Jupiter in 2025/26, Report no.4

John Rogers (2025 Dec.30)

Figures

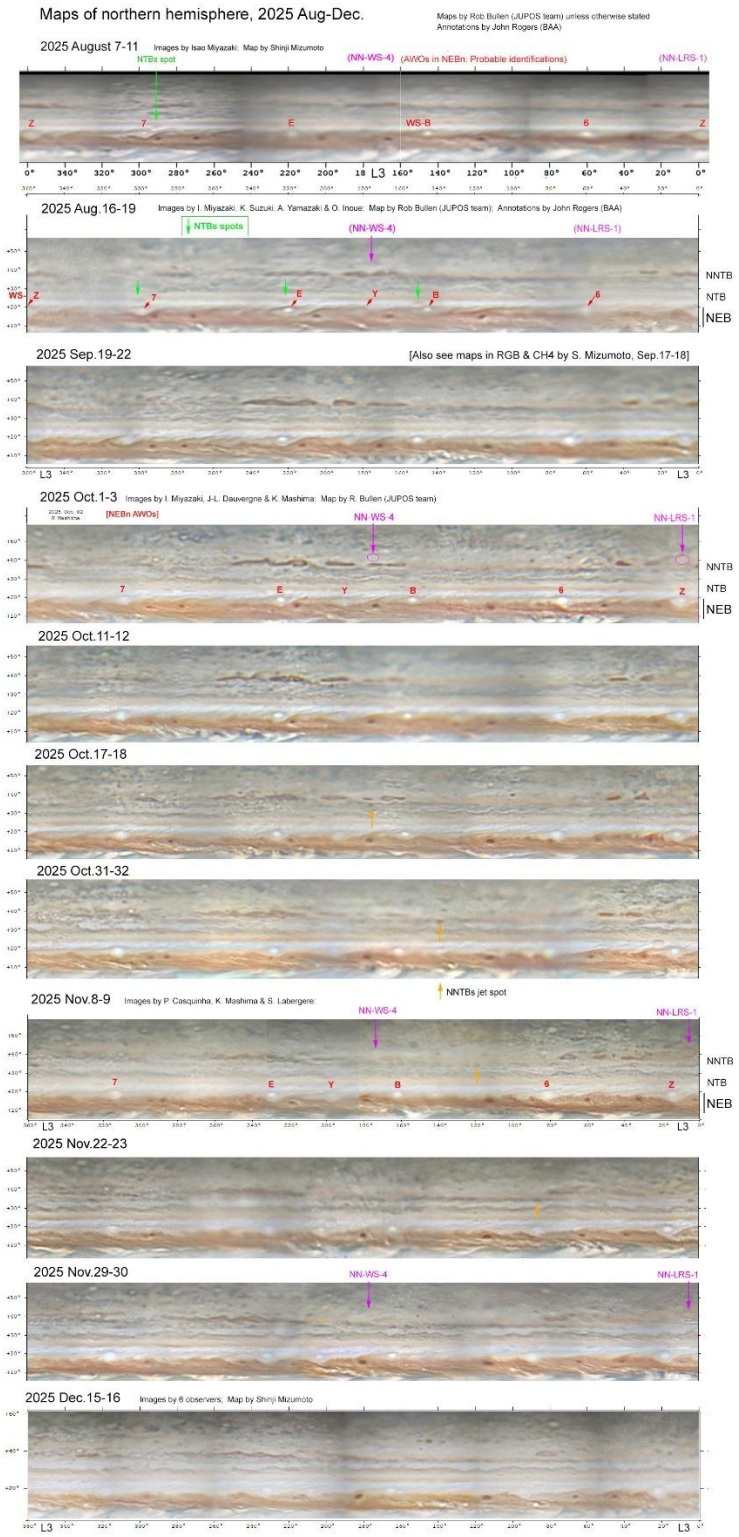

Figure 1. Maps of the northern hemisphere, aligned in L3.

