

Jupiter in 2015/16: Report no.1

First report on the 2016 NTBs outbreak

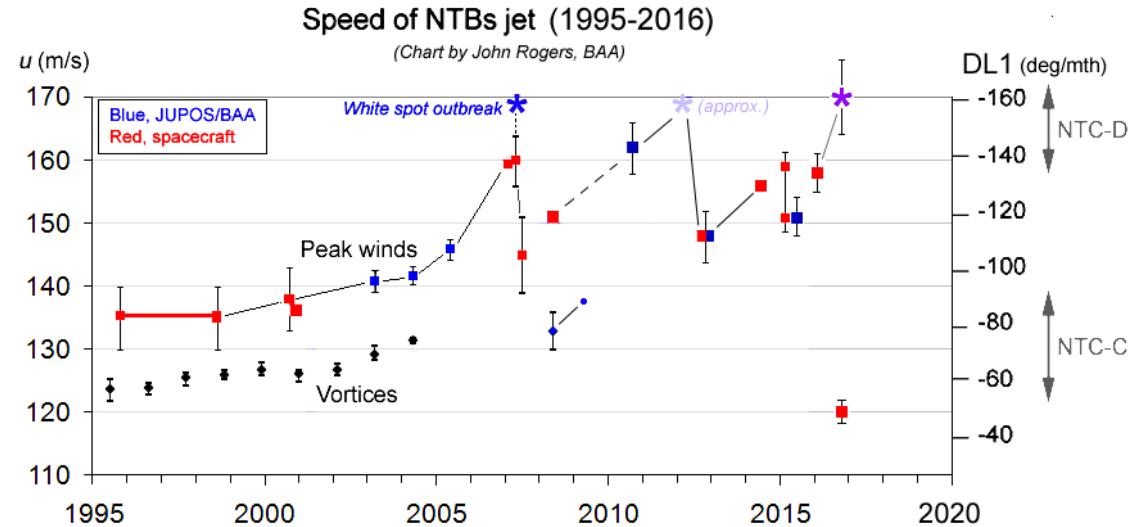
--John Rogers (British Astronomical Association), 2016 Oct.26

Table & Figures

Table 1. Speeds of spots in NTBs jet outbreak, 2016 October

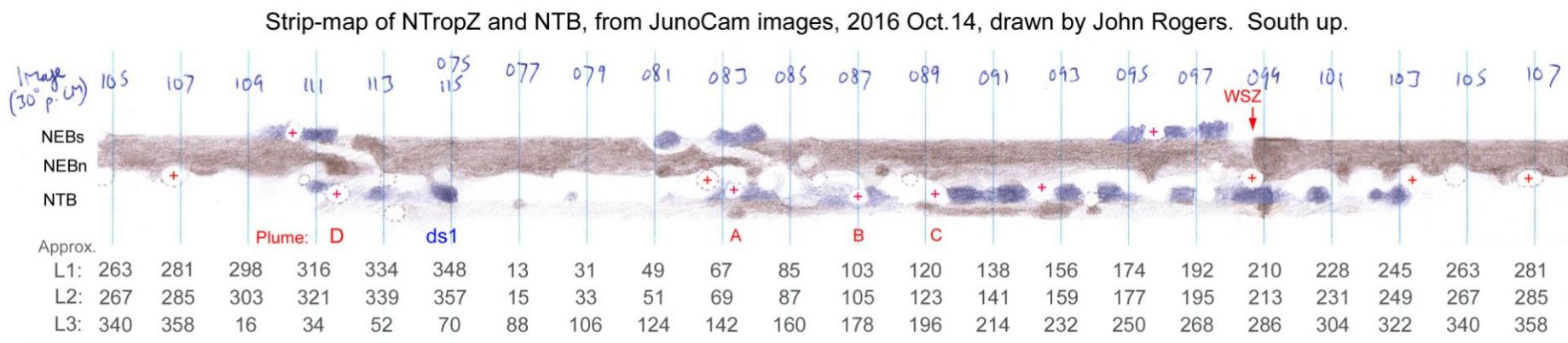
	from JunoCam images:			from ground-based images:			from combined data:				Means:				
	(deg/day)			(deg/day)			(deg/day)			(deg/mth)		(deg/mth)	(deg/day)	(m/s)	
	<u>DL1</u>	<u>DL2</u>	<u>DL3</u>	<u>DL1</u>	<u>DL2</u>	<u>DL3</u>	<u>DL1</u>	<u>DL2</u>	<u>DL3</u>	<u>DL1</u>	<u>DL2</u>	<u>DL3</u>	<u>DL1</u>	<u>DL3</u>	<u>u3</u>
W.ss:															
A	-5,4	-13,1	-12,8	-4,7	-12,4	-12,1	-5,05	-12,7	-12,4	-151,5	-151,5	-12,4	165,5		
+/-	0,7						0,15			4,5	-162	-12,8	170,8		
B	~(-2,1)	~(-9,8)	~(-9,5)	--			--								
C	-6,0	-13,7	-13,4	-7,9	-15,6	-15,3	-8,7	-16,4	-16,1	-261	-180	-13,4	178,8		
+/-	0,7						0,2	? [implausibly fast]	6		-147	-12,3	164,1		
D	-5,3	-13,0	-12,7	-4,0	-11,7	-11,4	-4,9	-12,6	-12,3	-147	-159	-12,7	169,5		
+/-	1,4						0,2			6	-159,9	-12,7	169,7		
D.ss:											12,7	0,43	-5,8		
ds1	--			-1,6	-9,3	-9,0	-1,5	-9,2	-8,9	-45					
							0,2			6	-45	-8,9	118,8		
Best p. end	-1,75	-9,4	-9,1							-52,5					
+/-	0,25									7,5	-52,5	-9,1	121,4		
Best f. end	-1,6	-9,3	-9,0							-48					
+/-	0,25									7,5	-48	-9,0	120,1		
Others: min.	~(0)	~(-7,7)	~(-7,4)								-48,5	-9,0	120,1		
Others: max.	~(-4,6)	~(-11,3)	~(-11,0)								3,8	0,1	-1,3		

