Jupiter in 2012/13: Interim report no.3 (*2012 Sep.20)*
Progress of Jupiter's great northern upheaval, 2012 July-August.

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FIGURE LEGENDS & THUMBNAIL COPIES

South is up in all figures.

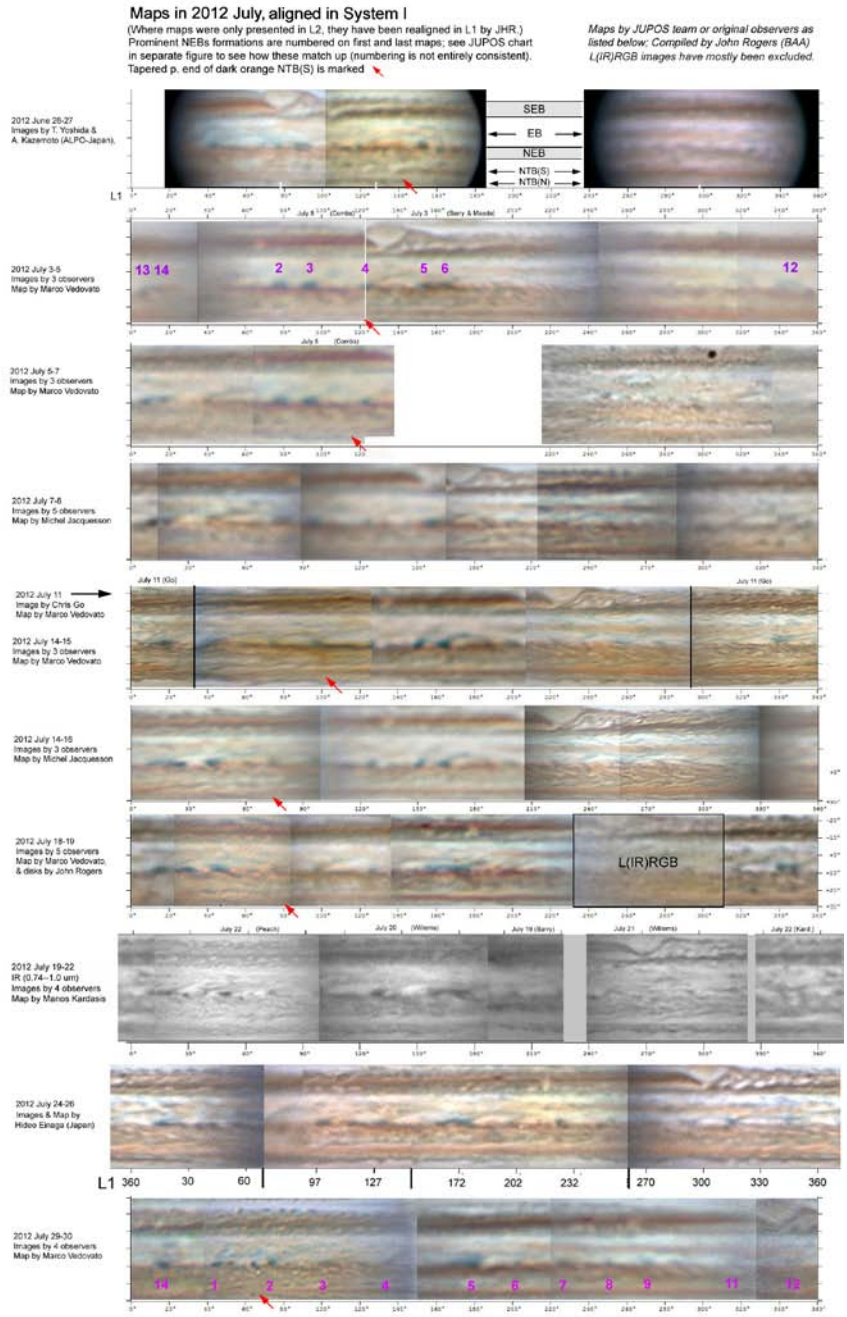

FIG.1: Maps in 2012 July, aligned in System I to show features in EZ, NEB, and NTB(S).