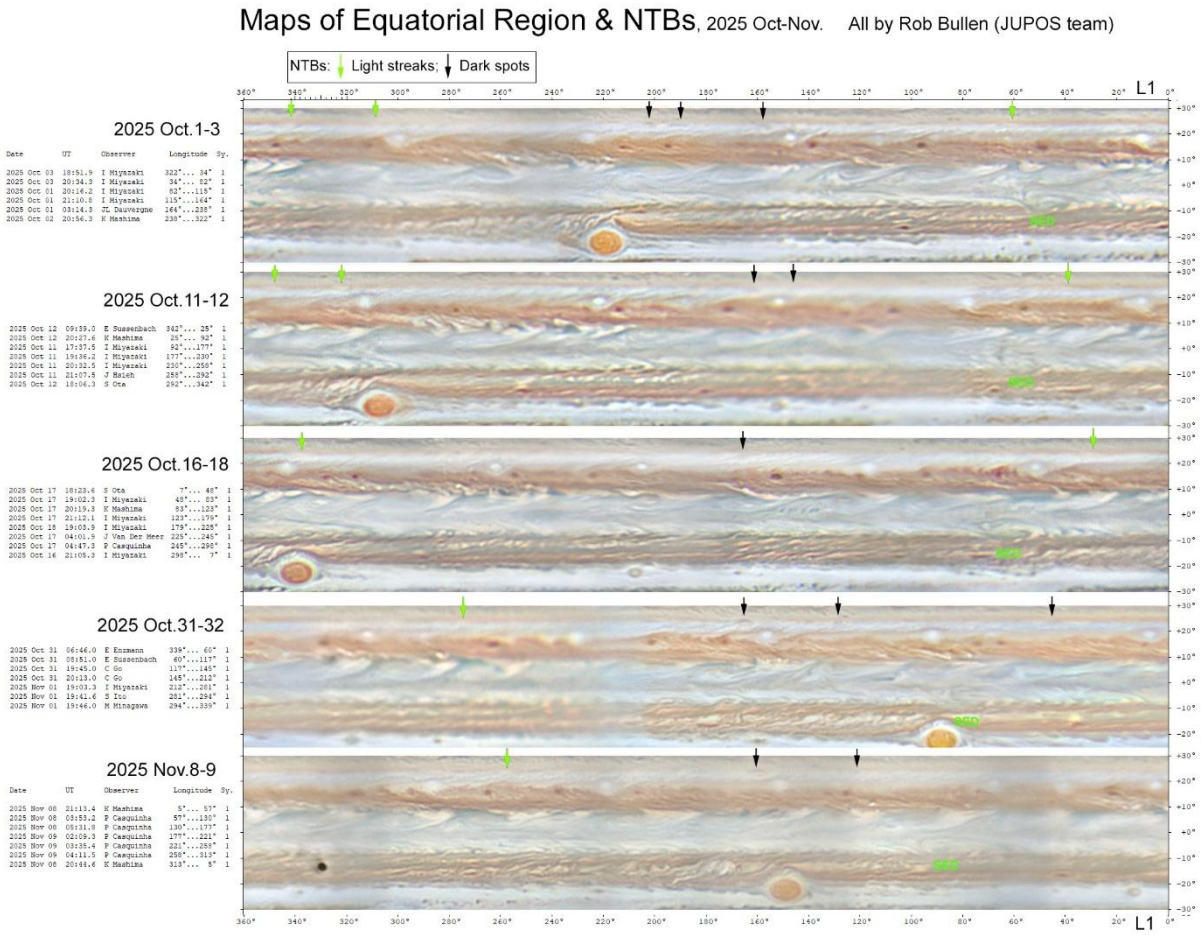

Figure 2. Maps of the equatorial region (and the NTBs jet), aligned in L1.

