Jupiter in 2020: Report no.4: Part II

John Rogers (BAA), including results from the JUPOS team. (2020 July 29)

Figures (miniature copies):

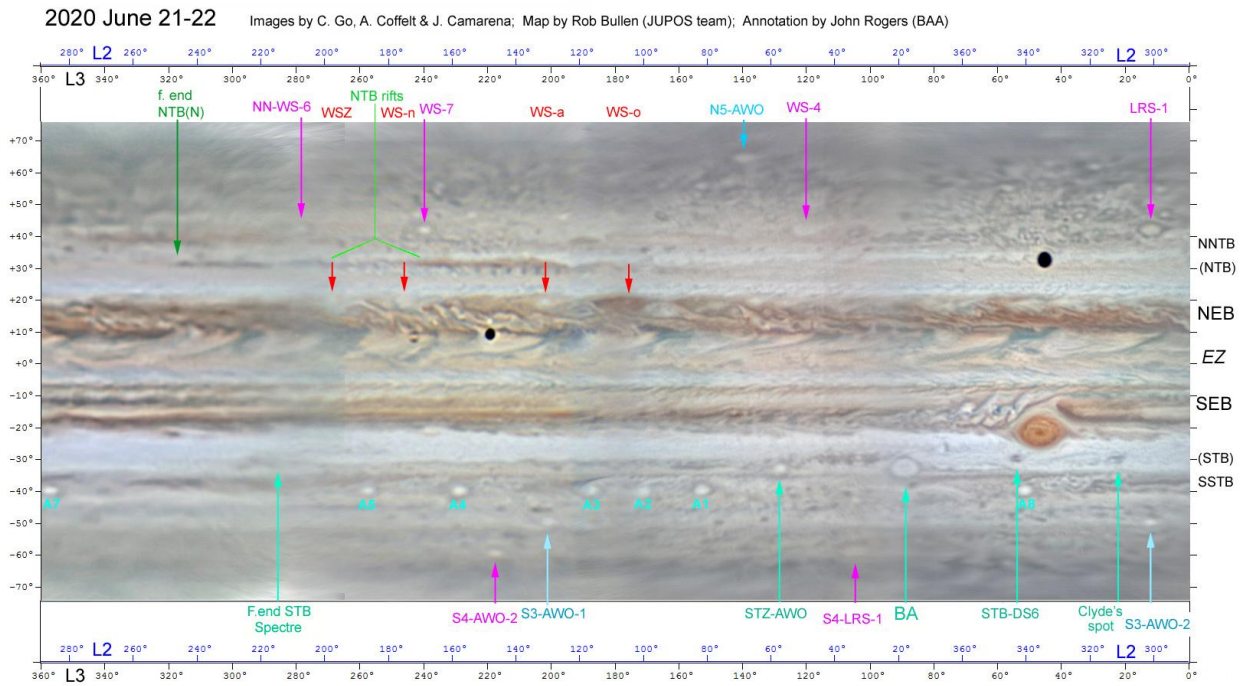


Figure 1. Map of the planet on 2020 June 21-22.

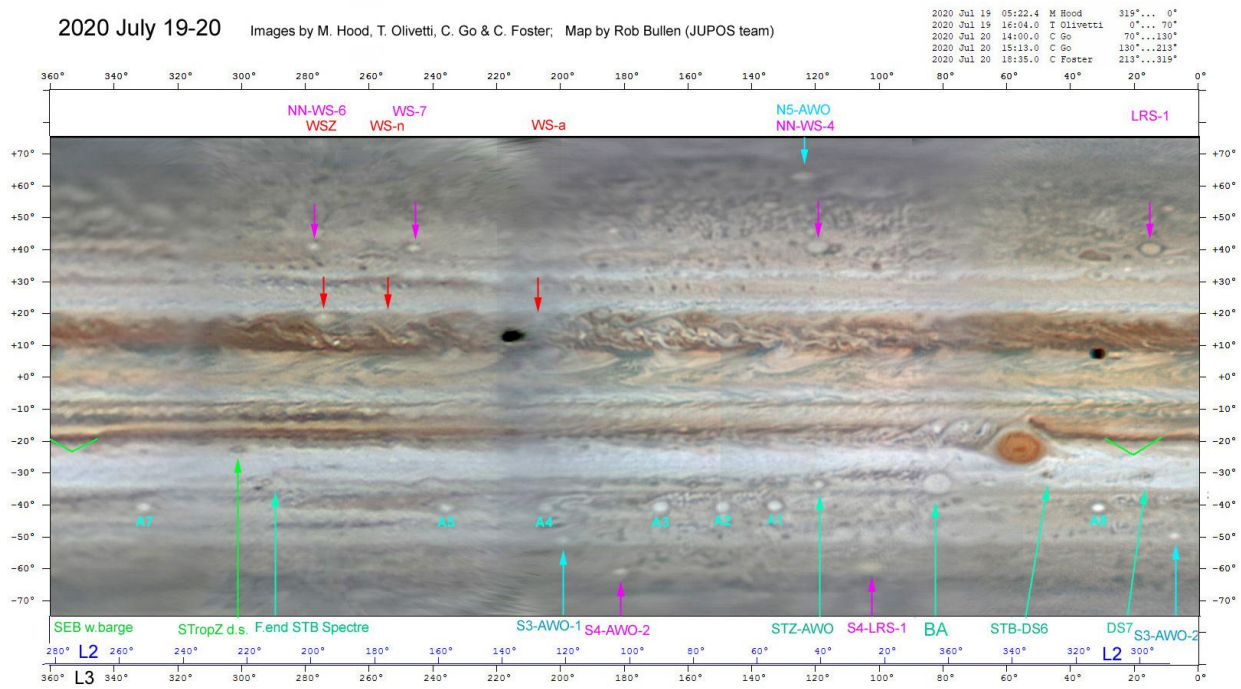


Figure 2. Map of the planet on 2020 July 19-20.