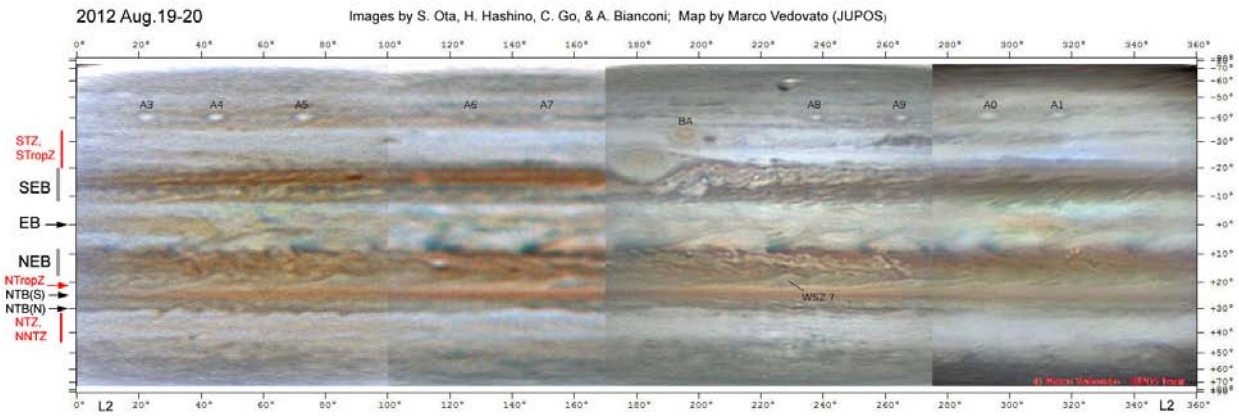

FIG.2: Map of the whole planet on 2012 Aug.19-20; images by 4 observers were mapped by Marco Vedovato.

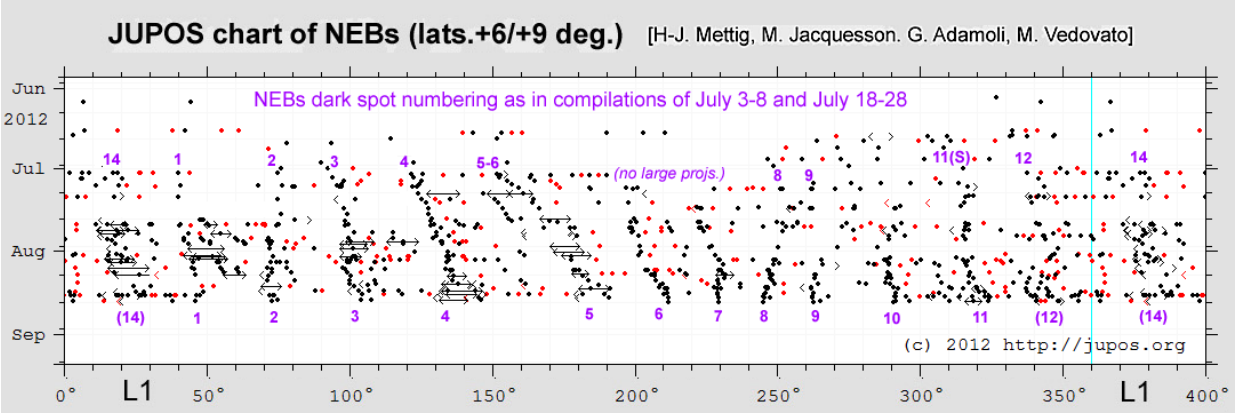

FIG.3. JUPOS chart of the NEBs (lats.6-9 deg.N): black = dark spots, red = white spots. Tracks of 13 persistent dark spots ('projections') are evident. They are numbered as in previous compilations of images in early and late July, as in Fig.1. Because these were interim compilations, the numbering is not entirely consistent, but it serves to identify features in images.