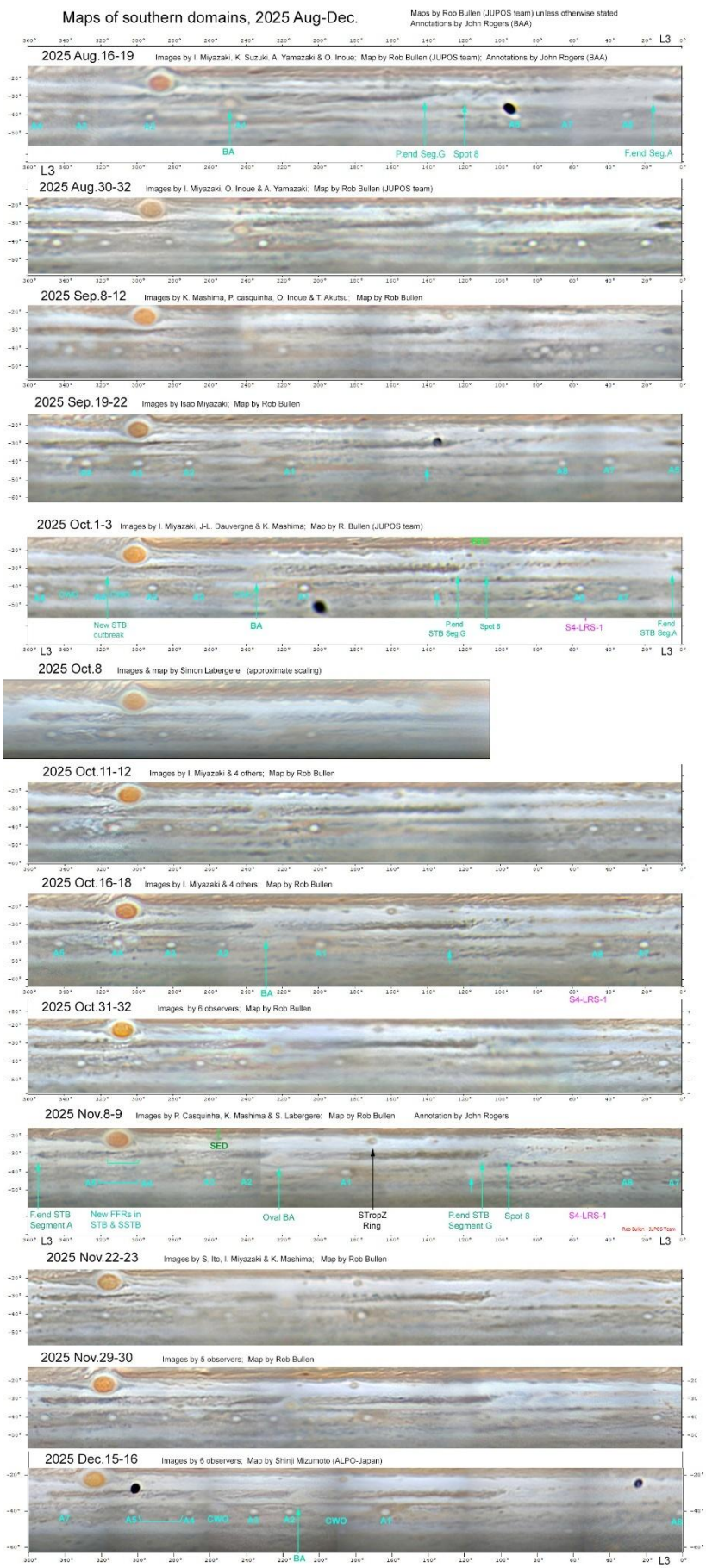

Figure 3. Maps of the southern domains, aligned in L3.

