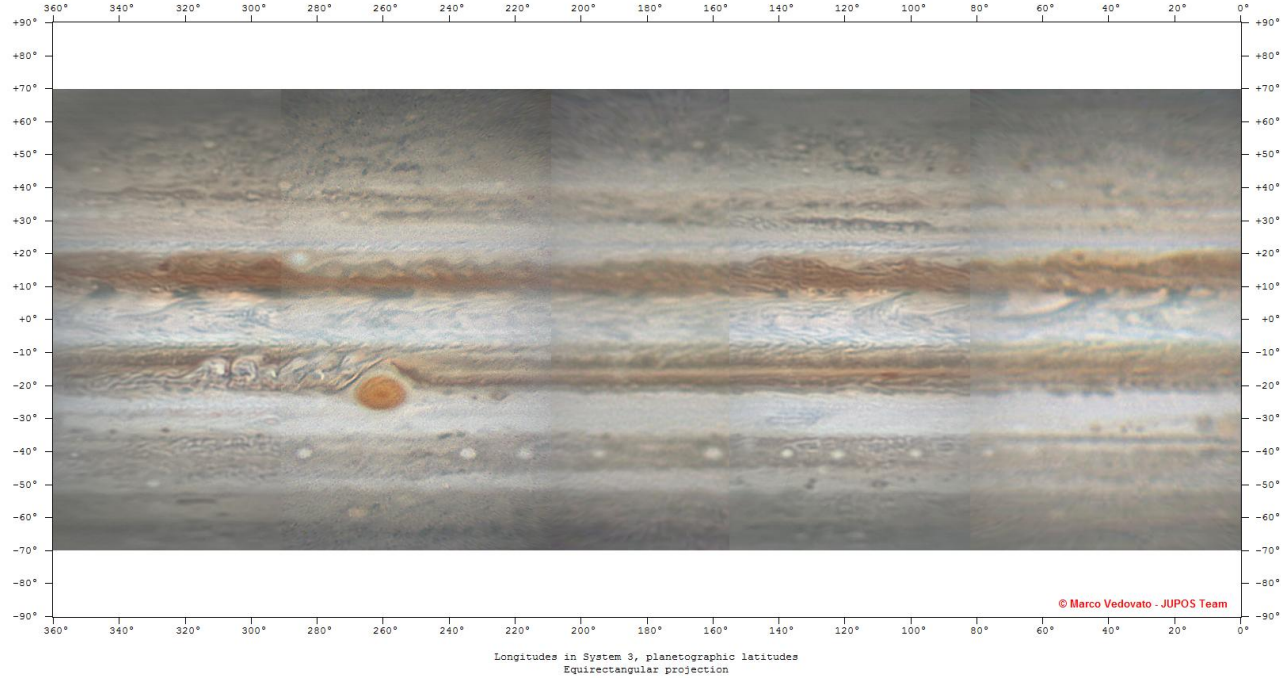


JUPOS: Jupiter regular mapping



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Europlanet Workshop, Nice, 2016 May

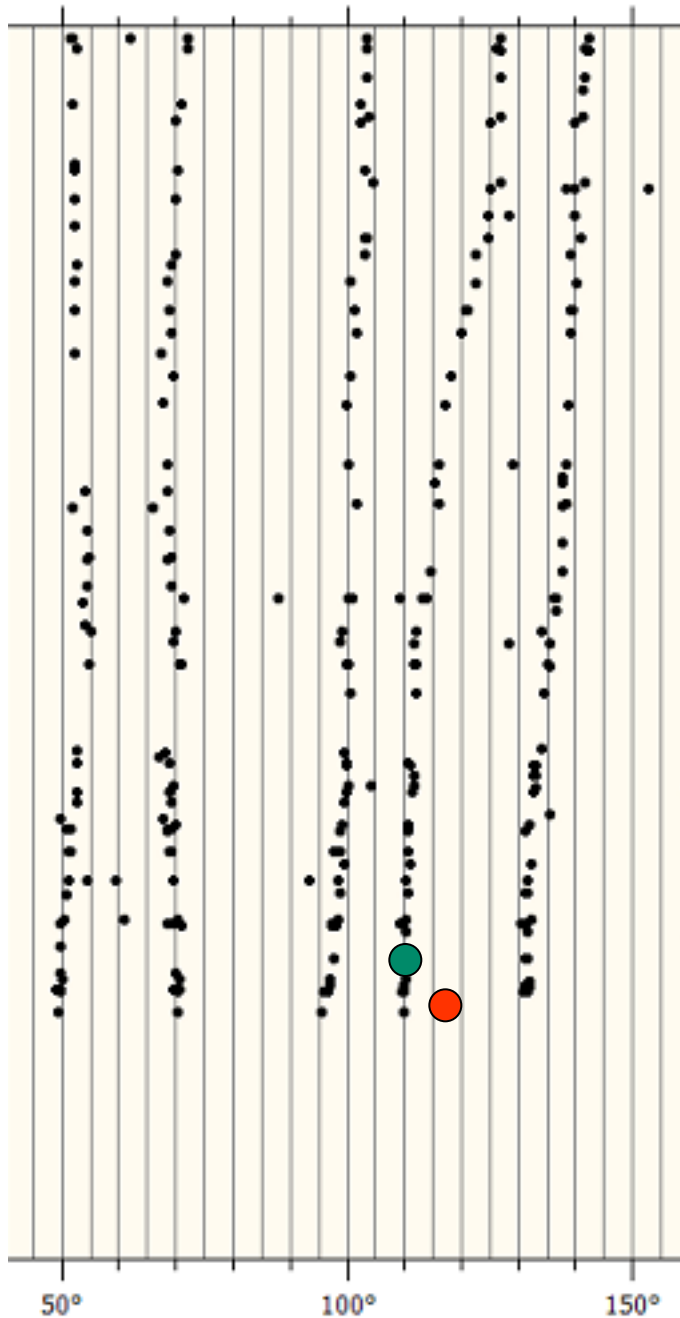
Warning

⇒ The Jupos program is really demanding

Amateur astronomers can help us:

