

Jupiter's South Temperate Domain, 2015-2018

John Rogers (BAA)*

MINI-FIGURES

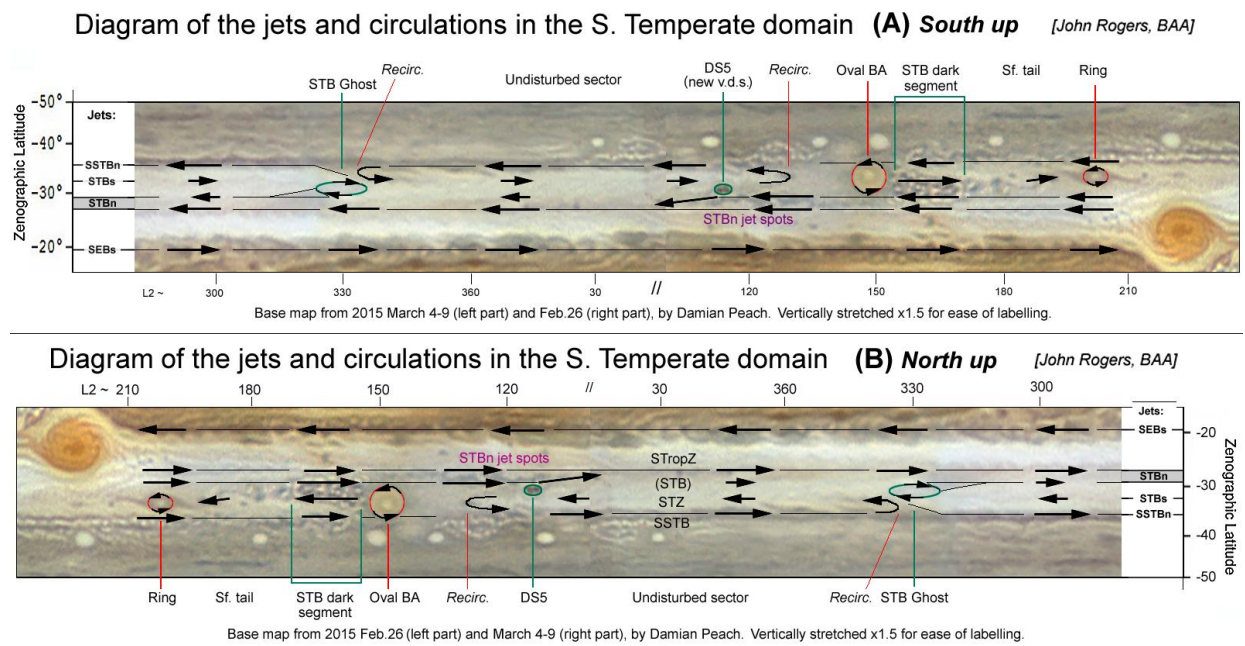


Figure 1. Diagram of the jets and circulations in the S. Temperate domain.
(A) South up, matching JUPOS charts (= Fig.2 of Ref.3); **(B)** North up, matching other maps in this report.