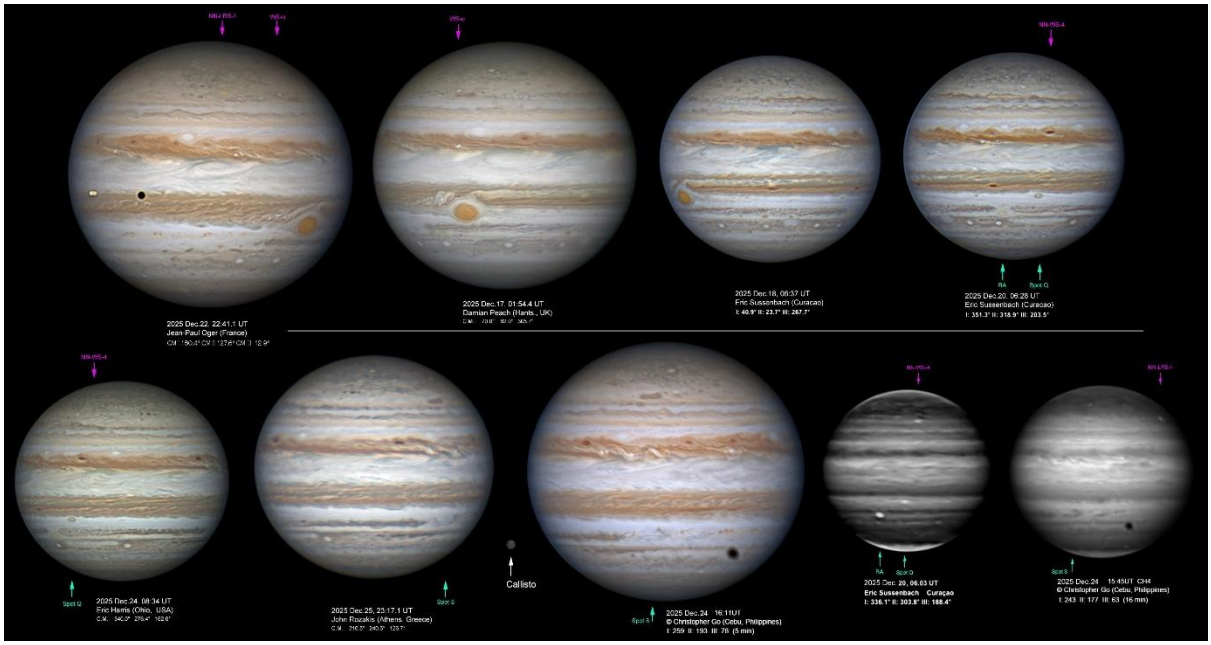

Figure 4. Some of the best images all around the planet, Dec.16-25, plus two methane-band images. Also note Io & shadow in the first images, and Callisto & shadow in the lower middle image.

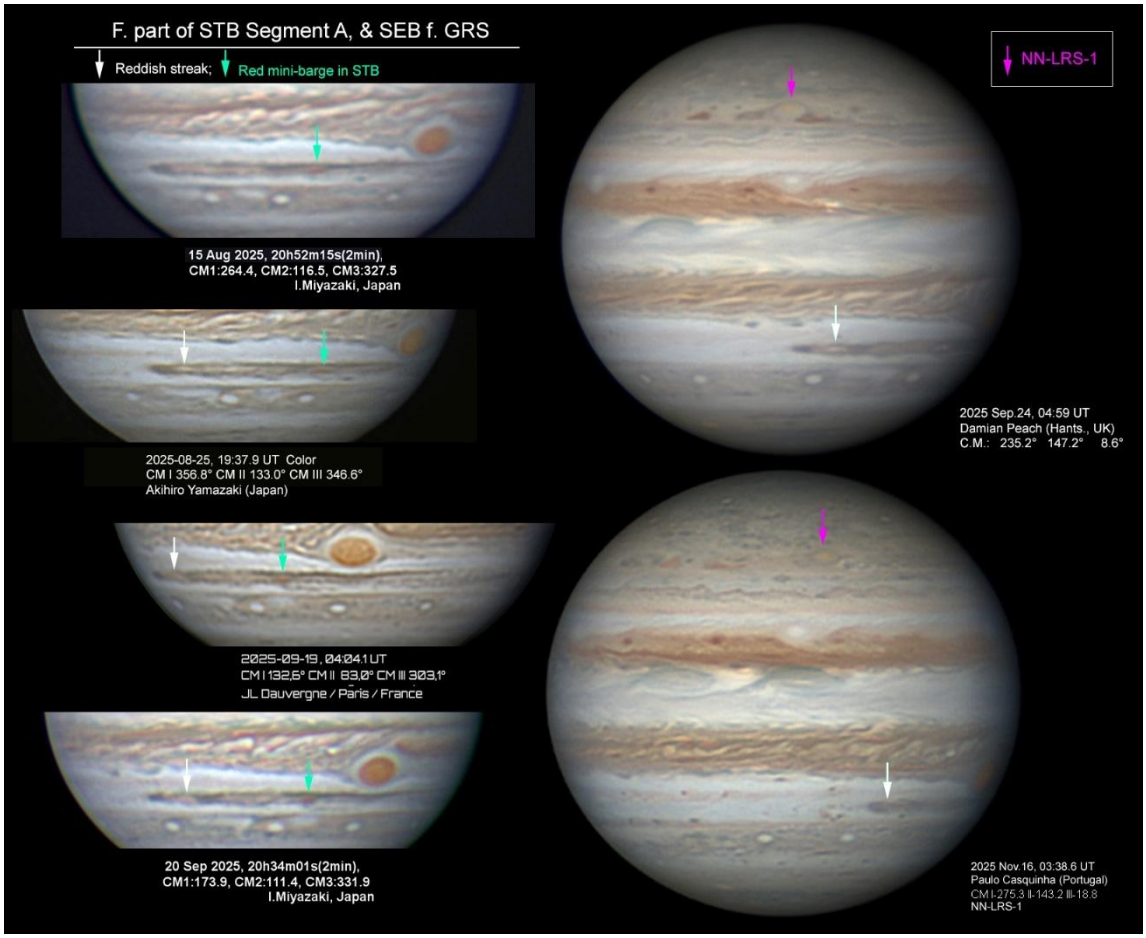

Figure 5. Images in 2025 Aug-Sep. (& one on Nov.16) showing NN-LRS-1, and the f. part of STB Segment A containing a light reddish streak and a strongly red mini-barge (in which a convective outbreak occurred on Sep.22).