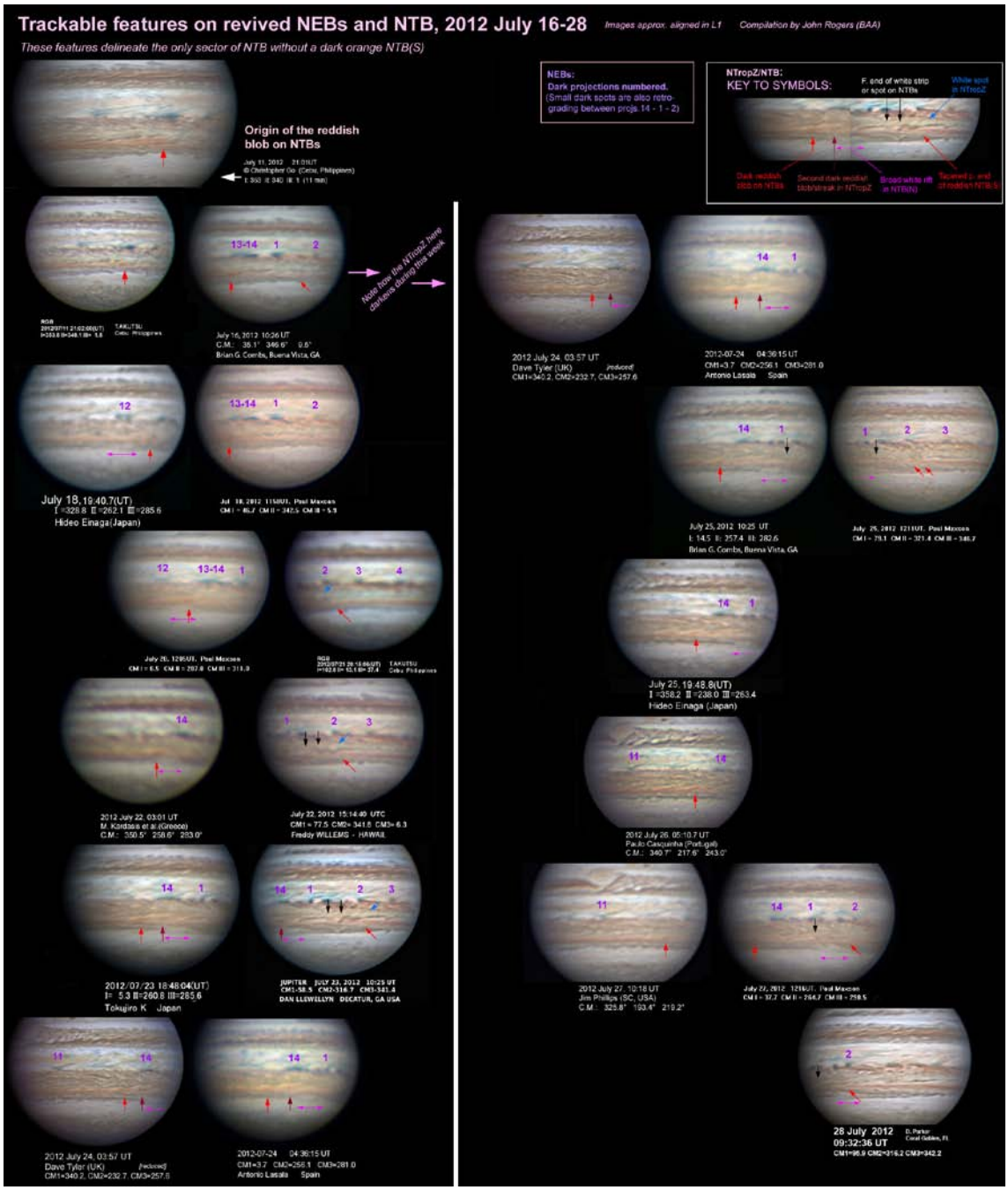

FIG.4: Set of images of one longitude range, July 16-28, to show trackable features on the NEBs and NTBs. NEBs projections are numbered as in Figs.1 & 3. The NTB includes the gap, flanked by the streaks which round up to form the reddish blob, and by the p. end of the reddish NTB(S). Reddish shading is continuing to invade the NTropZ; it darkens in this sector within just one week.