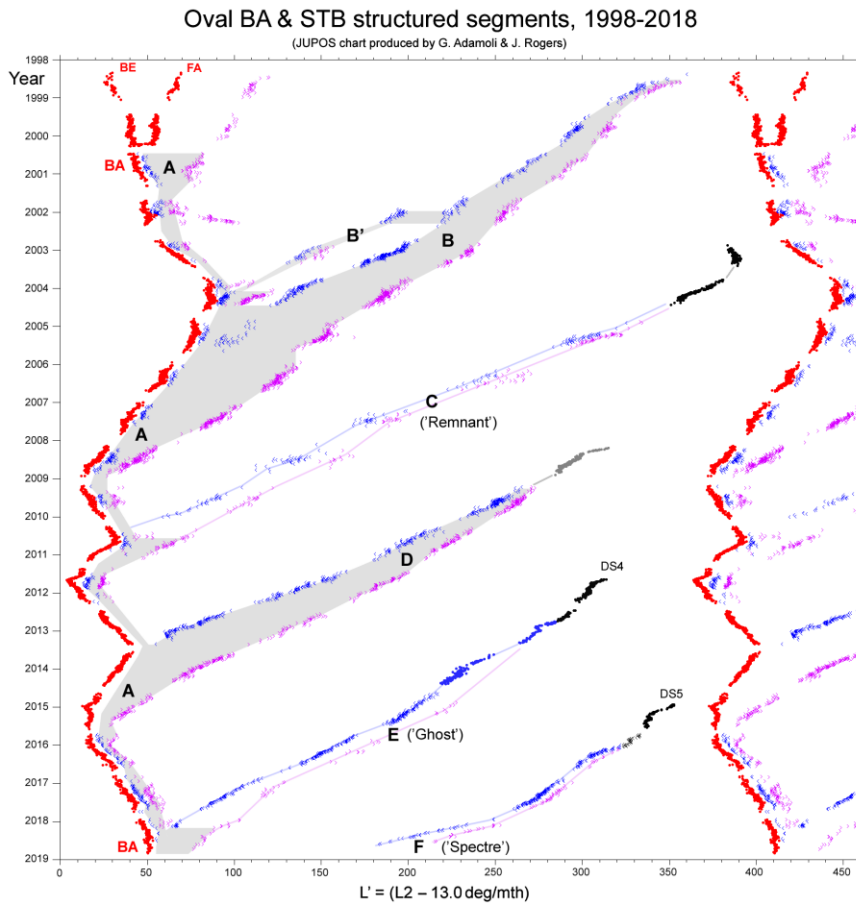


Figure 2. Summary JUPOS chart of oval BA & STB segments, 1998-2018.

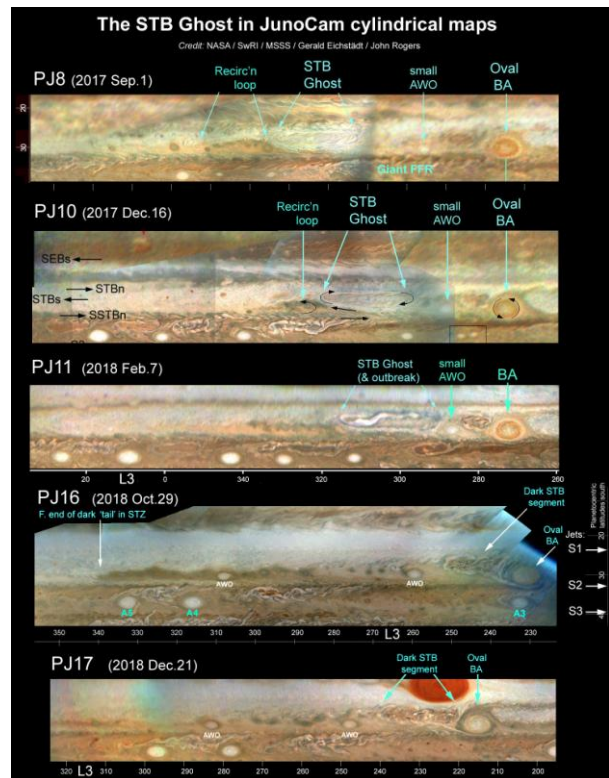
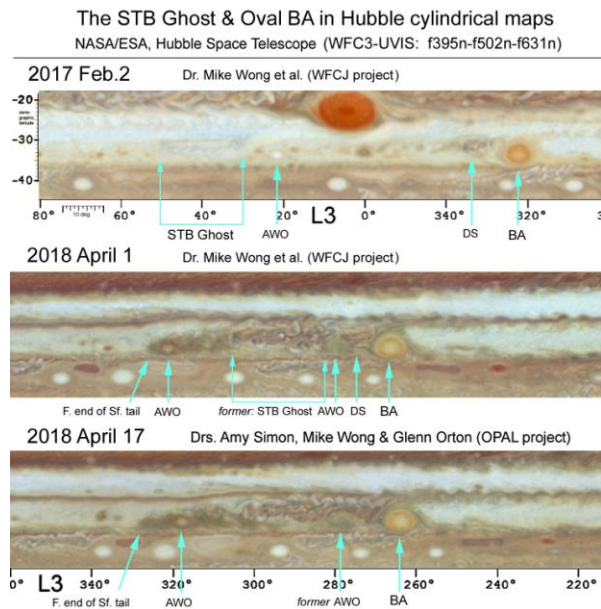