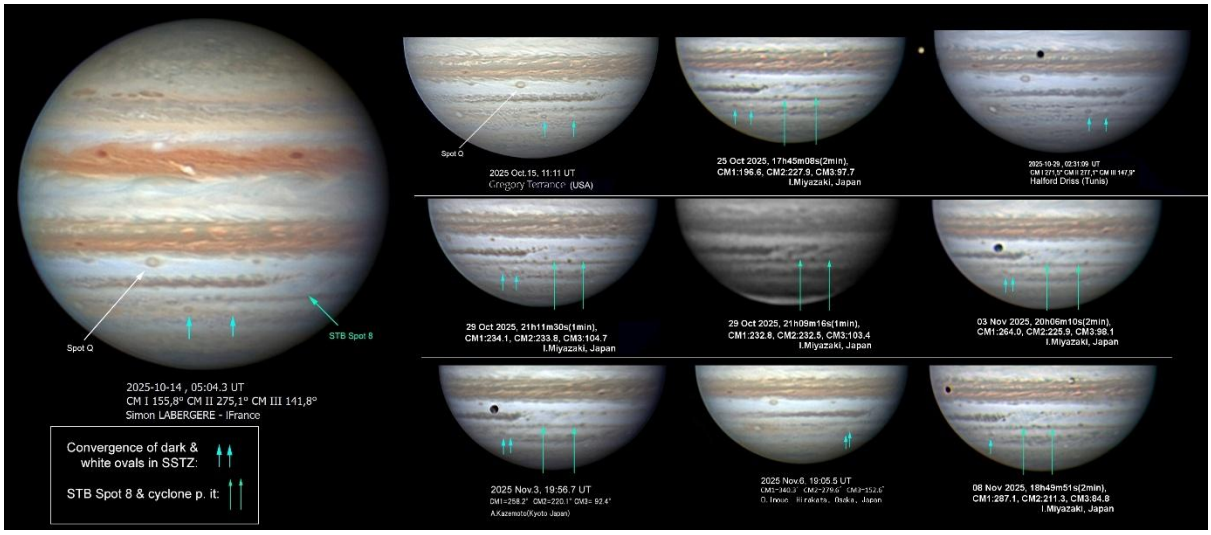

Figure 6. Images in Oct-Nov. showing STropZ Spot Q, STB Spot 8 (and the smaller cyclone p. it), and small dark and white ovals converging in the SSTZ; only the dark one survived after Nov.8, with altered course (see JUPOS chart). Satellite transits include Ganymede on Nov.3.