- reporting the right time: center time of the exposure (neither the beginning, nor the end)
- “Soft” processing (to preserve the edge of disk)

We use some routines to check the images



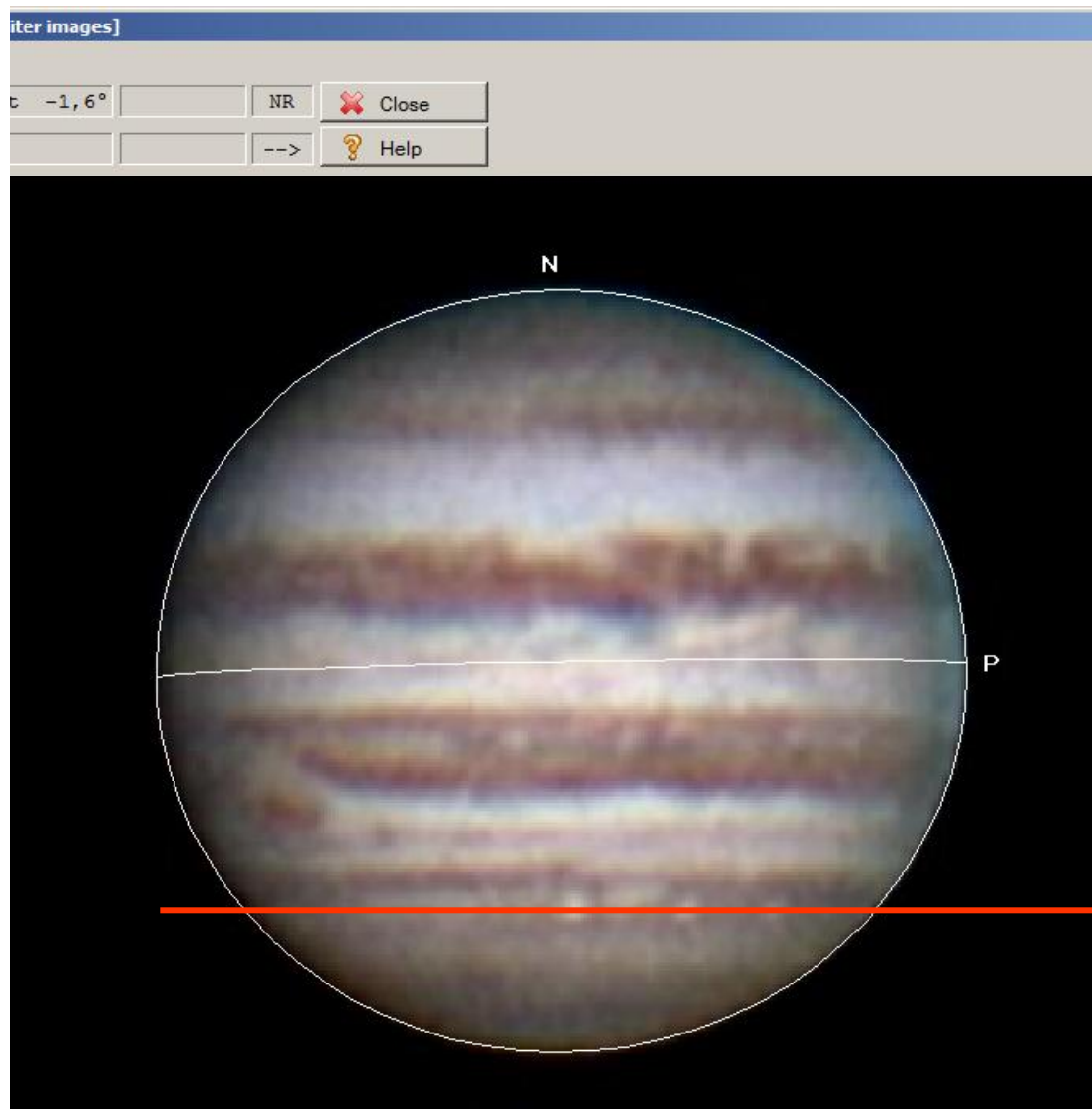
← i.e. Time check!