Figure 3 [left] & 4 [right]
[captions on following page]

Figure 3 [left]. Examples of maps from Hubble images, posted by the OPAL project [ref.4 & <https://archive.stsci.edu/prepds/opal/>], or the WFCJ project [ref.6 & <https://archive.stsci.edu/prepds/wfcj/>]. These show the STB Ghost and oval BA. The map on 2017 Feb.2 is one of two used to measure the Ghost’s circulation (Appendix A). The maps on 2018 April 1 and 17 show the region soon after the Ghost had transformed into a turbulent dark segment of STB, and was emitting dark waves on the STBn jet and a dark ‘South-following tail’ in the STZ. At this time, it merged with the former dark spot (DS) f. BA, and a former AWO (probably the one shown in the 2017 Feb.2 map) was merely a dull grey vortex, but a new AWO (reddish at this time) had developed in the Sf. tail.

Figure 4 [right]. Excerpts from JunoCam maps (as posted in our perijove reports), showing the STB Ghost and oval BA, including the bright convective outbreak in 2018 Feb. that initiated the transformation of the Ghost into a dark STB segment.

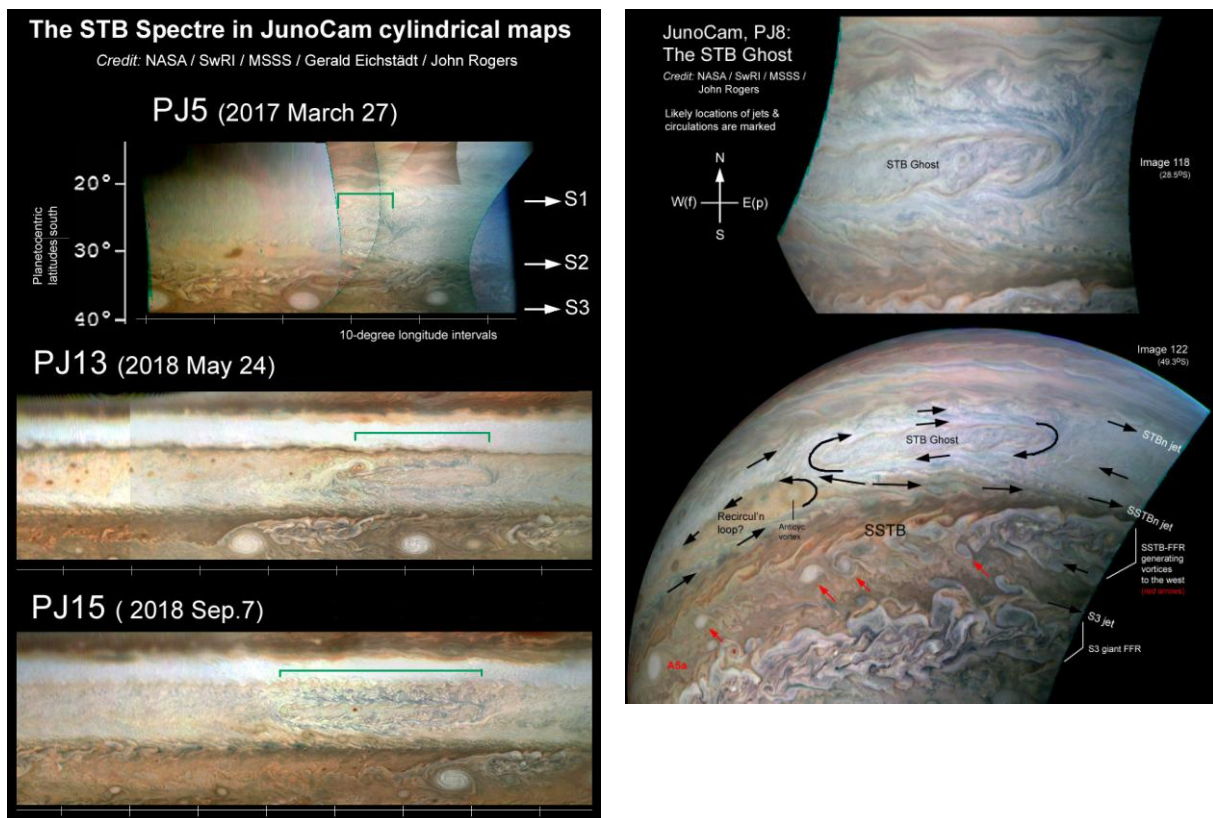


Figure 5 [left]. Excerpts from JunoCam maps (as posted in our perijove reports), showing the STB Spectre.