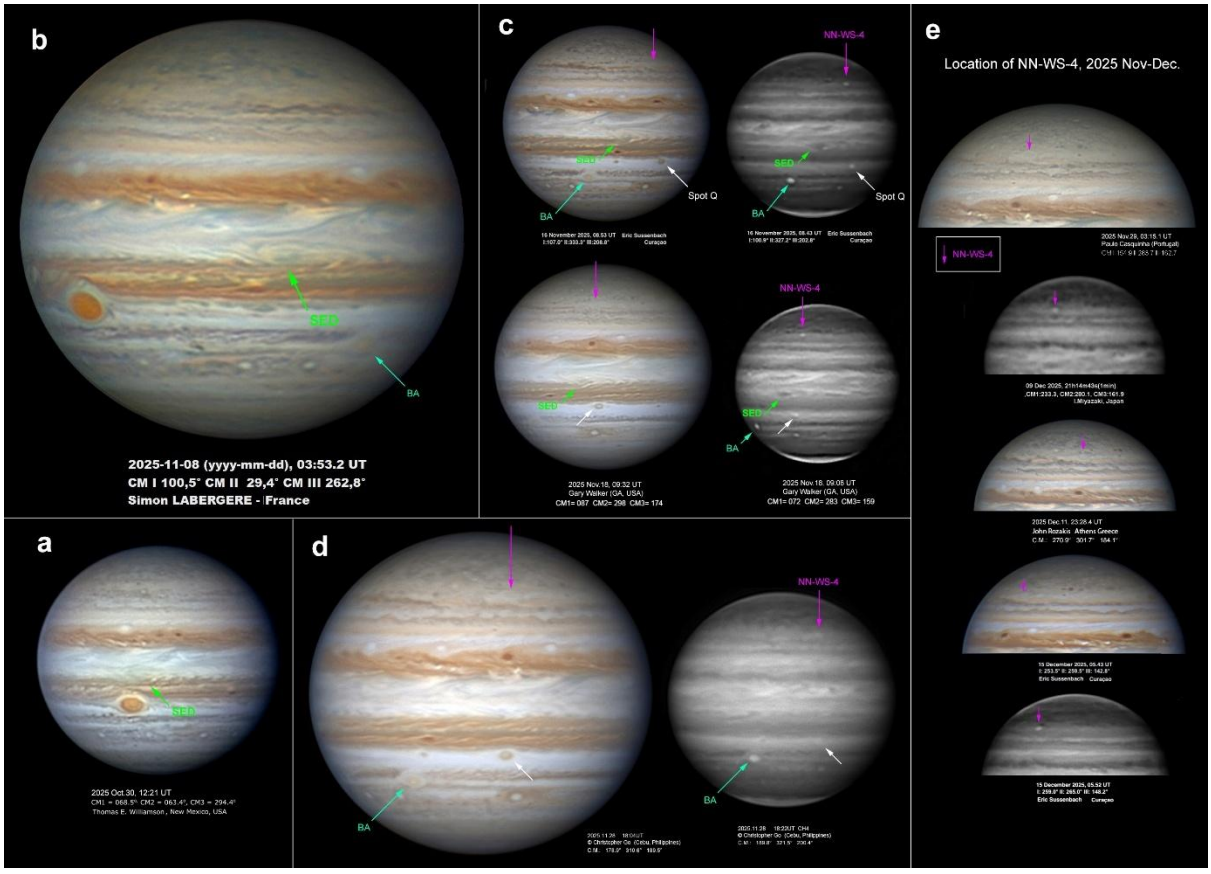

Figure 7. Images in 2025 Nov-Dec. showing the SED (a,b,c), Spot Q (c,d), and NN-WS-4 (c,d,e). The SED was still conspicuously dark greenish-blue as it passed the GRS on Oct.30 (a) & on Nov.8 (b), but less prominent as it began to pass Spot Q on Nov.18 (c), although its core was still very methane-dark. After this the SED became difficult to discern. Spot Q (white arrow) is a distinct brown oval, weakly methane-bright (c,d). NN-WS-4 (magenta arrow) is moderately methane-bright throughout, but it was invisible in RGB images (c) until late Nov. when hi-res images began to reveal it as a tenuous bluish ring (d,e).