● Ok. The measurement fits to the trend



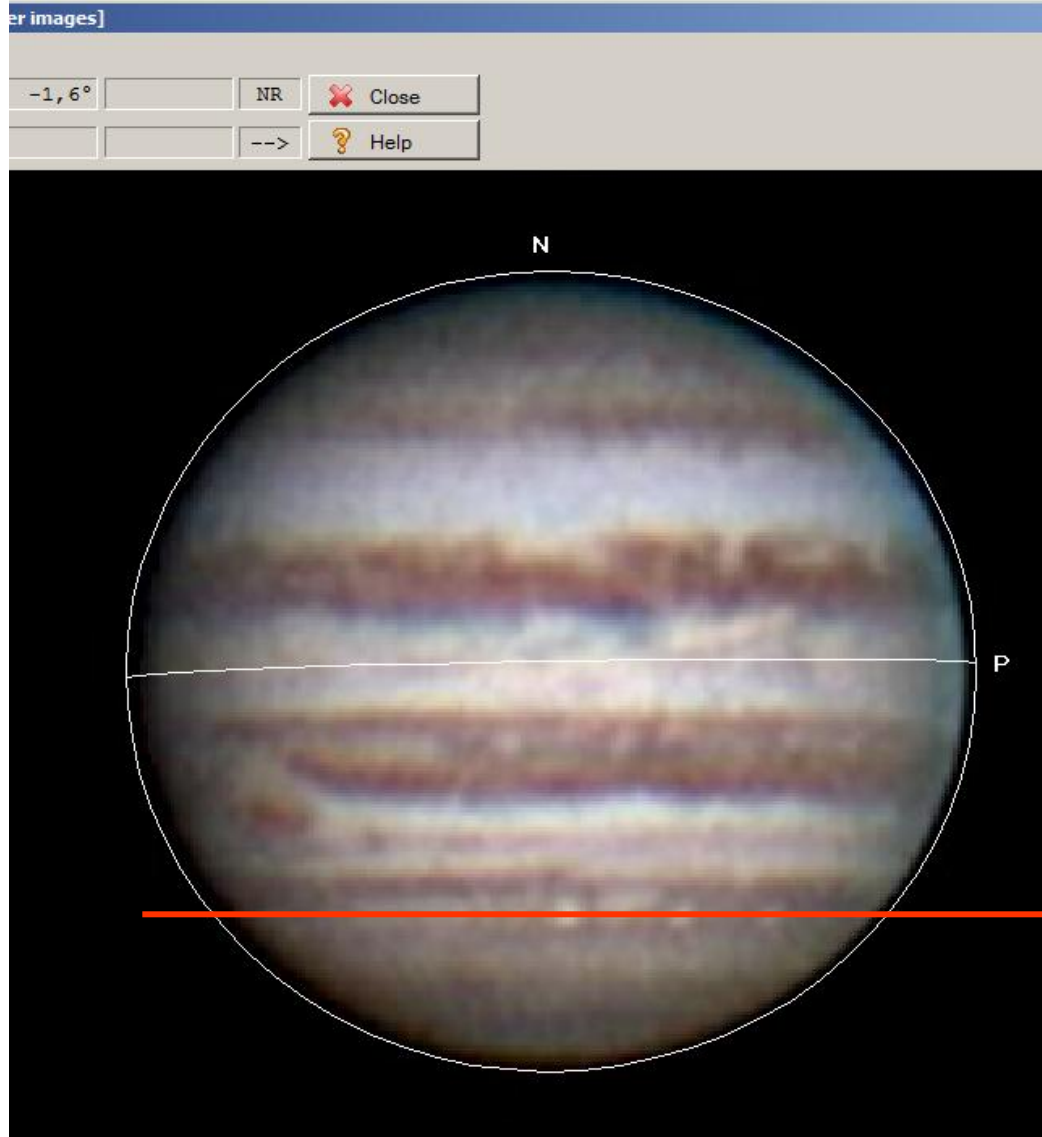
● No, wrong time: the measurement doesn't fit to the trend





Hard processing
(=> necessary to enlarge the
outline frame)

→ NO. Lat $\sim 42,2^\circ$ South
(too much)



Hard processing
(=> necessary to enlarge the
outline frame)

Ok. Lat ~ 40,5° South

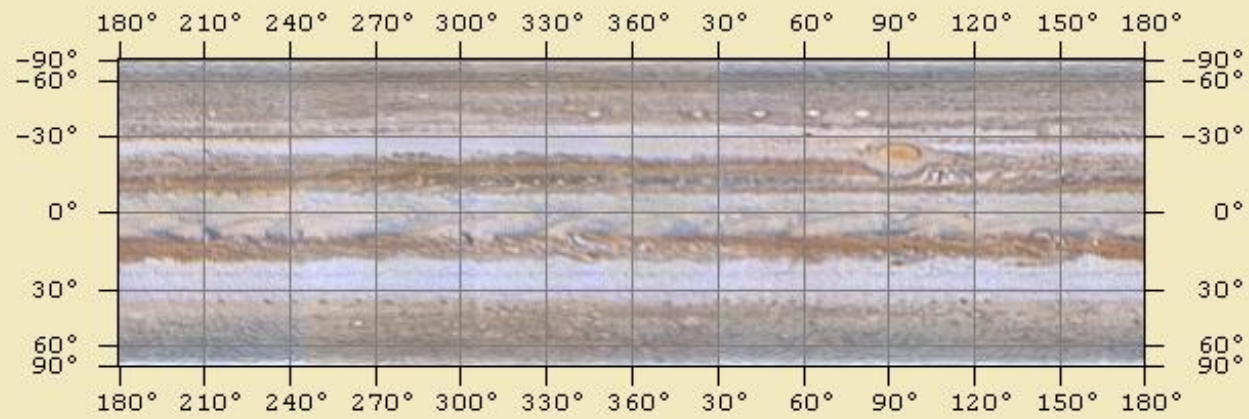
Notes about projections

In Winjupos it is possible to select some kind of different projections:

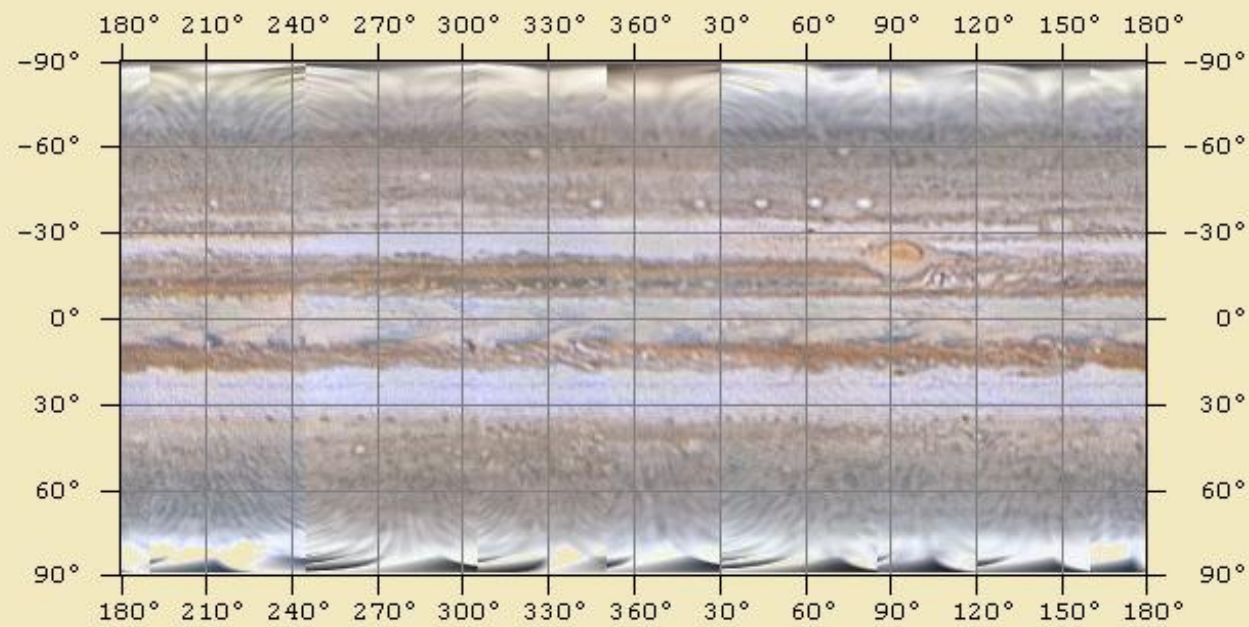
- “simple” cylindrical projections (equatorial cylindrical projection, using parallel projection)
- equirectangular projection (equatorial cylindrical projection with equidistant scaling in latitude)
- polar projection
- we can select the orientation too, North or South up:
 - NASA standard: North up + L3 reference system
 - am. astronomers: South up + L1 and L2 ref. systems