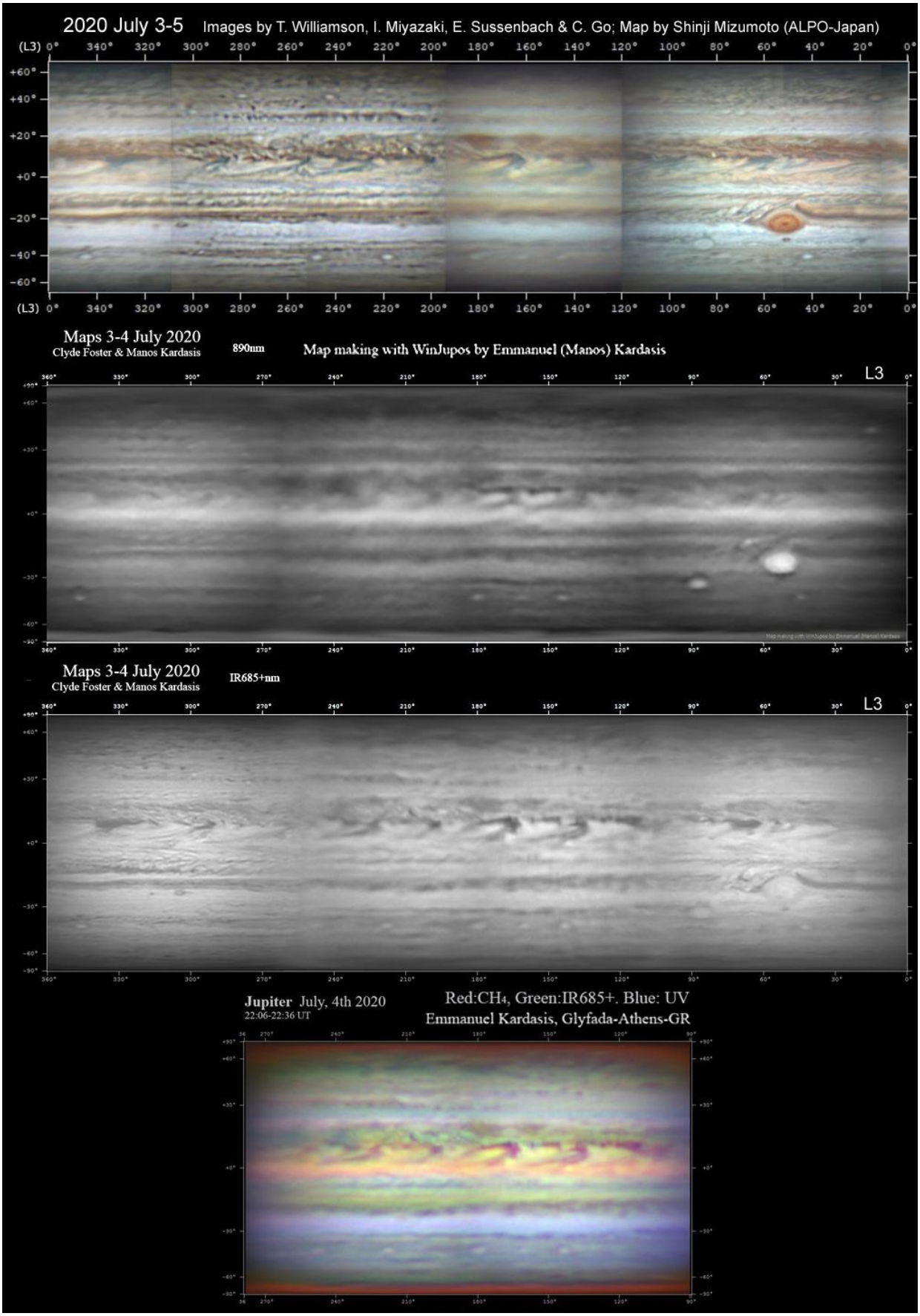


Figure 3. Maps on 2020 July 3-4 in RGB, methane, near-IR continuum, and false colour (methane, near-IR and UV).

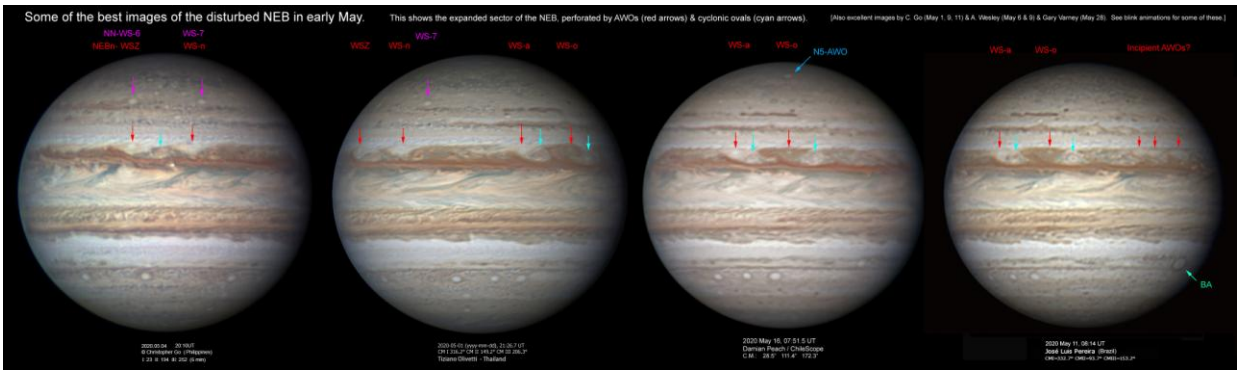
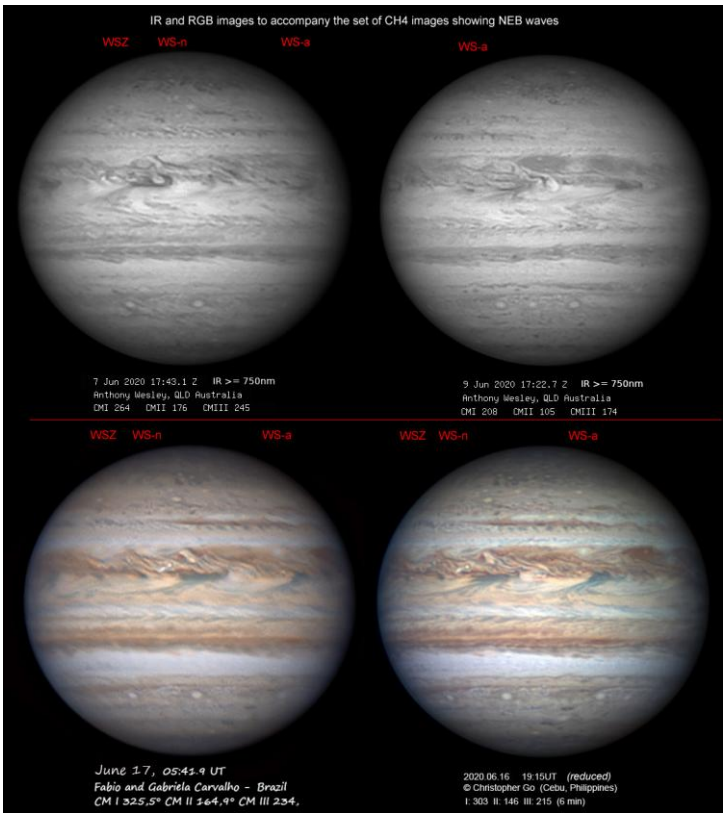


Figure 4. Some of the best images of the disturbed, expanded sector of the NEB in early May. showing the AWOs (red arrows) and cyclonic ovals (cyan arrows). Also includes the NTB rifted region.



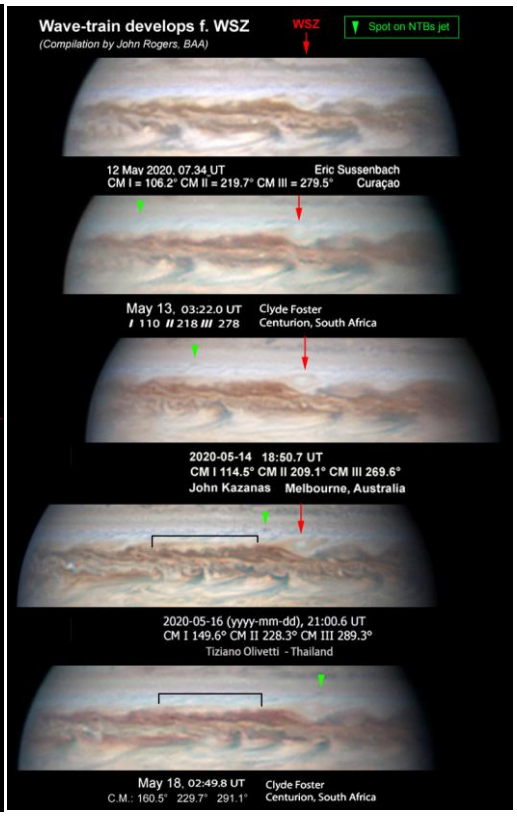


Figure 5 [left]. Some of the best images of the disturbed, expanded sector of the NEB in June, also the NTB rifted region. These images match the 4 methane images in lower left of Figure 9.