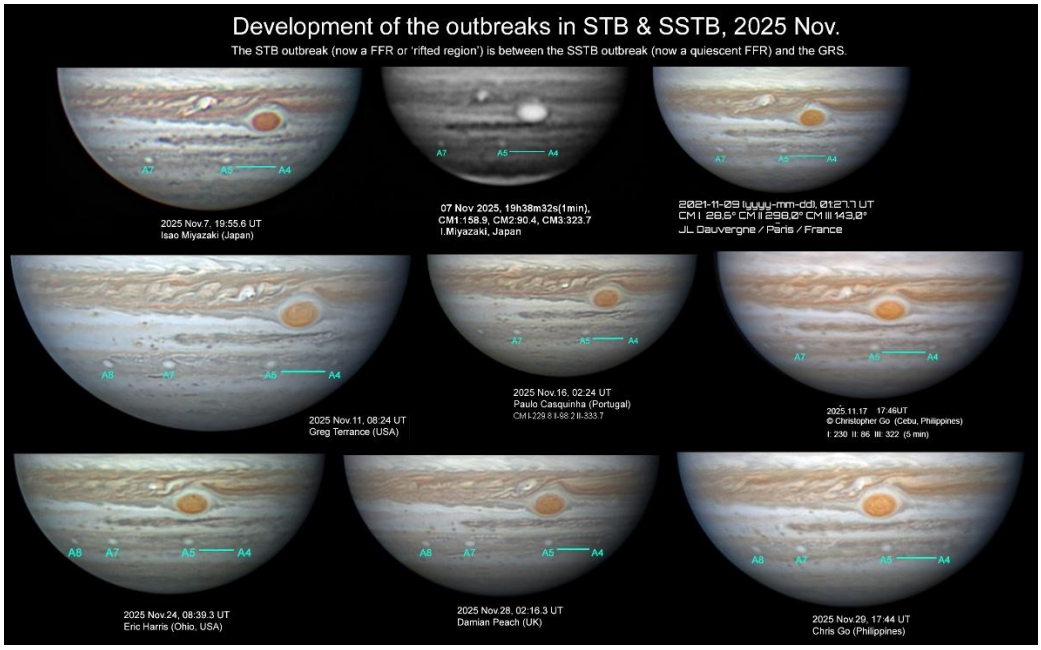

Figure 8. Images in Nov. showing the GRS and the two new convective outbreaks in the STB (started Sep.22) and SSTB (started Oct.4). A cyan line underlines the SSTB outbreak, and the STB outbreak lies between it and the GRS. Earlier stages were shown in Report no.2. SSTB AWOs are numbered.

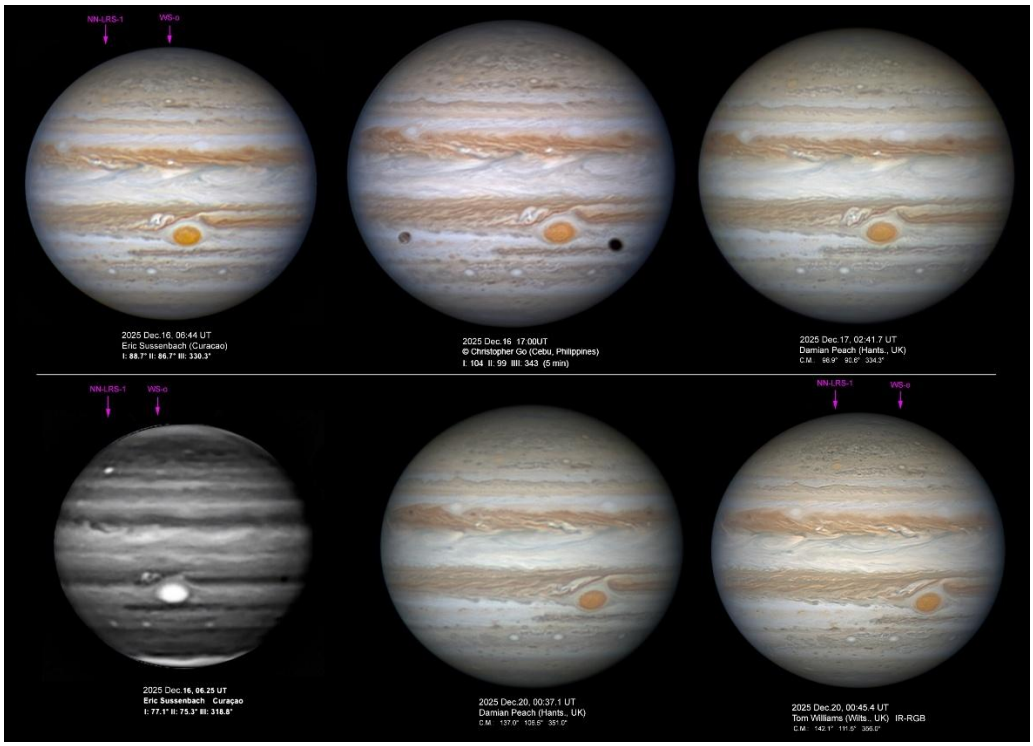

Figure 9. Hi-res images including the GRS, Dec.16-20. The first three images were taken at ~10-hr intervals and could be derotated to make an animation like that of Nov.29-30. Note some fast-moving streaks on the NTBs jet, and the developing bright swirl in the post-GRS disturbance in the SEB, which is methane-bright (see fourth image). Details within the GRS are changing but are not distinct enough to measure its rotation. Ganymede and its shadow are in transit in the second image. The last two images were taken by two UK observers almost simultaneously, thus validating the fine details; the one by Tom Williams shows the value of the new technique he has adopted for combining near-infrared resolution with RGB colour [Ref.1].