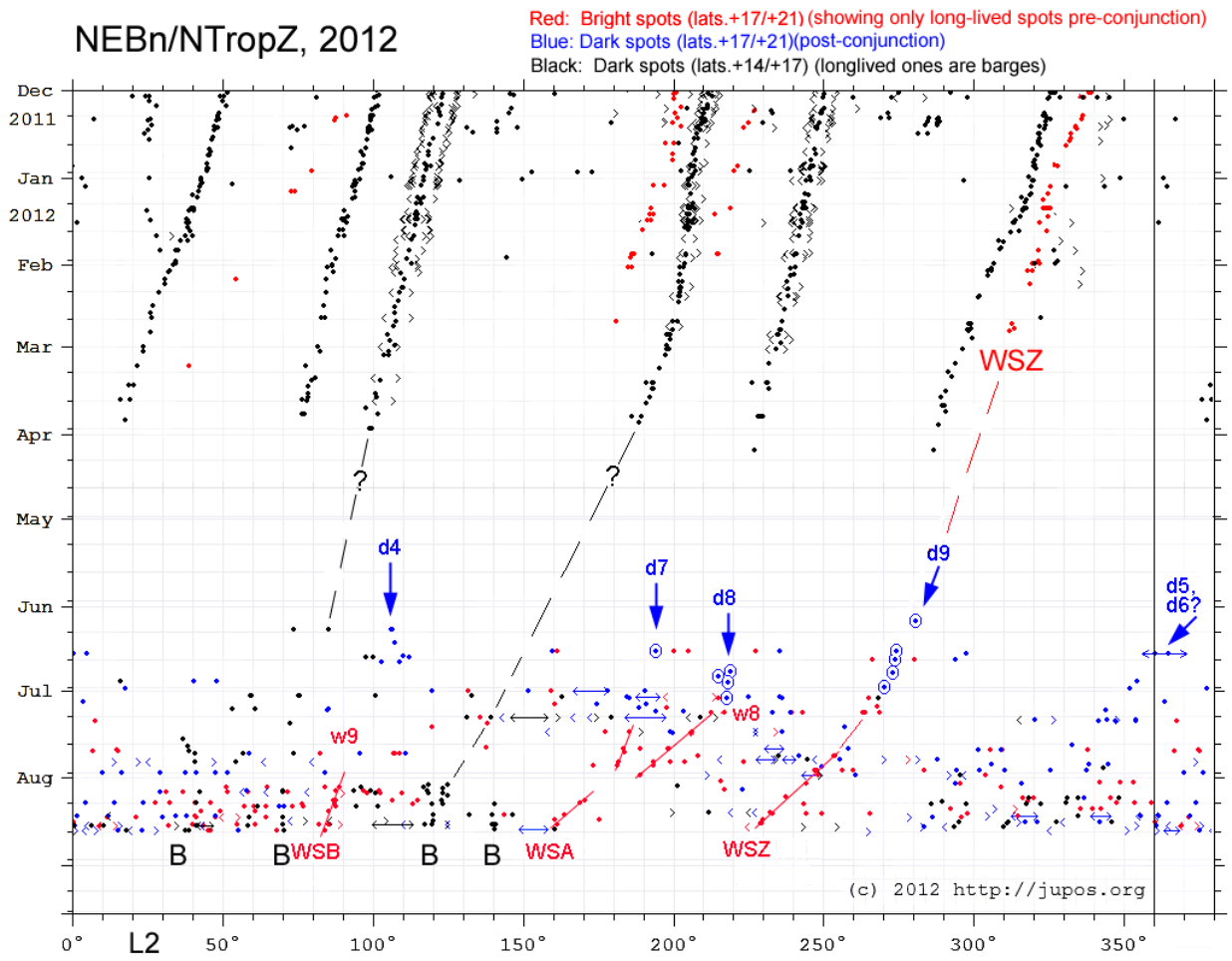

FIG.5. JUPOS chart of the NEBn/NTropZ (lats.14-17 and 17-21 deg.N). Note how most of the barges (black tracks) and AWOs (red tracks) from 2011 disappeared during the chaos of NEB Revival, but the 5 dark grey spots then seen in the chaotic NTropZ (blue arrows: d4 to d9) mostly then converted intonew or revived AWOs (red tracks: WSA, WSB, WSZ). Barges appear to be re-forming (marked B).