Figure 6 [right]. A series of images of the N. Tropical domain around White Spot Z, 2020 May 12-18. The bracket indicates a wave-train that develops on the NEBn f. WSZ on May 16.

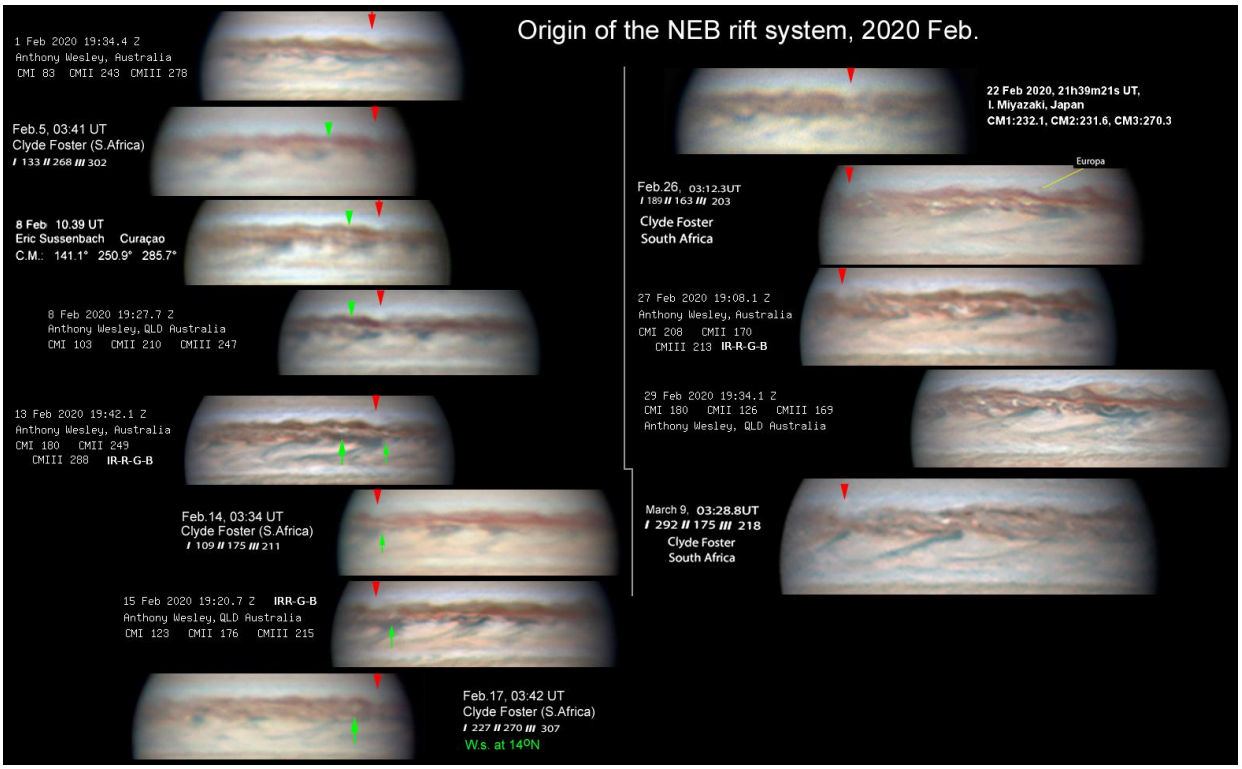


Figure 7A. Images of the region around WSZ in 2020 Feb., showing the origin of the NEB rifted region that generated the NEB expansion, as described in the main text.

Figure 7B *[on next page]*.

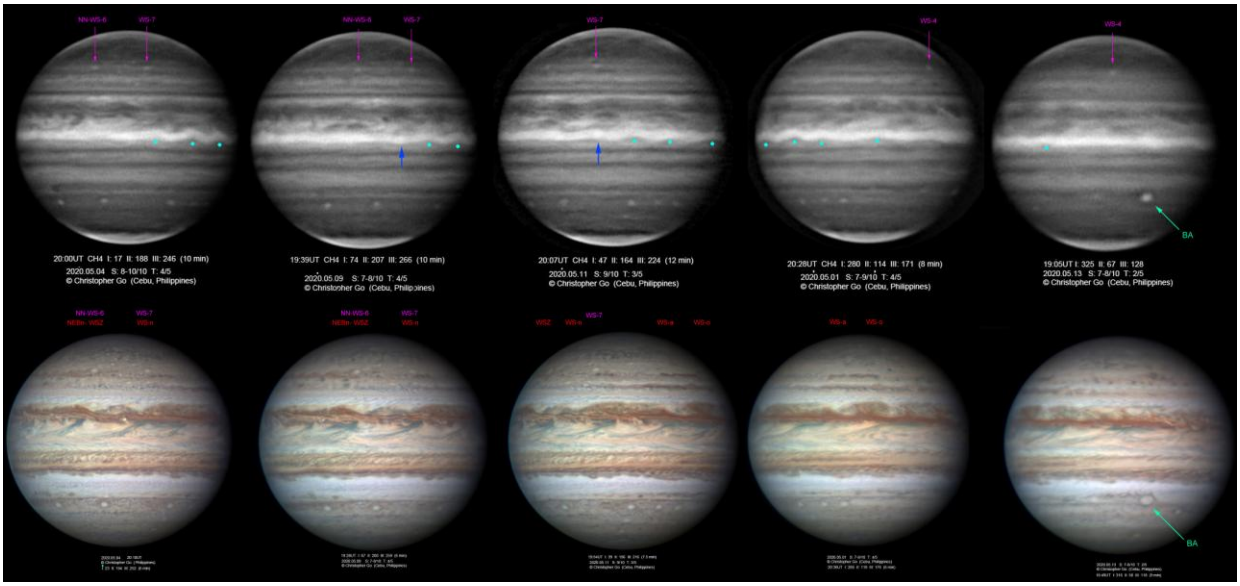


Figure 8. CH4 & RGB images in early May, showing the partly expanded sector of NEB, and the stationary waves in the EZ. All images by Chris Go. *Top:* Methane-band images. Cyan dots mark waves in southern EZ, stationary in L3; blue arrow marks a methane-bright spot, stationary in L1. (This was before the methane-dark waves on the NEB appeared.) *Bottom:* Colour images, similar to Figure 4. Also see **Animation-D** (blink of the CH4 and RGB images).