Figure 6 [right]. Closeup JunoCam images of the STB Spectre at PJ8, with circulations indicated (from our perijove report).

Maps of the South Temperate domain, 2015-2018

North up, aligned in System III longitude; planetographic latitudes; equirectangular projection.
 All maps by Marco Vedovato (JUPOS team) unless otherwise stated. Compilation by John Rogers (BAA).

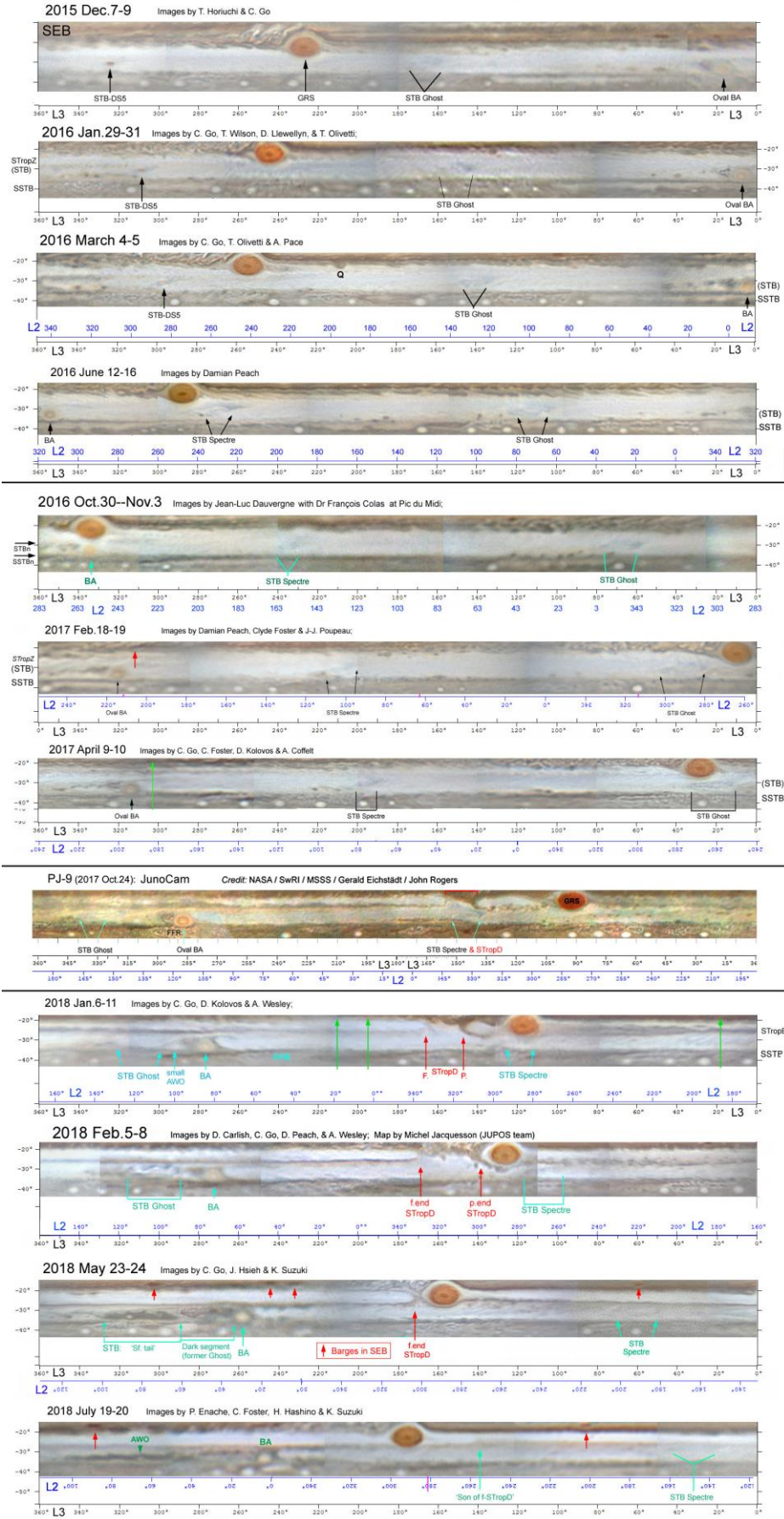


Figure 7. Set of maps (labelled) from our reports, 2015-2018, in L3.