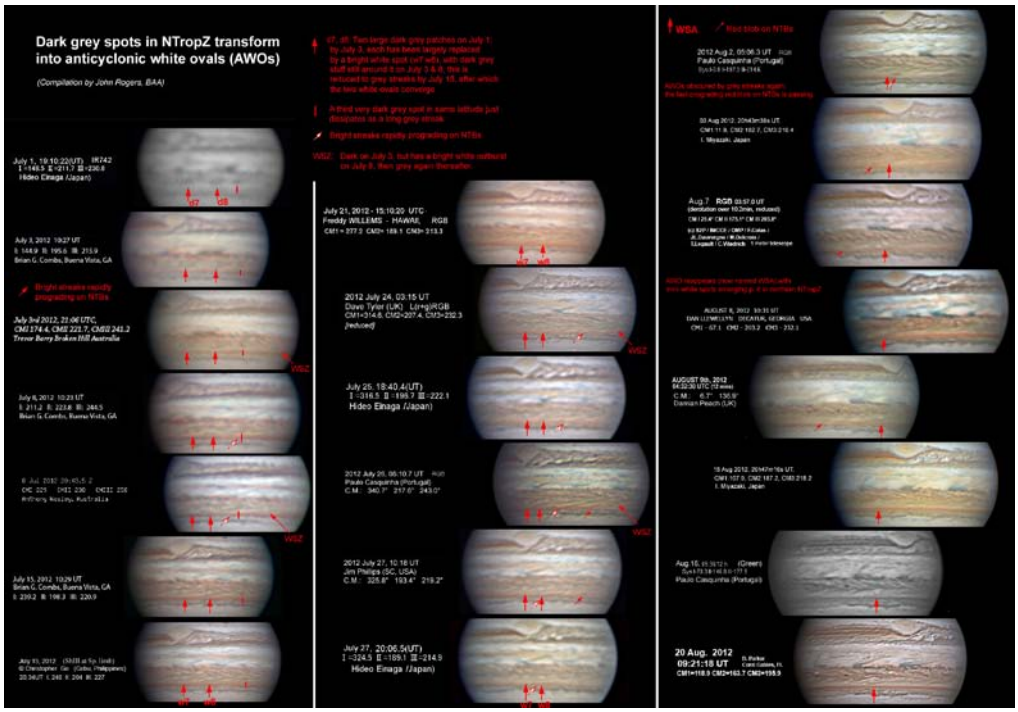

FIG.6. Images showing how dark grey spots d7 and d8 in the chaotic NTropZ converted into white spots (labelled w7, w8) in early July, which converged, disappeared within grey streaks again, and then reappeared in early August as a single white spot, WSA. Some images also show white spot Z, near the f. limb, often appearing as a dull grey spot. Another very dark grey spot in the same latitude just dissipated as a long grey streak. Meanwhile, several short-lived bright streaks can be seen rapidly prograding on NTBs.

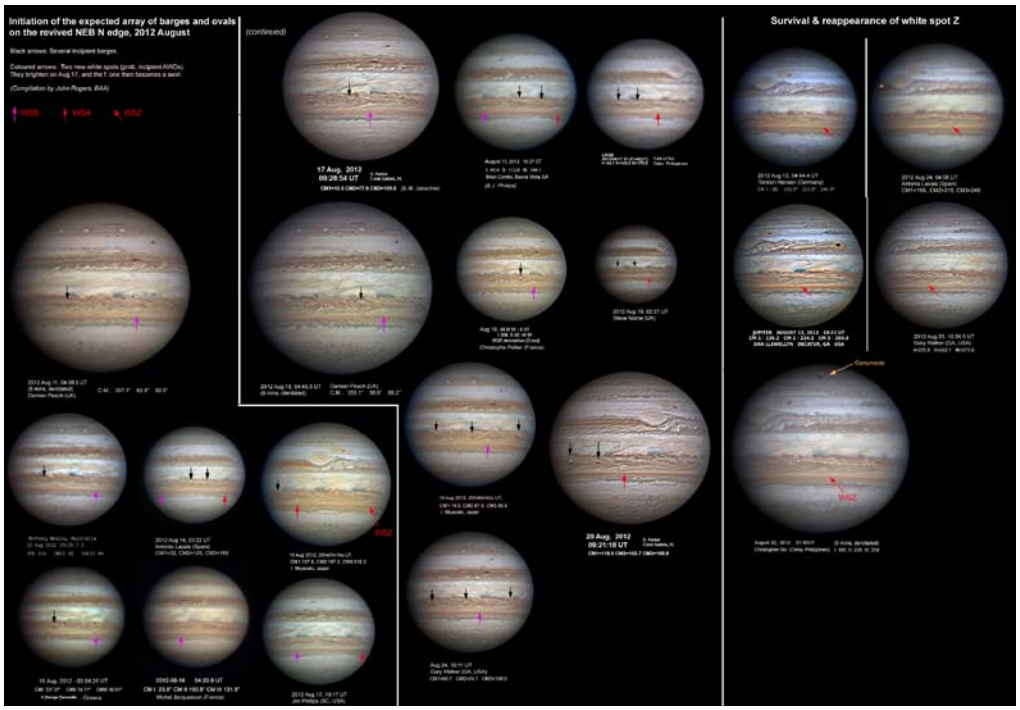

FIG.7: Images continuing the sequence from Fig.6, in 2012 August, showing the further history of AWOs (purple & red arrows), and the origins of barges in the NEBn (black arrows). This includes some of the best images yet taken in this apparition; and does not include all available images.