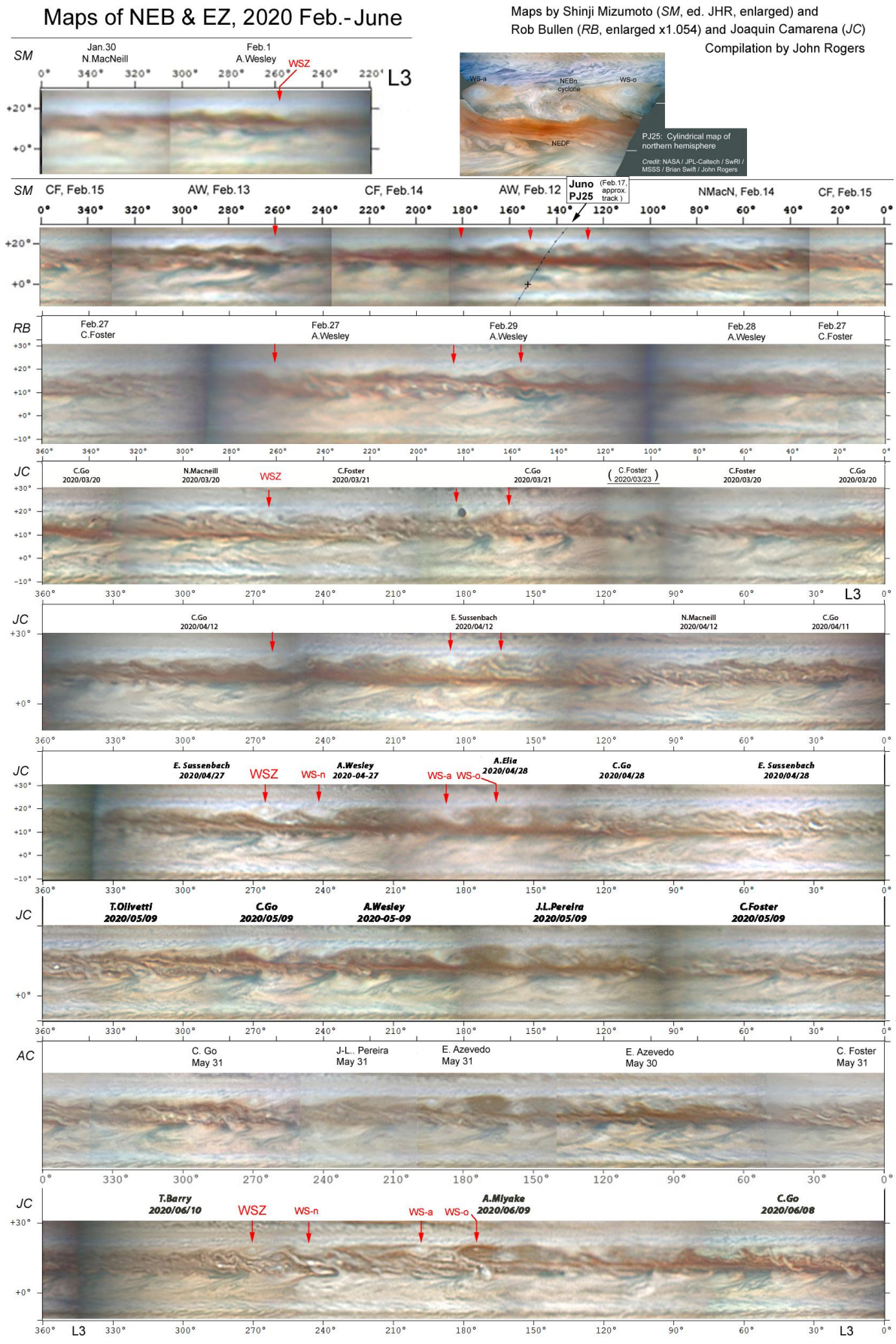


Figure 7B. Maps of the NEB and EZ, aligned in L3, Feb. to June. Red arrows indicate AWOs.

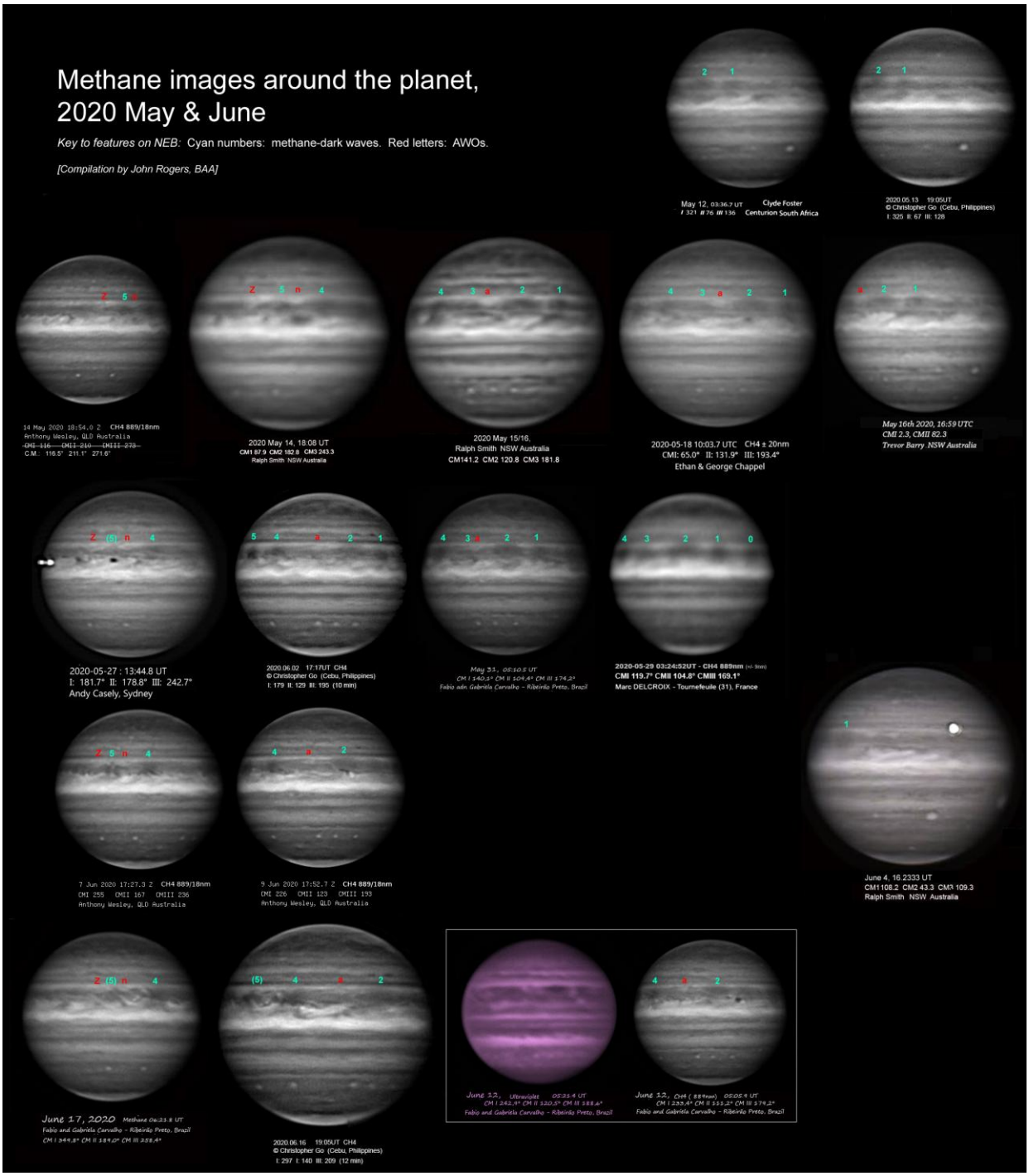


Figure 9. Set of CH4 images all around the planet, 2020 May & early June, showing the methane-dark waves that developed over a sector of NEB. Cyan numbers indicate the waves; red letters indicate the positions of the AWOs (not clearly shown in methane images). (The four images at lower left, in June, match the IR and RGB images in Figure 4.) Also see **Supplementary Figure A** for a more extensive set of these images.