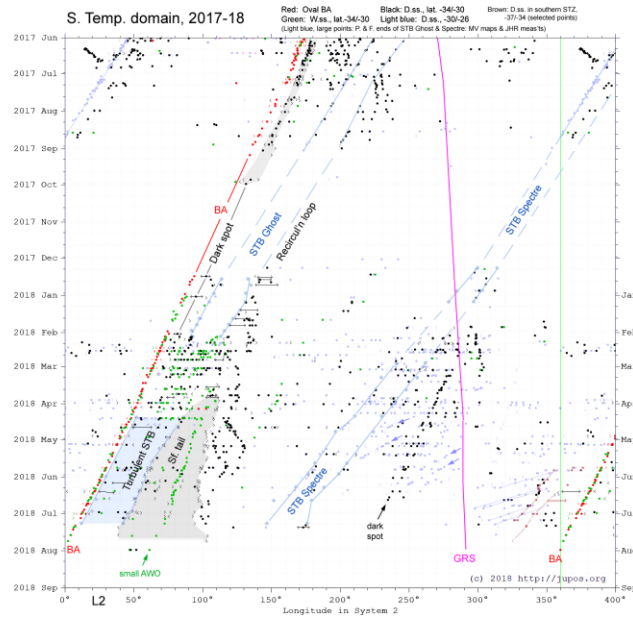
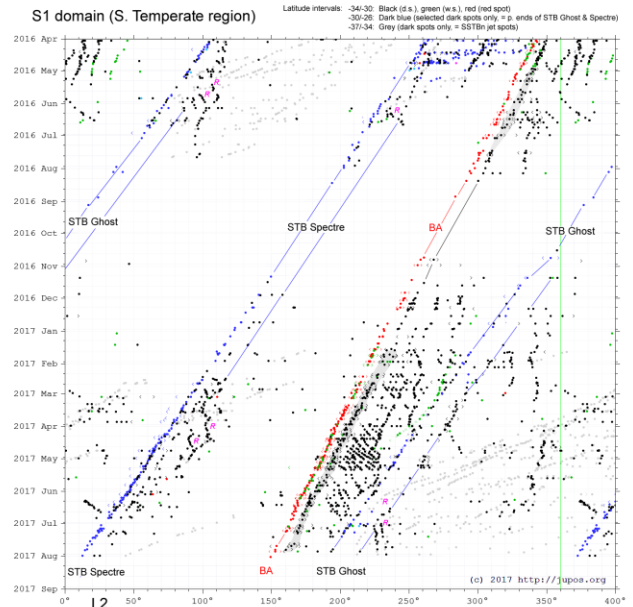
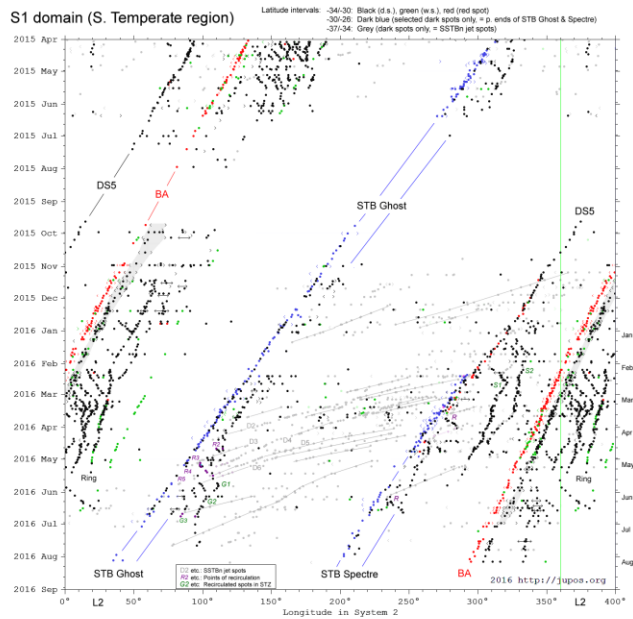


Figure 8. Triplet of full JUPOS charts for 3 apparitions, in L2 (& opposite orientation to the maps).