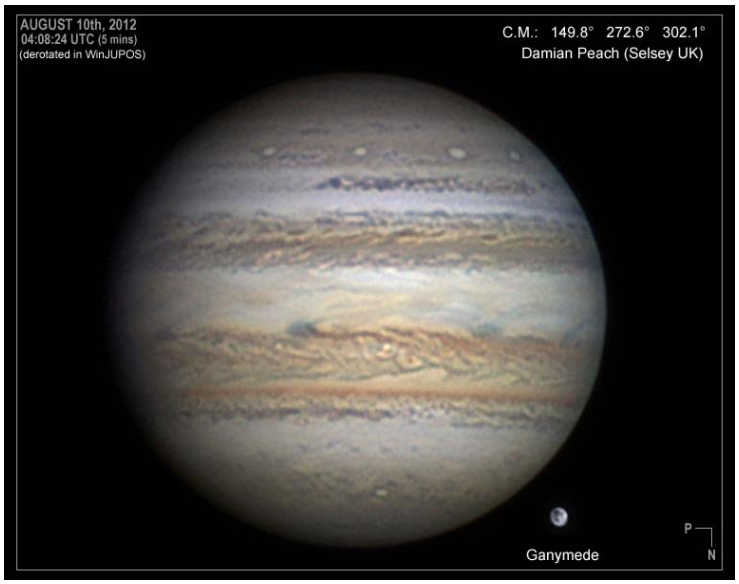

FIG.8: One of the most detailed images yet taken in this apparition, on 2012 Aug.10 by Damian Peach. This shows the complex texture of streaks across the whole NEB and NTropZ, and miniature rifts along the mid-NTB, whereas the orange NTB(S) is entirely diffuse. Ganymede is also shown (brightened). Like other observers this year, Peach has made use of the new de-rotation routine in WinJUPOS to enable a long integration (5 minutes) corrected for the planet's rotation. (Also see his image from Aug.11 in Fig.7.)

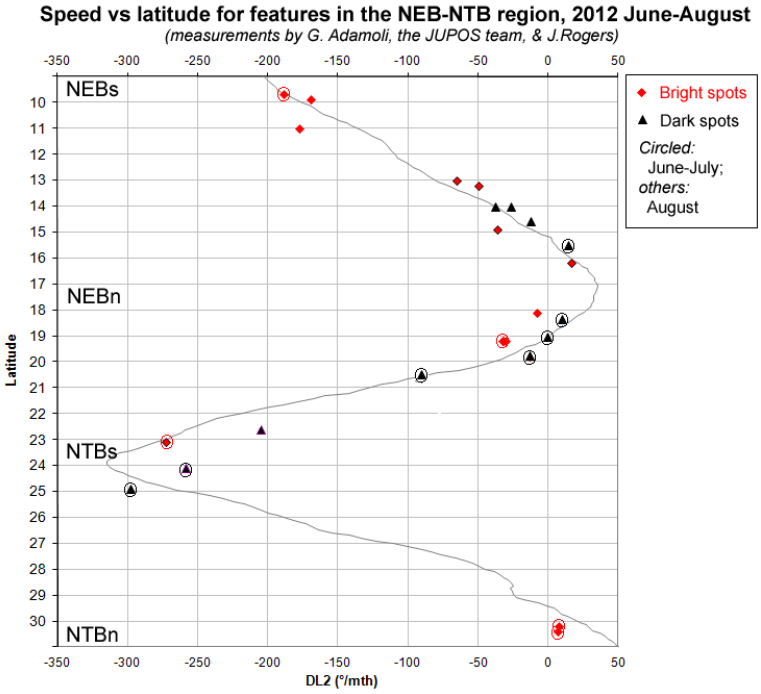

FIG.9: Chart of speed vs. latitude for features tracked in the NEB-NTropZ-NTB region. The results fit closely to the zonal wind profile measured by Cassini (continuous line: Porco et al., 2003), indicating that the zonal wind profile has not changed, except perhaps at the peak of the NTBs jet. Points from June-July (at the height of the disturbance) are distinguished from points from August (when it seems to be quietening down); although neither set alone is sufficient to establish the profile, there does not seem to be a systematic difference between them.