Simple cylindrical vs equirectangular projection

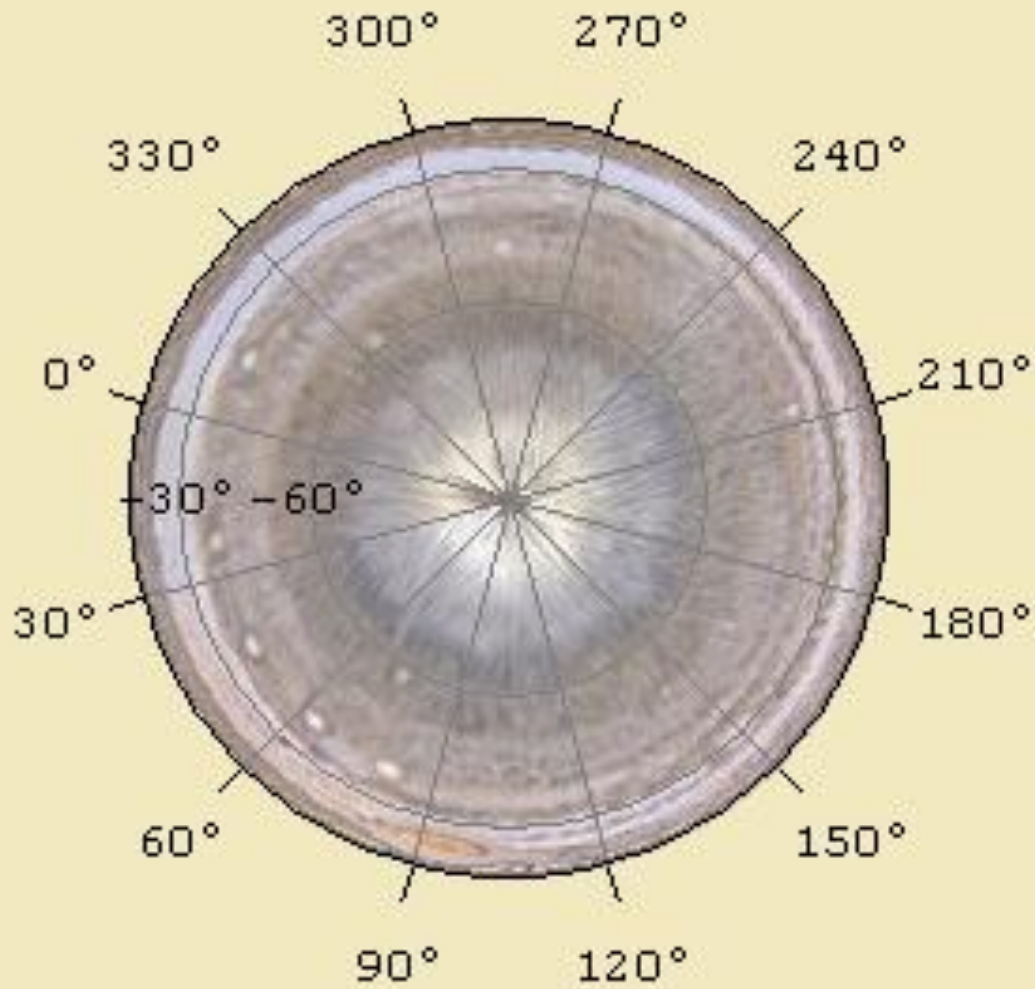
Cylindrical projection: Equatorial cylindrical projection, using parallel projection



Equirectangular projection: Equatorial cylindrical projection with equidistant scaling in latitude