(Suppl.Figs in Appendix B: Integrated JUPOS charts, 2015-2018, in L2 & L3.)

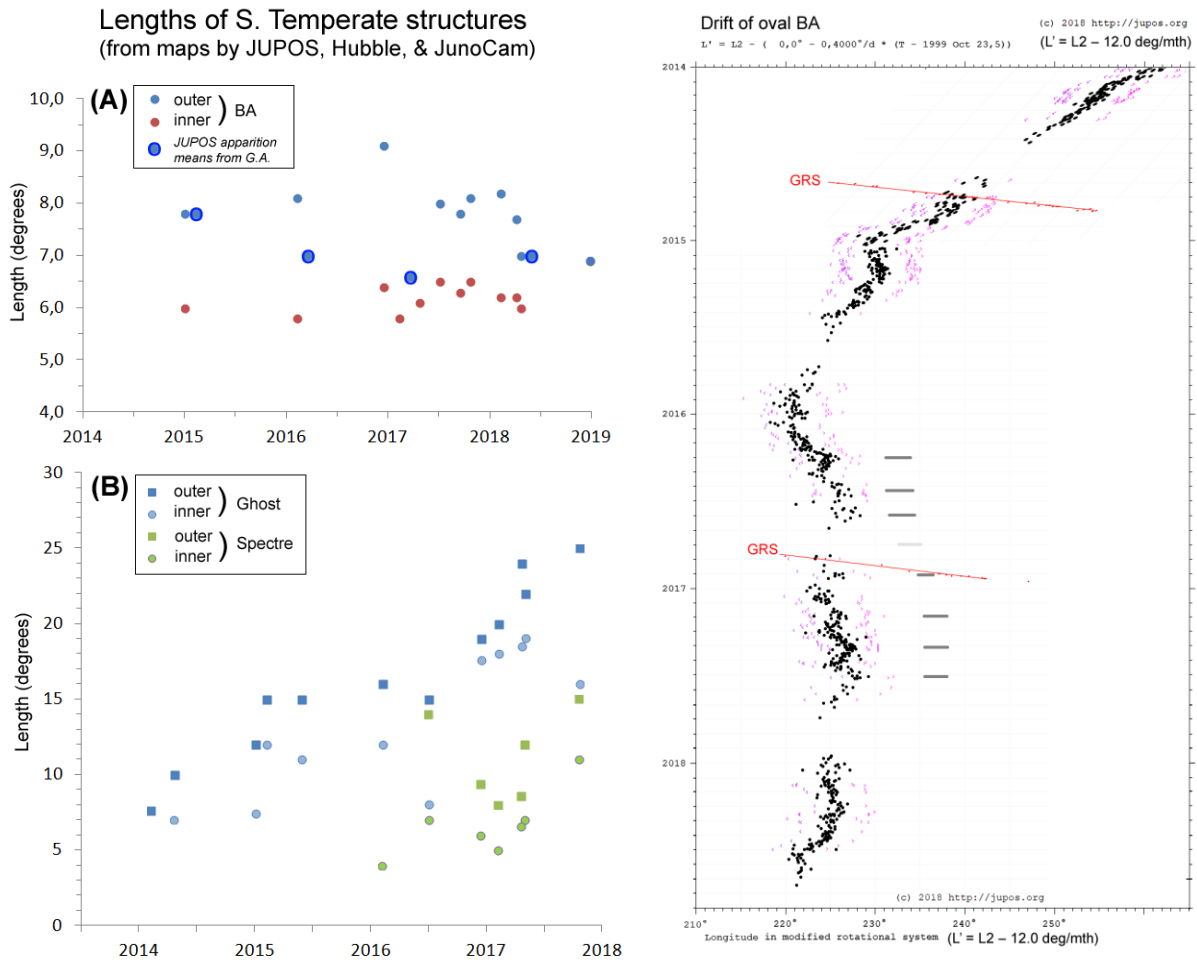


Figure 9 [left]. Lengths of S. Temperate structures, in degrees longitude.