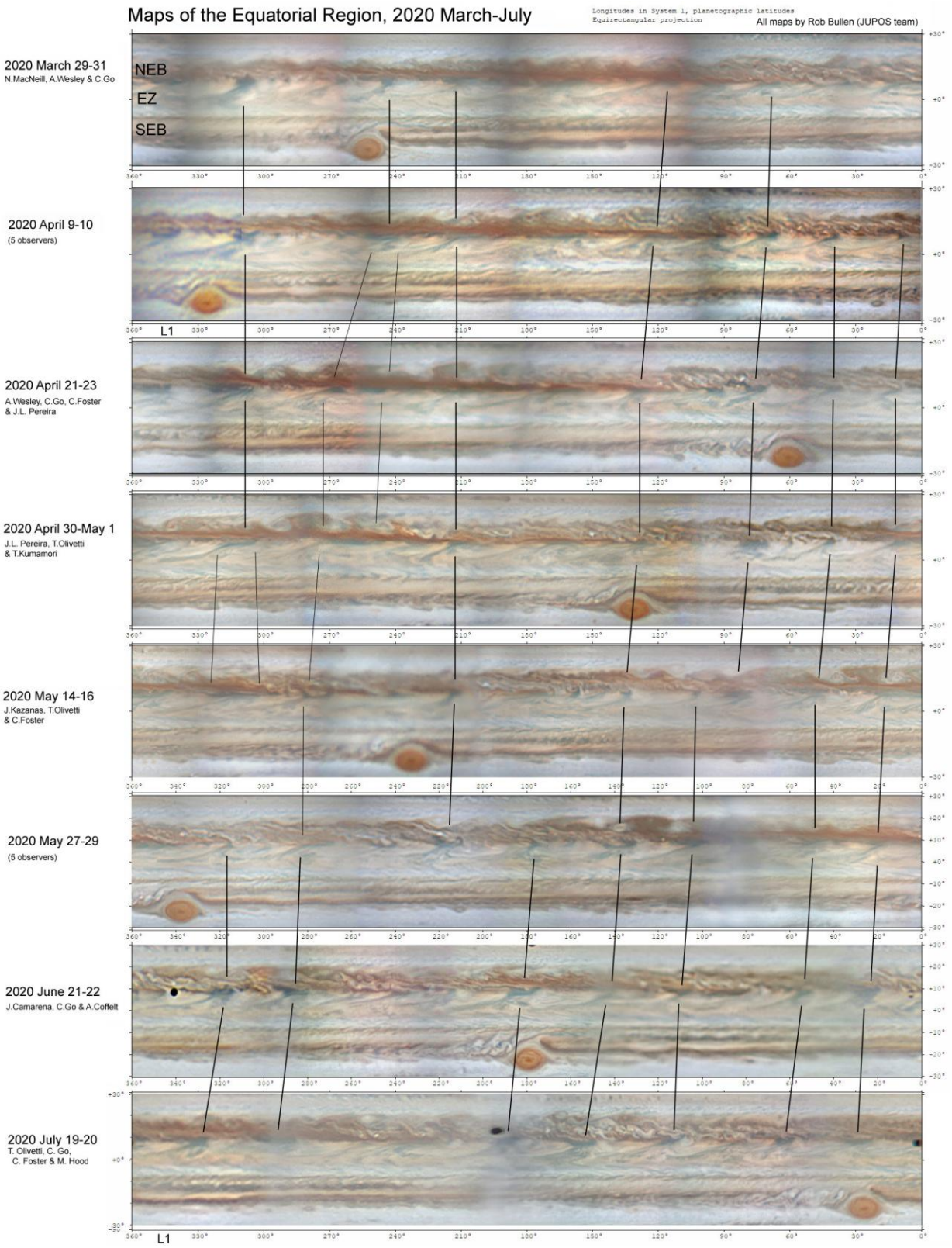


Figure 10. Maps of the Equatorial Region, 2020 March to July, in L1. Tracks of the major NEBs dark formations are marked.

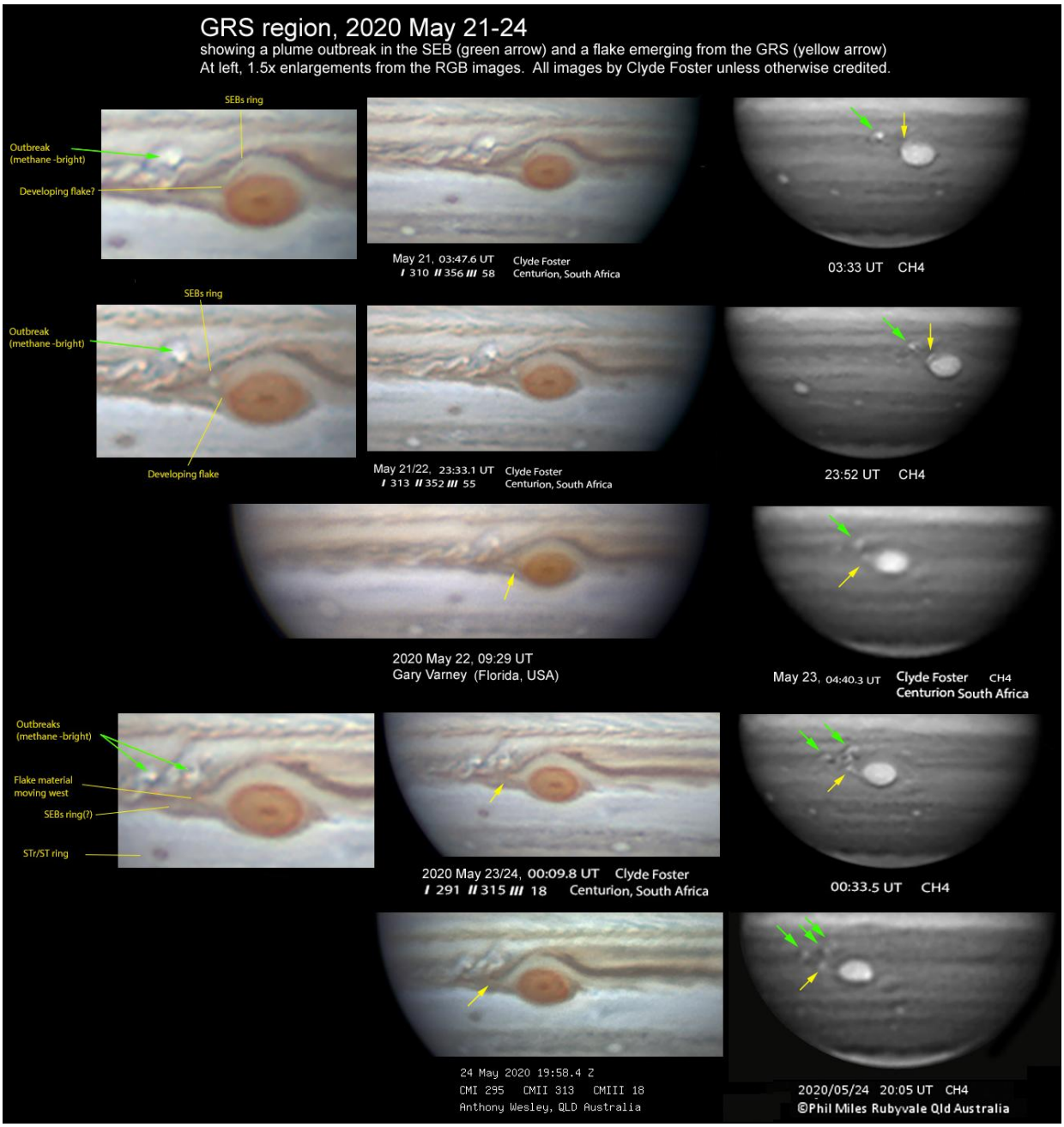


Figure 11. GRS region, 2020 May 21-24, in RGB and CH4, showing a plume outbreak in the SEB (green arrow) and a flake emerging from the GRS (yellow arrow). Images & annotations mostly by Clyde Foster. Also see **Animations B & C**.