Polar projections

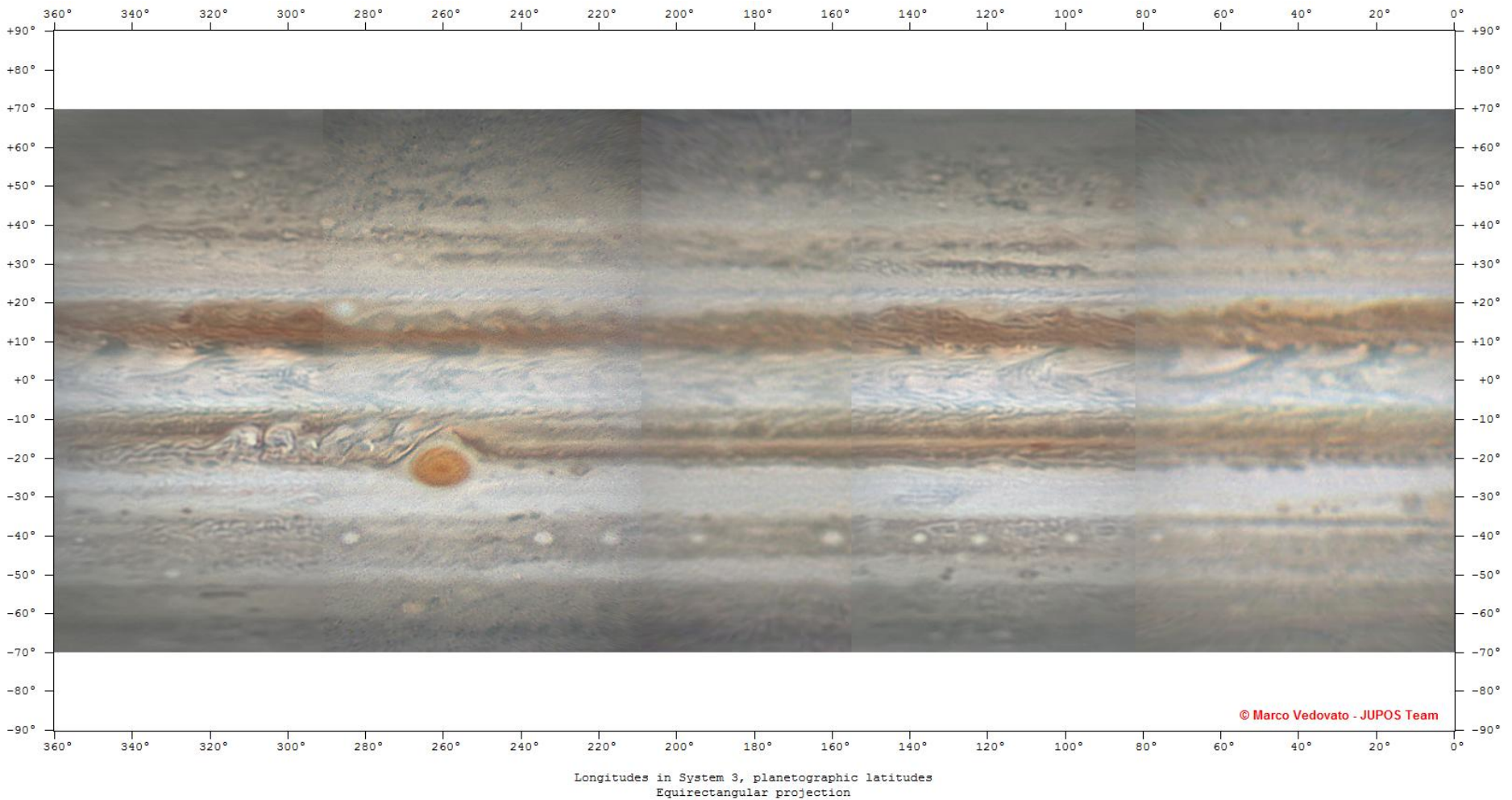


A regular mapping is really useful:

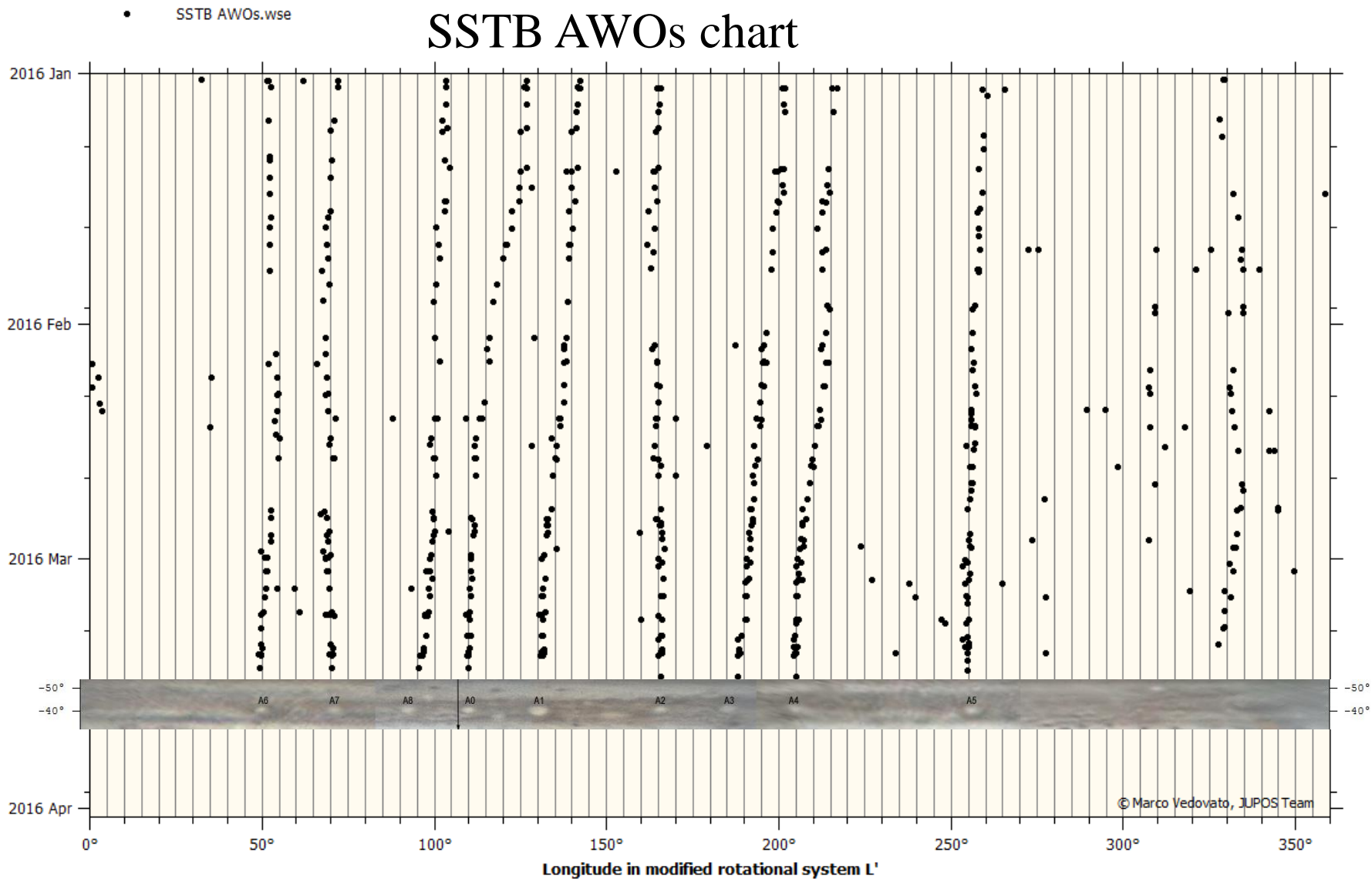
1. to get a global overview over the full disk
2. it provides an easy way to identify which feature marked a track in a chart
3. to calculate a Zonal Wind Profile
4. Animations/videos to follow the outer atmospheric currents and other phenomena.