(A) Oval BA. The outer dimension is for the white oval, the inner diameter is for the orange annulus within it. In some measures the outer diameter appears reduced as the outer part was temporarily light grey (early 2017) or dark grey (2018). All measures are from Hubble or Juno maps except the large blue symbols which are apparition means from JUPOS (from G. Adamoli).

(B) The STB Ghost and Spectre. Measures are from maps produced by JUPOS, Hubble, and JunoCam. The outer dimension extends from the blue-grey triangle at the Np. end to dark spot(s) at the Sf. end; the latter are variable, often being features of the recirculation loop, so the outer dimension is ill-defined, though most readily measured in ground-based maps. The inner dimension is for the well-defined, slightly reddish internal loop, resolved in spacecraft images and the best ground-based images.

Figure 10 [right]. JUPOS chart of oval BA, 2014-2018. In 2016 and 2017 the ~2-month oscillation is indicated.

Wind speeds in the STB Ghost [measured by J. Rogers]

Figure A1: from Hubble maps, 2017 Feb.2

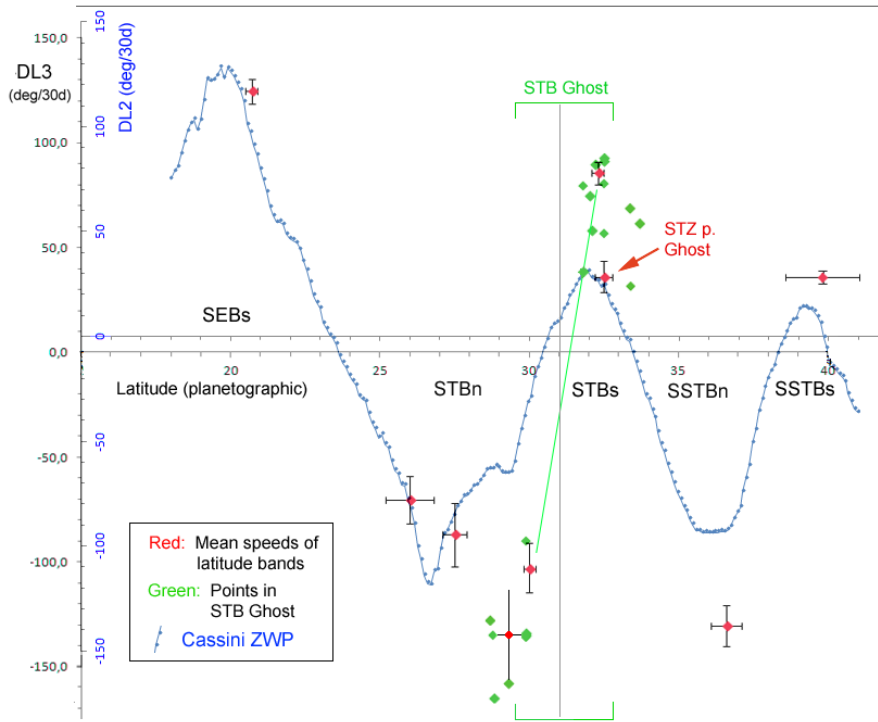


Figure A2:
from ground-based maps,
2018 Feb.15-18

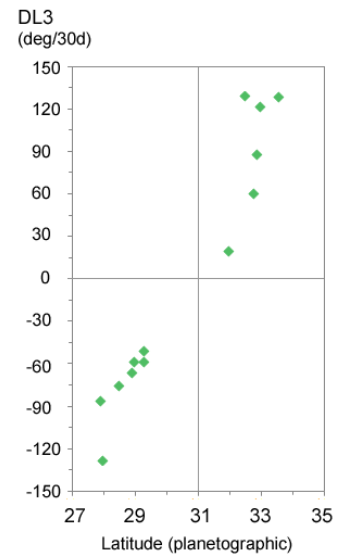


Figure A1 [left]: Chart of zonal speed vs latitude for the STB Ghost and nearby regions, compared with the Cassini ZWP.

Figure A2 [right]: Chart of zonal speed vs latitude for features in the STB Ghost during its transformation, 2018 Feb.15-18.

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Figure B1 [left]: JUPOS chart in L2, 2014-2018.

Figure B2 [right]: JUPOS chart in L3, 2014-2018.