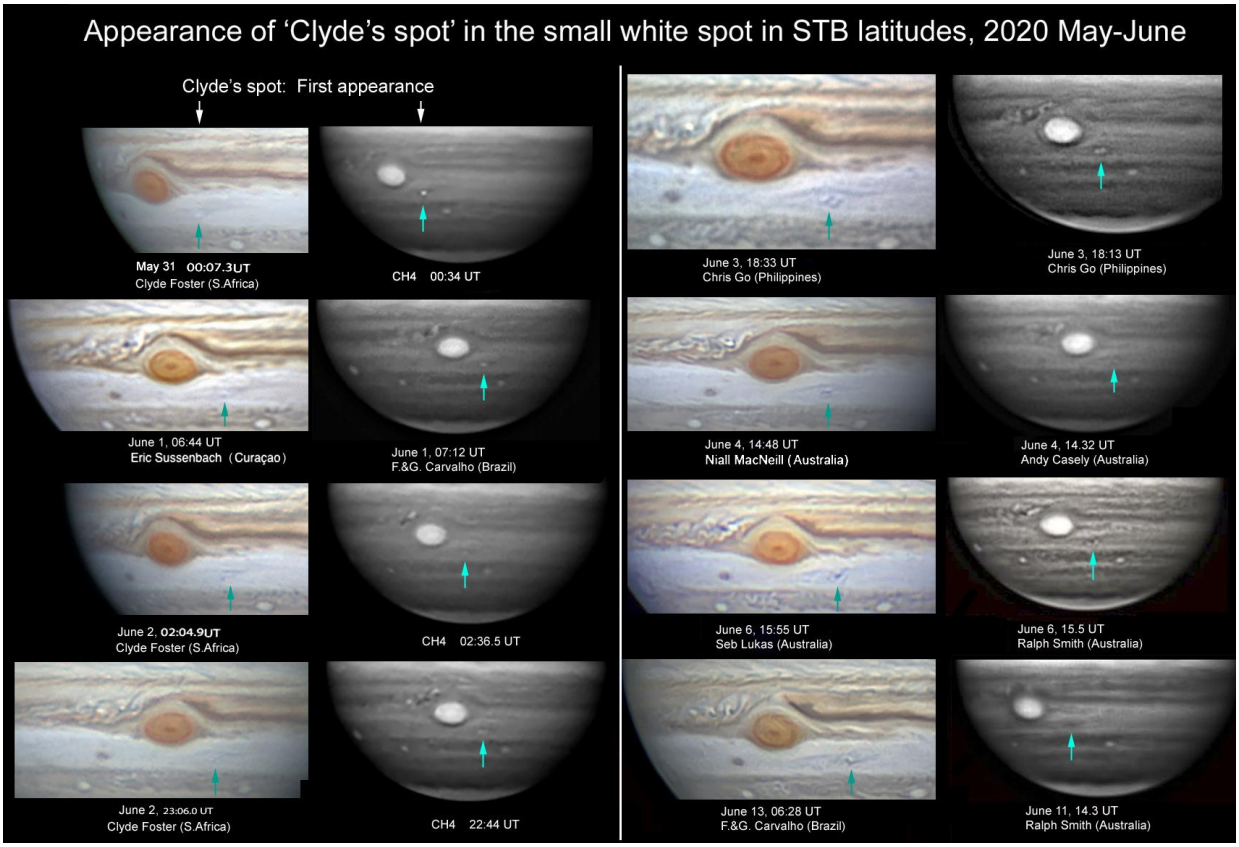


Figure 12. GRS region, 2020 May 31 to June 13, in RGB and CH4, showing the appearance and evolution of Clyde's spot. Also see **Supplementary Figure B** for a more extensive set of these images.

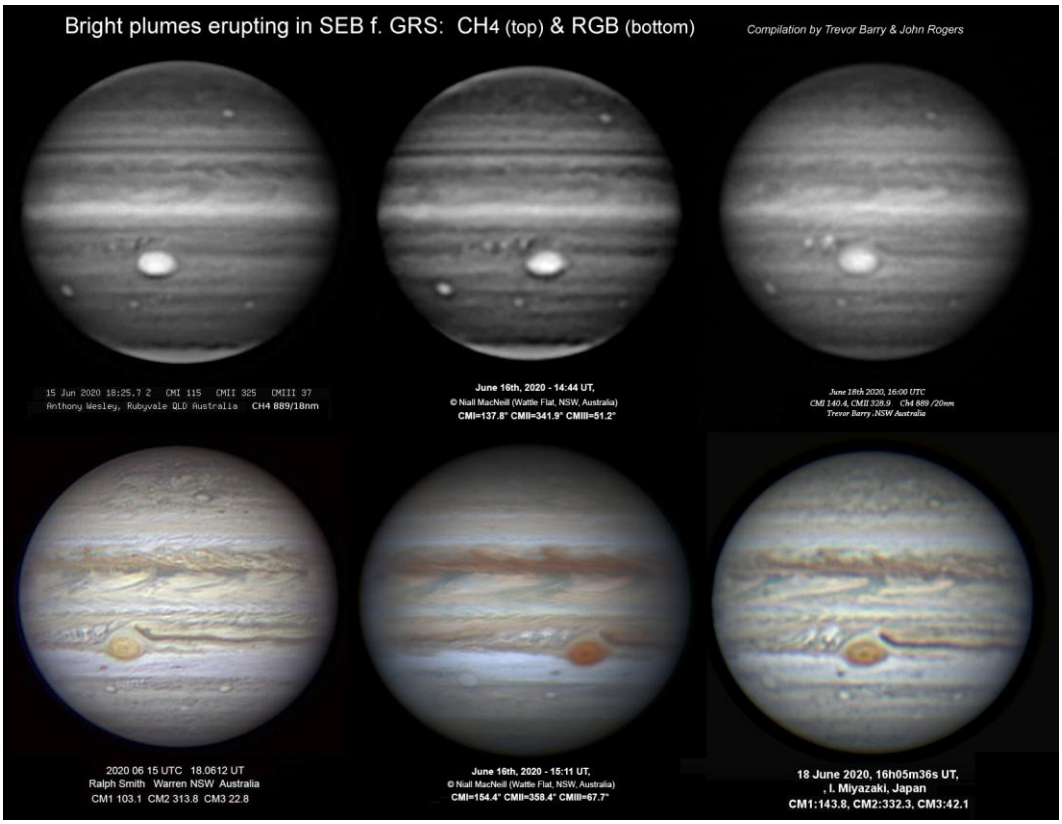


Figure 13. GRS region, 2020 June 15-18, in RGB & CH4, showing bright plumes erupting in SEB f. the GRS.

