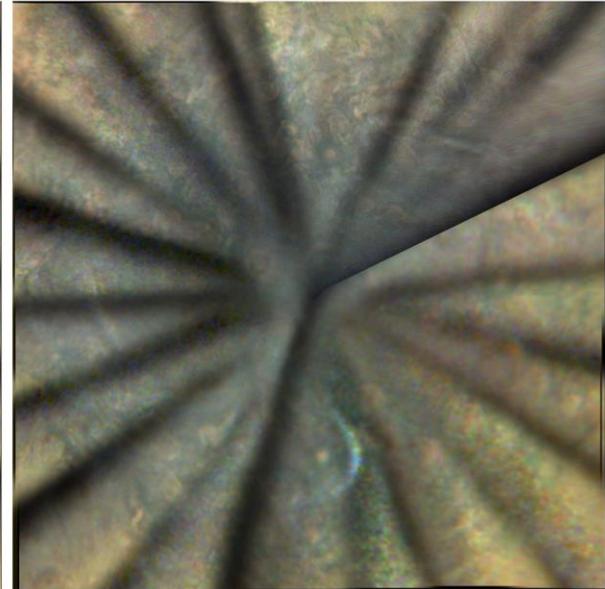


Figure 14. Composite south polar projection maps. All are down to 60°S at the edges, shown at half scale, except for (B). (Full-scale versions are available if needed.)