=> I compose (when possible) a map every ten days

1. Global overview over the full disk

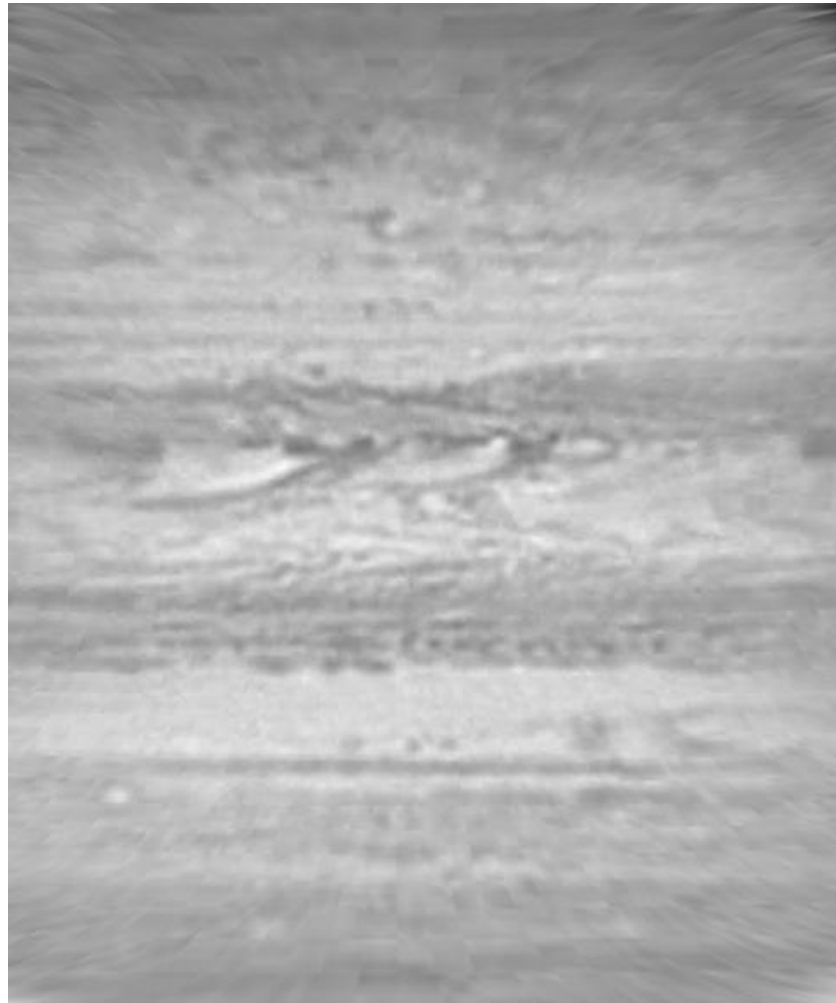


3. From tracks in a chart to features in a map

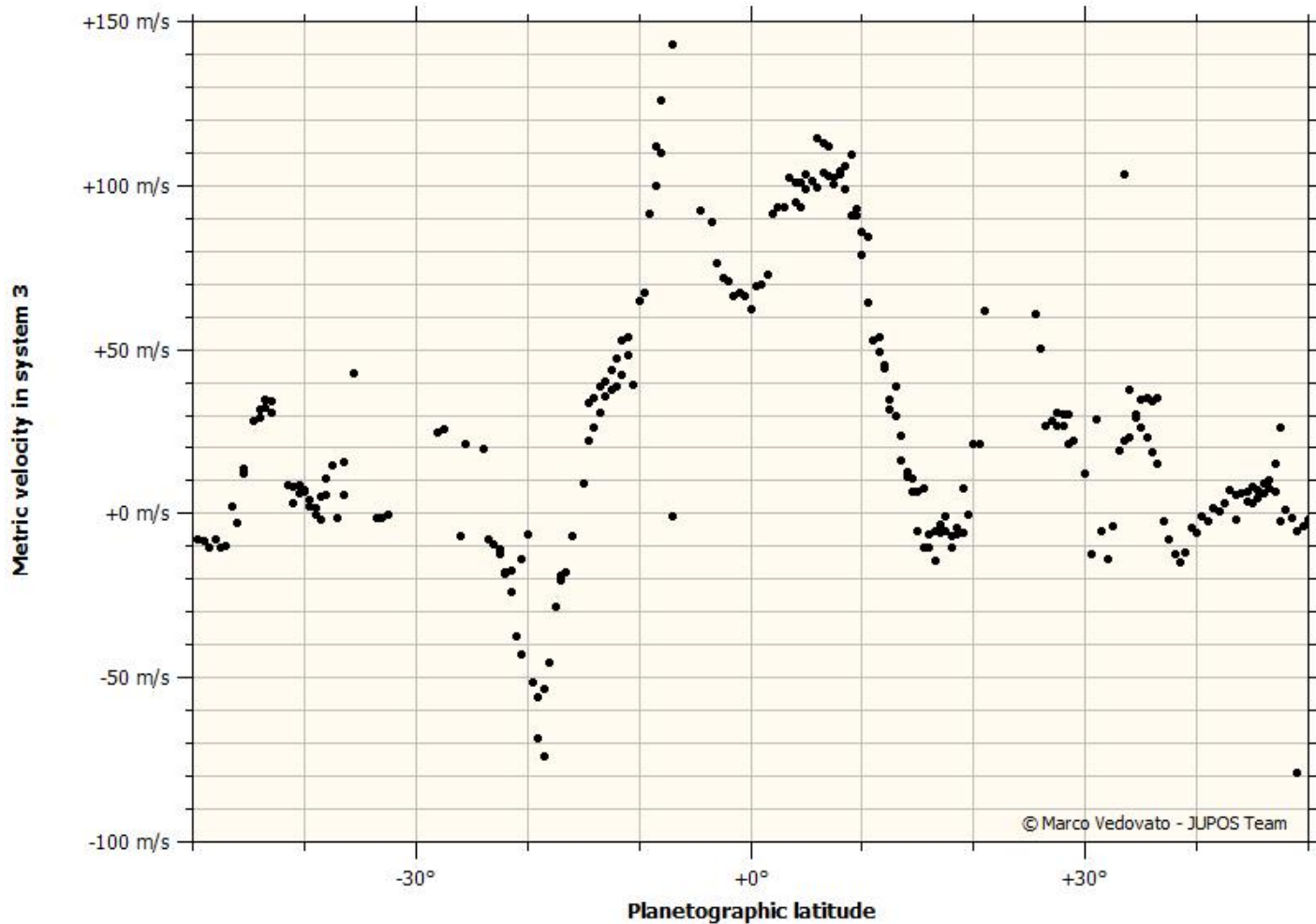


4. Zonal Wind Profile

- After selecting an images pair, covering the same longitudes, it is possible to get a ZWP
- The second image must be recorded after $2/3$ rotations