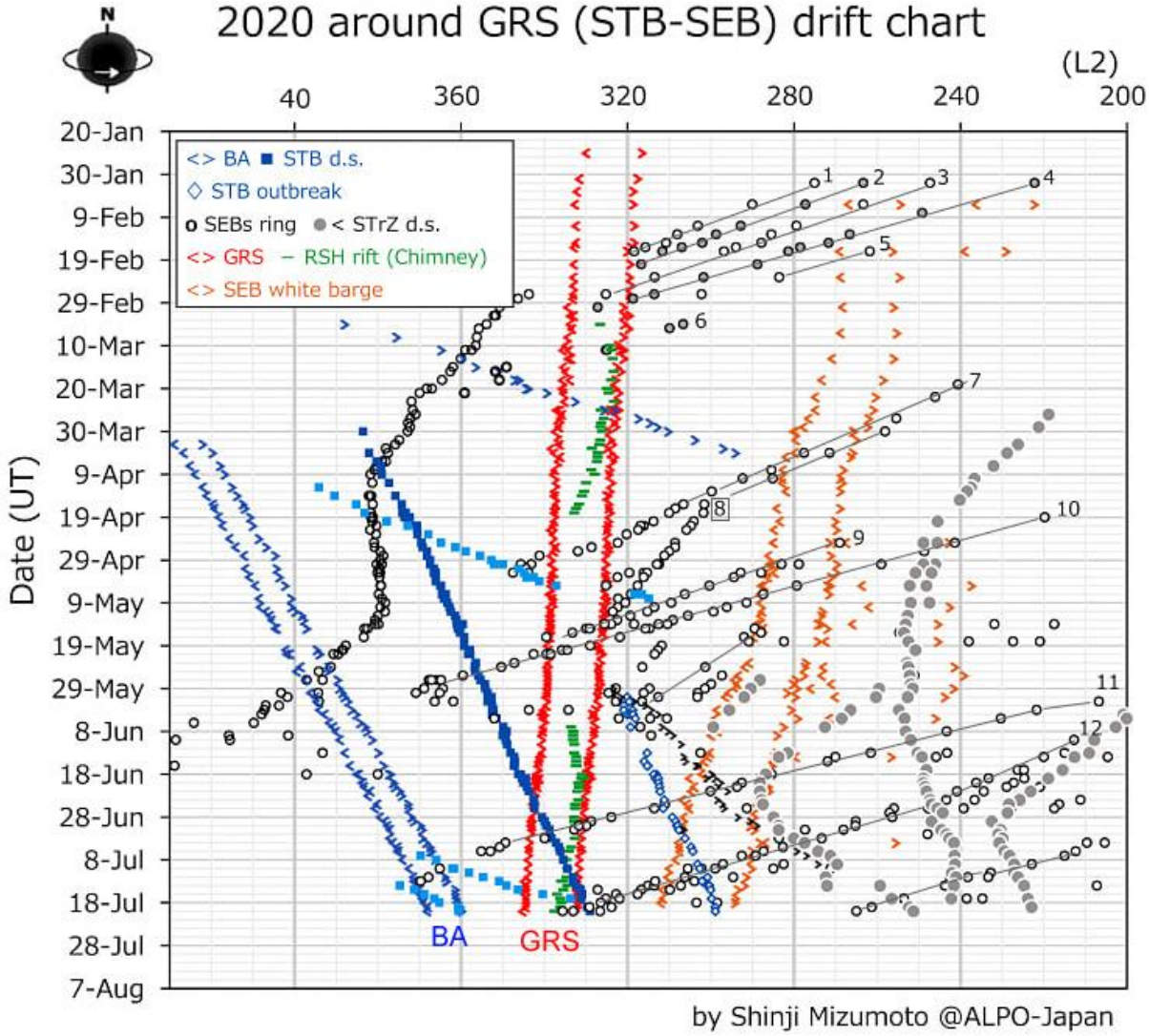


Figure 14. Longitude-vs-time chart of the features around the GRS, 2020 Jan.-July.

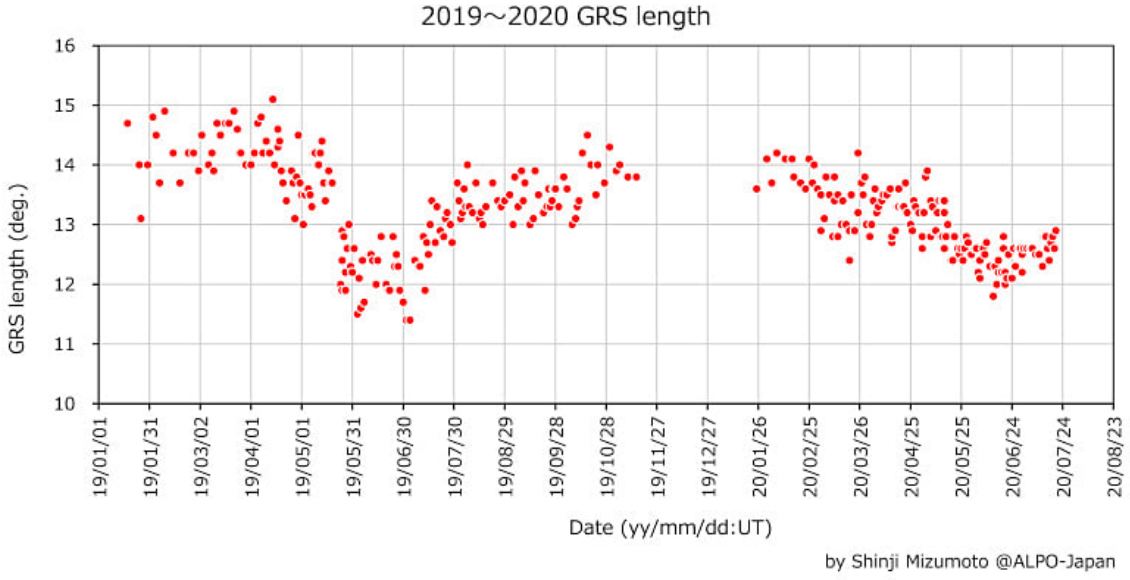


Figure 15. Length of the GRS, 2019 Jan. to 2020 July.