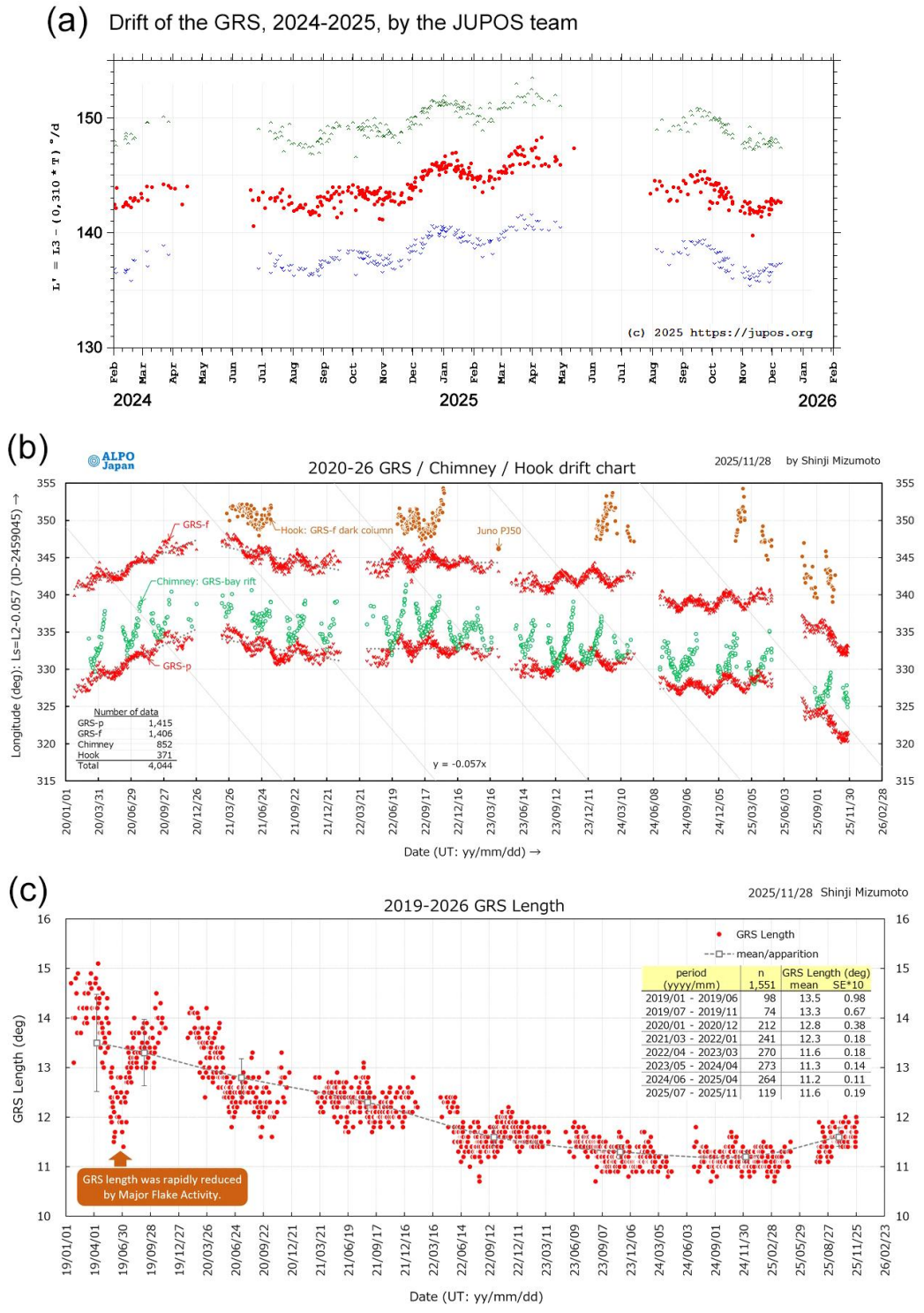

Figure 10. Charts of the GRS longitude (showing p. and f. ends), (a) by the JUPOS team, in a system moving at +0.93 deg/30d in L2; (b) by Shinji Mizumoto of the ALPO-Japan, in a system moving at +1.71 deg/30d in L2. The usual 90-day oscillation is obvious, and the acceleration during the latest solar conjunction. Mizumoto also pays careful attention to the intermittent phenomena of the 'Hook' (dark band from the SEB around the f. and S sides of the GRS, which appears at intervals of 1-2 years, and generates a S. Tropical Band at the p. side) and the 'Chimney' (bright white rift in the rim of the Red Spot Hollow, which appears in synchrony with the 90-day oscillation). (c) Length of the GRS, by Mizumoto.