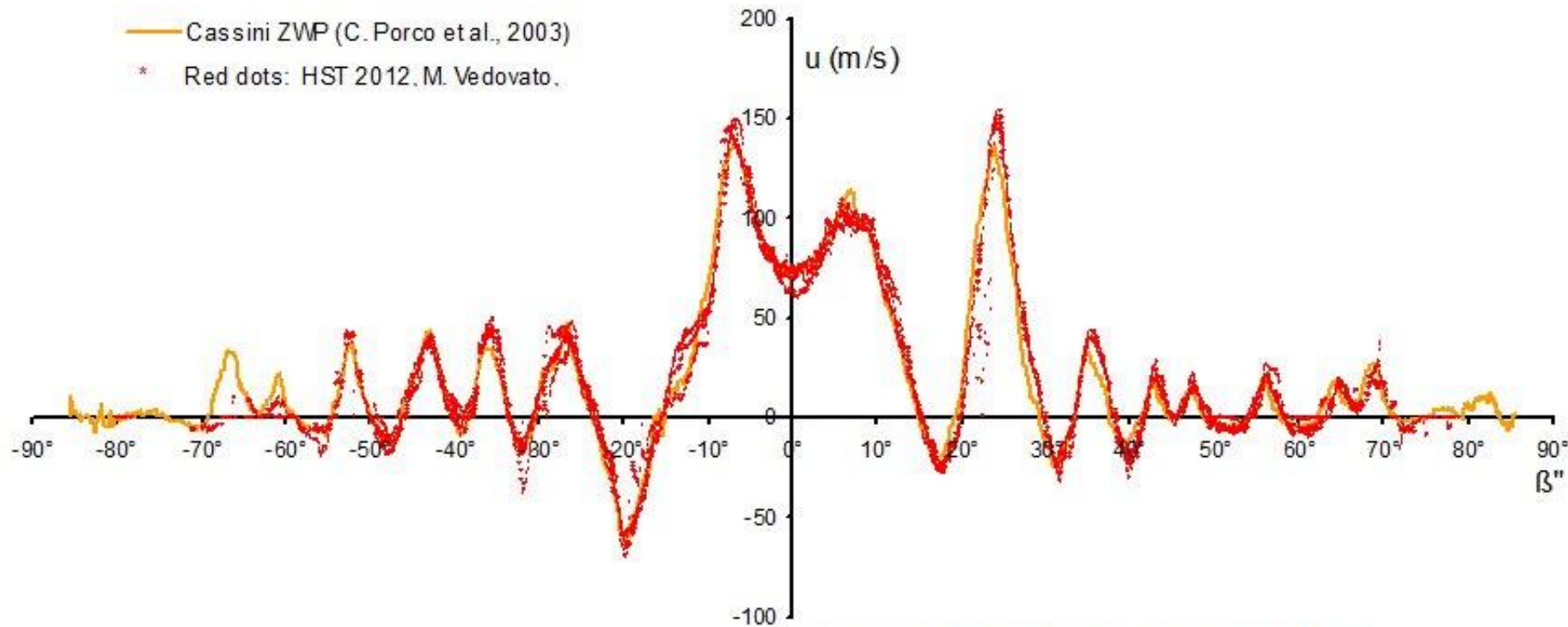


Typical ZWP from amateur images



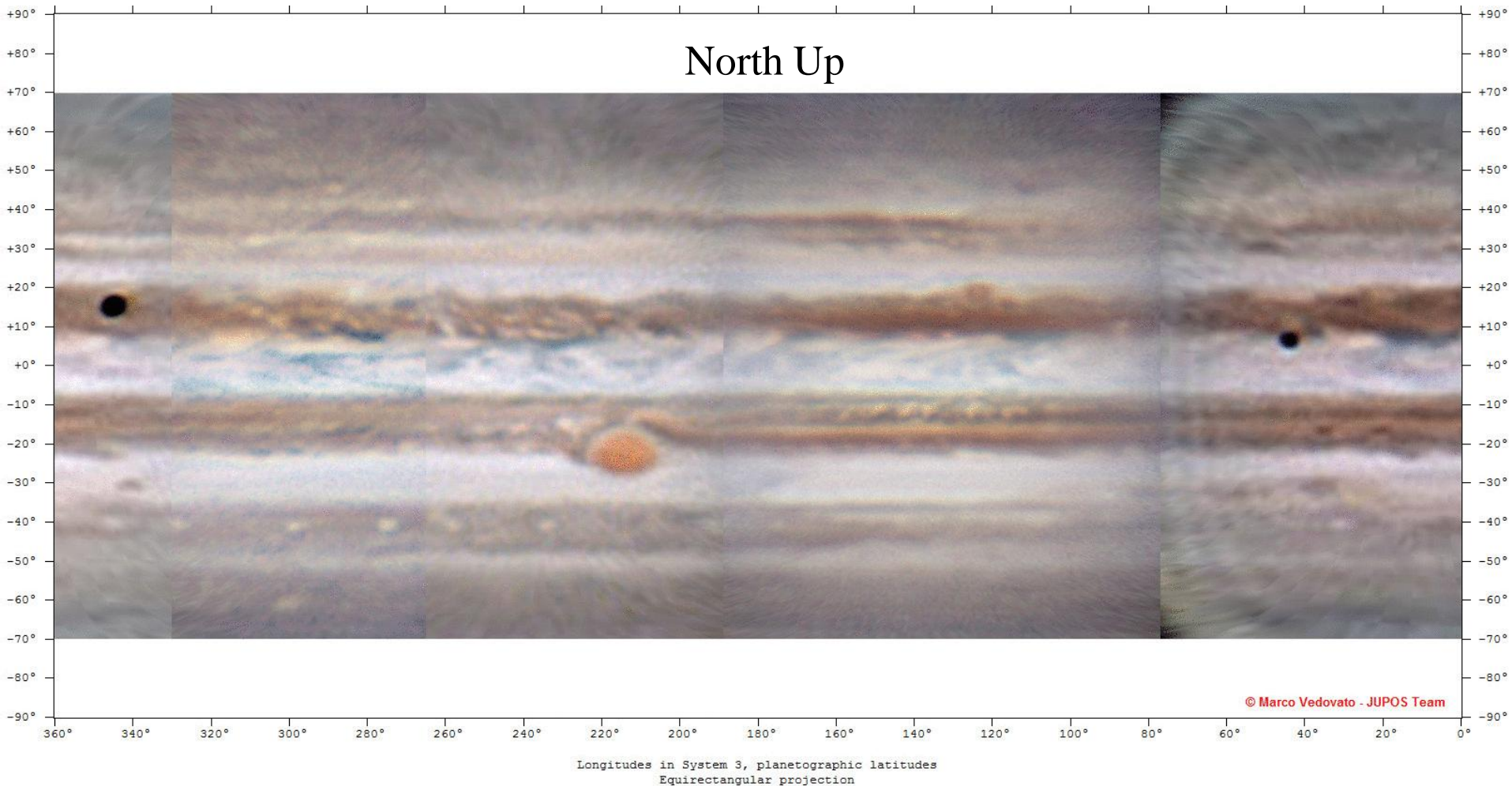
Very HiRes ZWP from HST (2012)

Comparison between zonal wind profiles (System III) obtained in different epochs



© Images: NASA/ESA HST - G. Schneider team