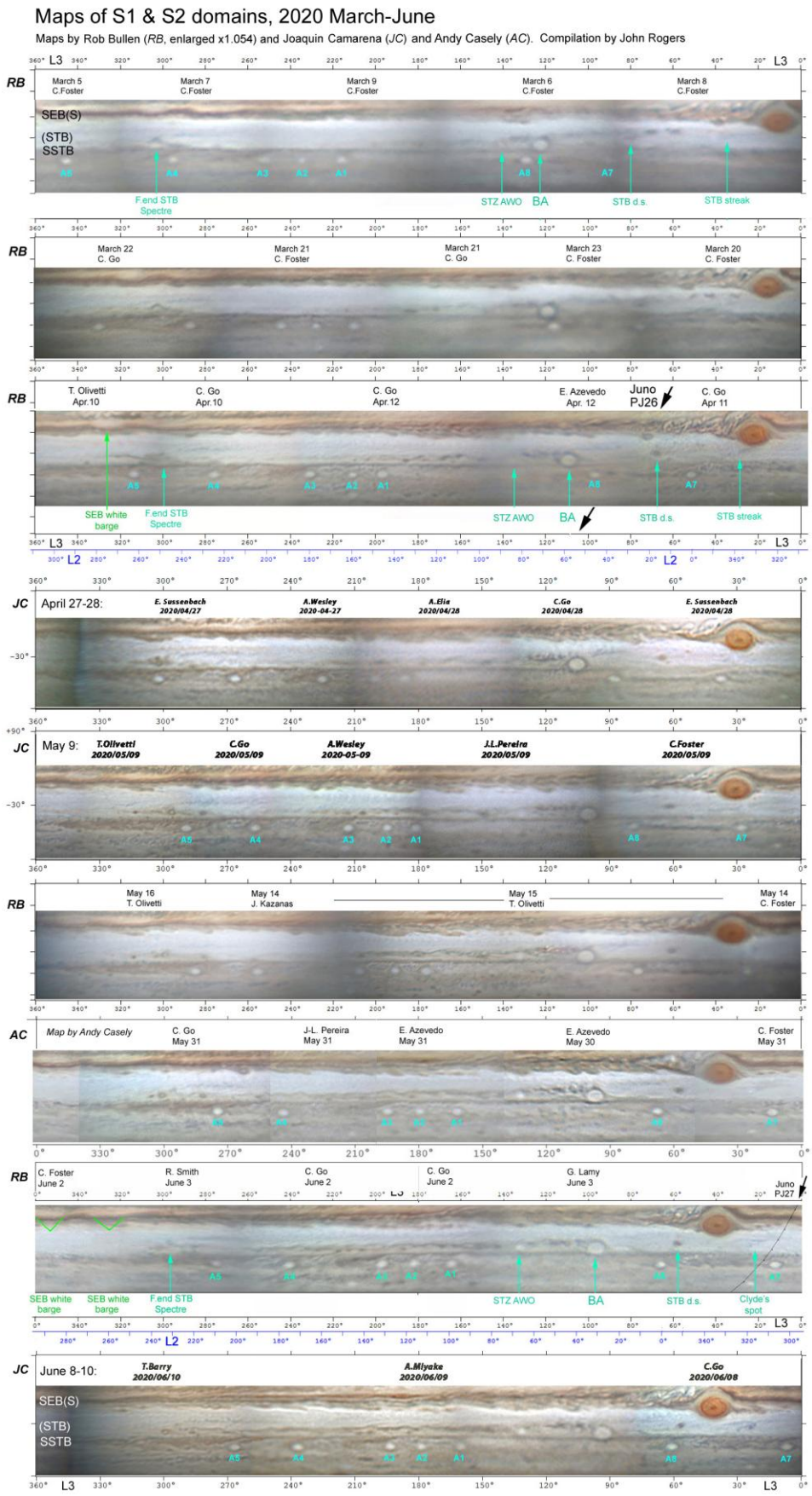


Figure 16. Set of maps from ~13 to 53ºS, covering the STropZ & S.Temperate & S.S. Temperate domains, 2020 March-June, aligned in L3. (Also see Figures 1 & 2.)

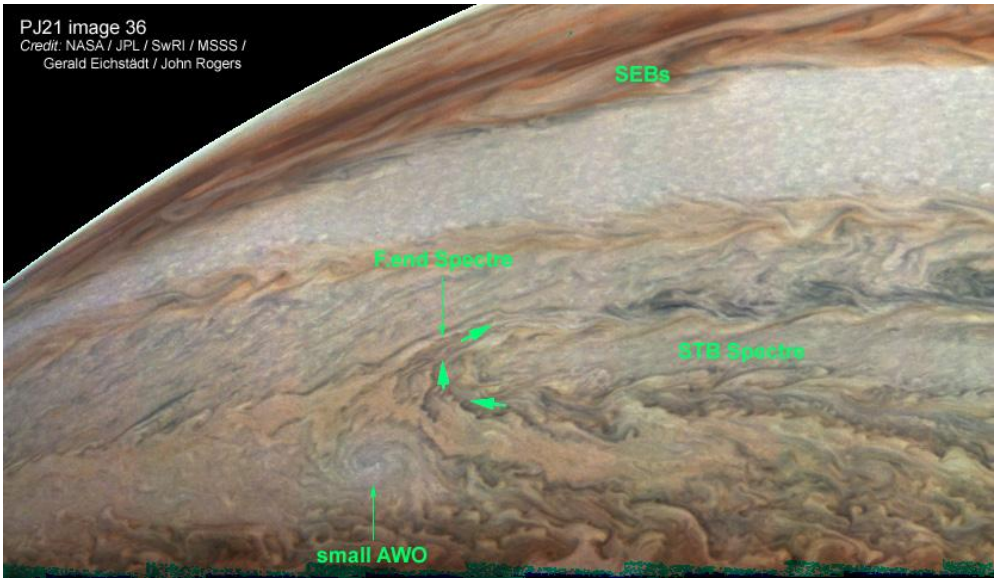


Figure 17. Closeup view of the f. end of the STB Spectre from JunoCam at PJ21 (2019 July 21), showing its cyclonic circulation.

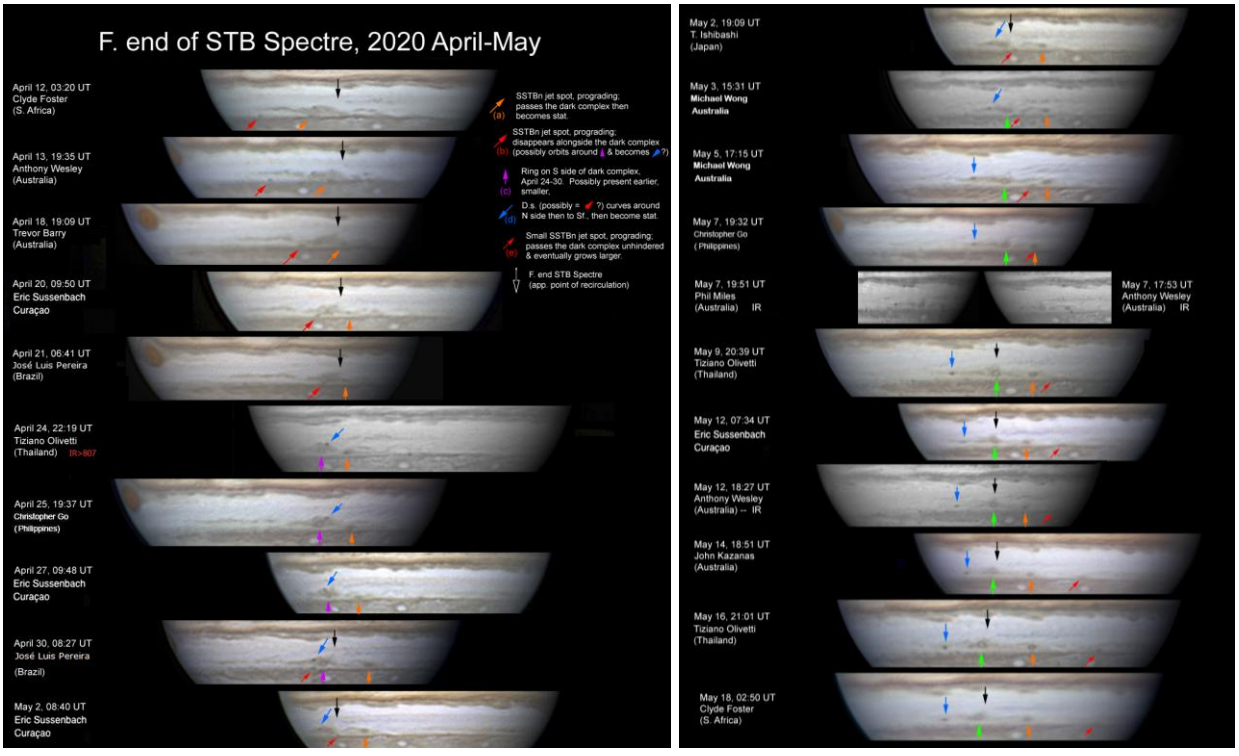


Figure 18. The f. end of the STB Spectre in 2020. Coloured arrows track various small spots in and around the complex, as described in the legend at top right.

Figures 19-22: In **Part III.**

Animations (GIF's):

Anim-A. Blink of two images 20 hours apart on May 12-13 (E.Sussenbach & C.Foster, animated by JHR). This is the quiet side of Jupiter, though it includes WSZ and the f. end of the STB Spectre.

Anim-B. Blink of two images 20 hours apart on May 21 (C. Foster). This includes the GRS with a developing flake and convective activity in the SEB f. it. Also shown in **Anim-C**:

Anim-C. The images from Figure 11, map-projected and animated by Andy Casely, showing the origin of a flake at the f. end of the GRS.

Anim-D. Blinking of RGB images with CH4 images that have been rotated in Photoshop for approximate alignment. All images by Chris Go, aligned by JHR. Note that the dark red-brown strip in the NEB and the pale ochre strip in the EZ are methane-bright. In RGB, arrows indicate AWOs and cyclonic 'ovals' in the NEB. In CH4, in the southern EZ, the dark blue arrow indicates a methane-bright spot fixed in L1, and cyan dots indicate the waves stationary in L3.