Analysis: M. Vedovato UAI, Sez. Pianeti - Jupos.org

4. Animation of the outer atmosphere

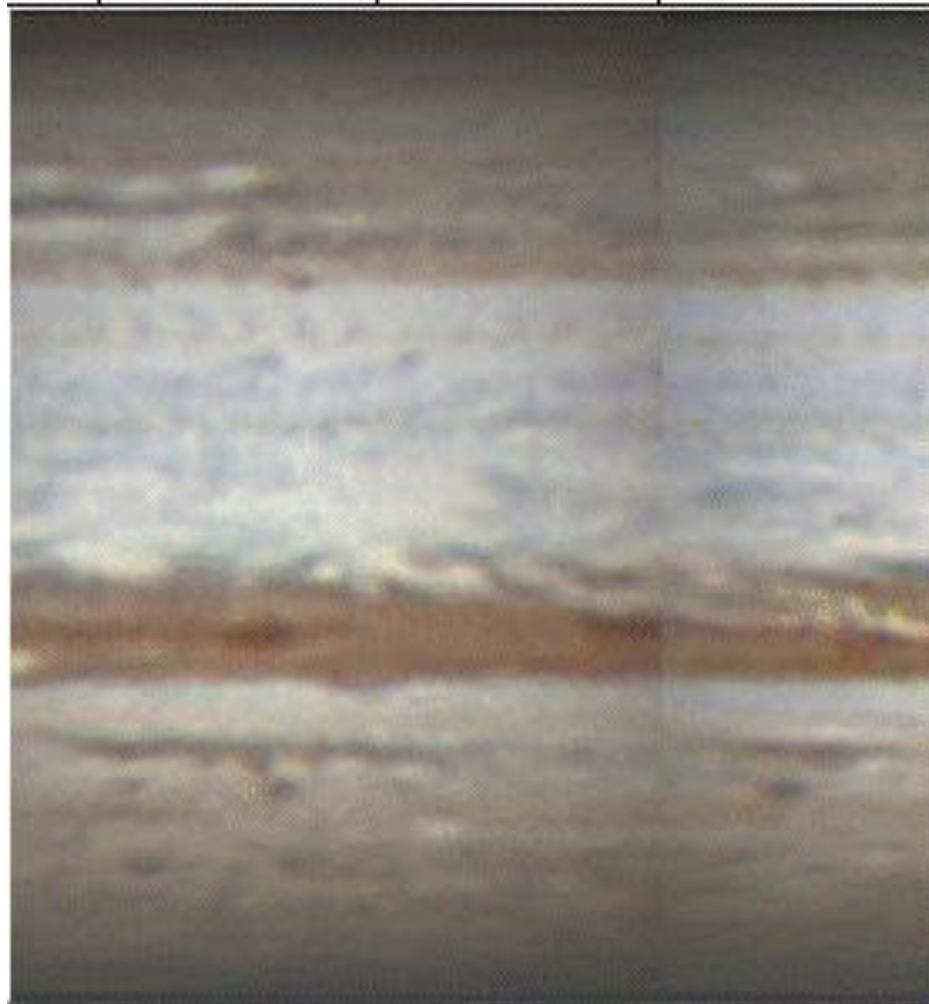


Maps by M. Vedovato, animated GIF by L. Fletcher

4. Animation: the SEB revival

(2010 November)

South up – L2 ref. system



Thanks for your attention