Figure 1. Chart of NTBs jet peak speed over recent decades. This is an update of our previously posted version [ref.3] with addition of the present outbreak, and of a Hubble measurement from 2016 Feb.9, which was derived in [ref.4] from HST maps in [ref.5].



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Figure 2. The last 21 JunoCam images, on Oct.14, processed as indicated, and labelled to show the NTB features. South is up in all images.



(NEBs is drawn schematically, with only a few of the NEBs dark formations shown.) + Bright white spot Longitude scale was positioned relative to the GRS, assumed to be at L2 = 256, L3 = 329.
Vertical lines correspond to each image, ~30 deg. p. CM, 18 deg or 30 min apart (3 deg error in one rotation). This agrees well with JunoCam metadata (images 75 and 115, 30° p.CM, L3 = 69 and 71.5).

Figure 3. Map of the NEB and NTB drawn from the JunoCam images in Fig.2.

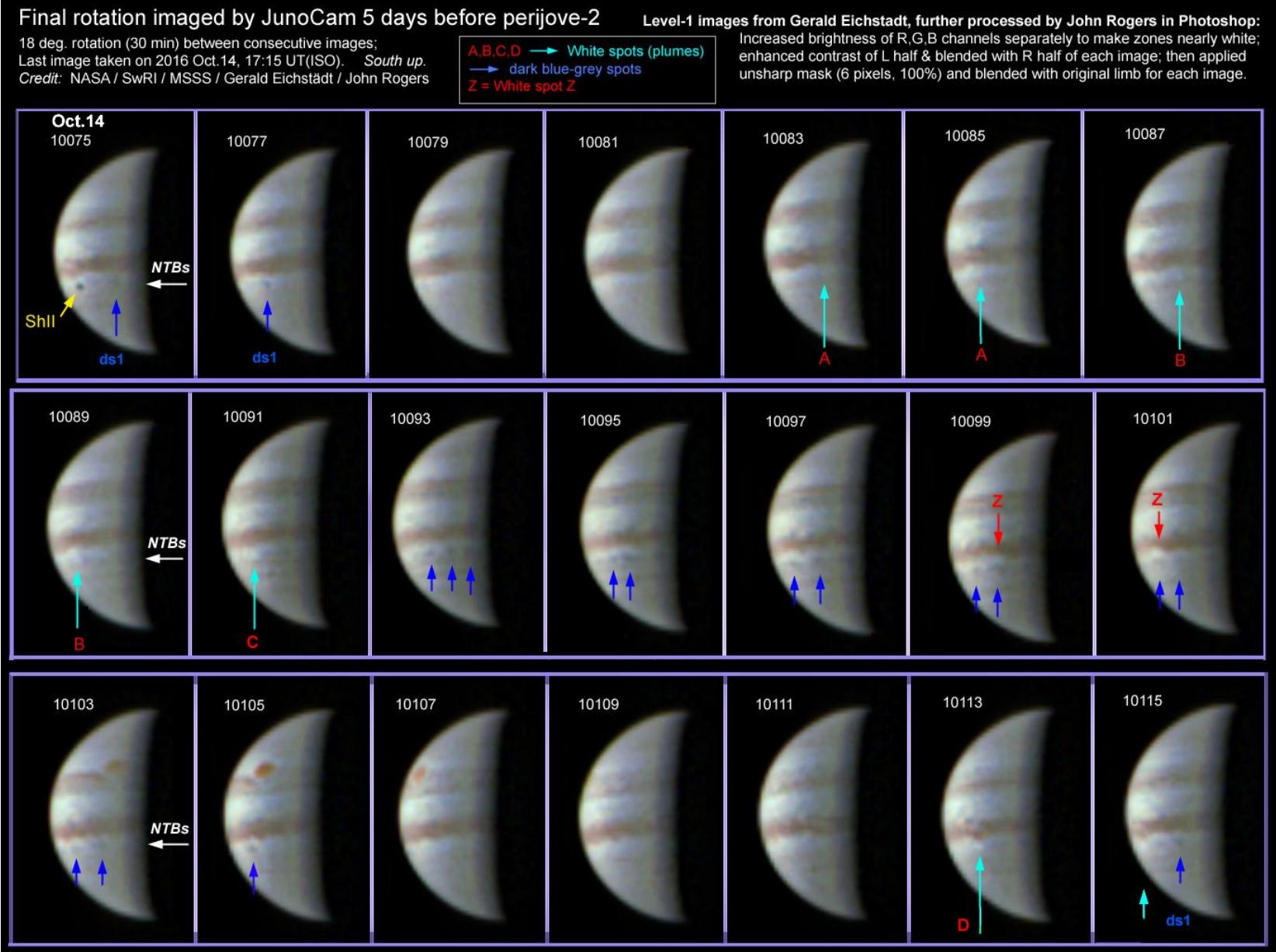


Figure 2.

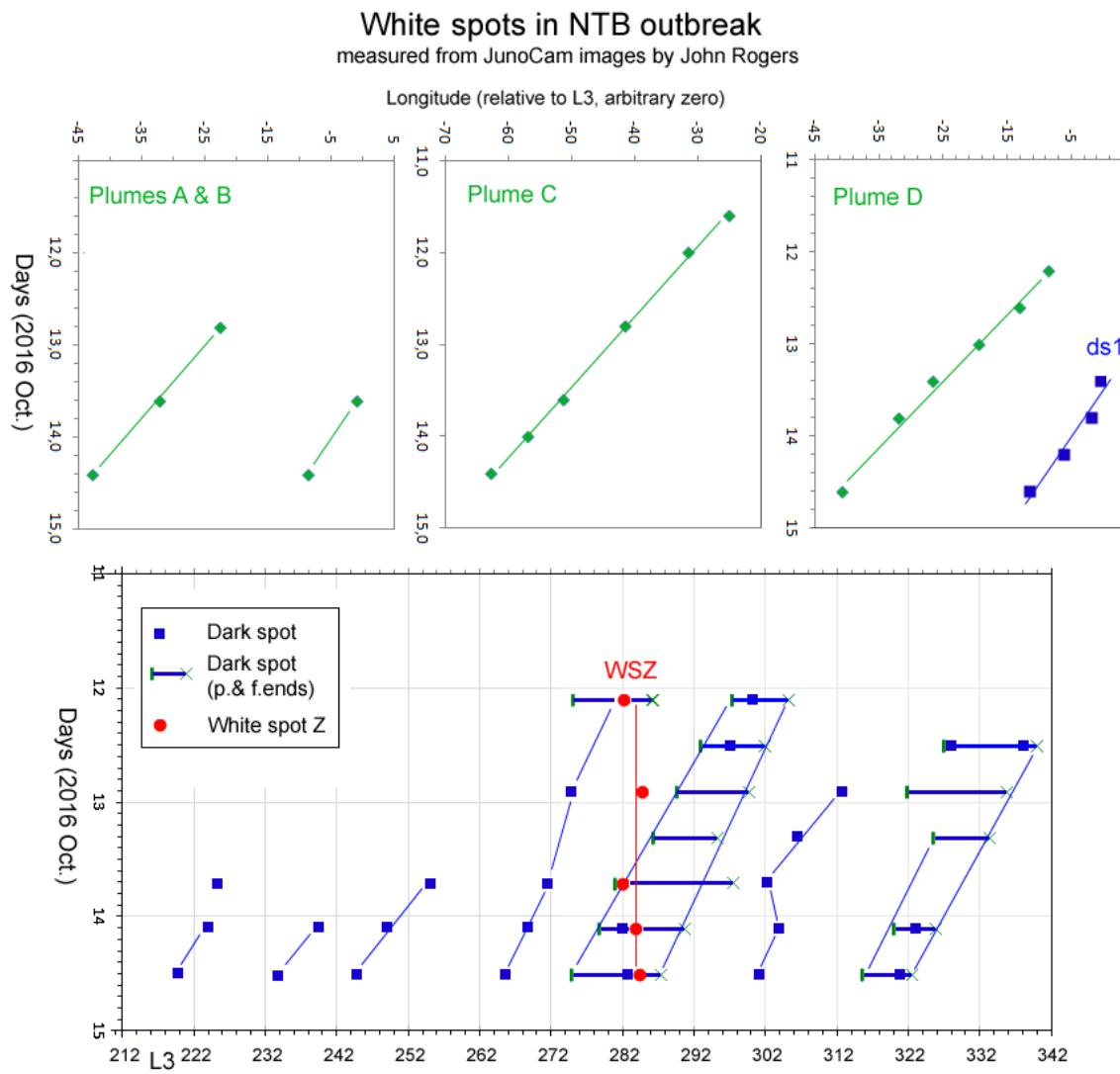


Figure 4. Charts of longitudes (L3 with arbitrary offsets) measured from the JunoCam images.

NTBs outbreak: Bright plumes and dark spots

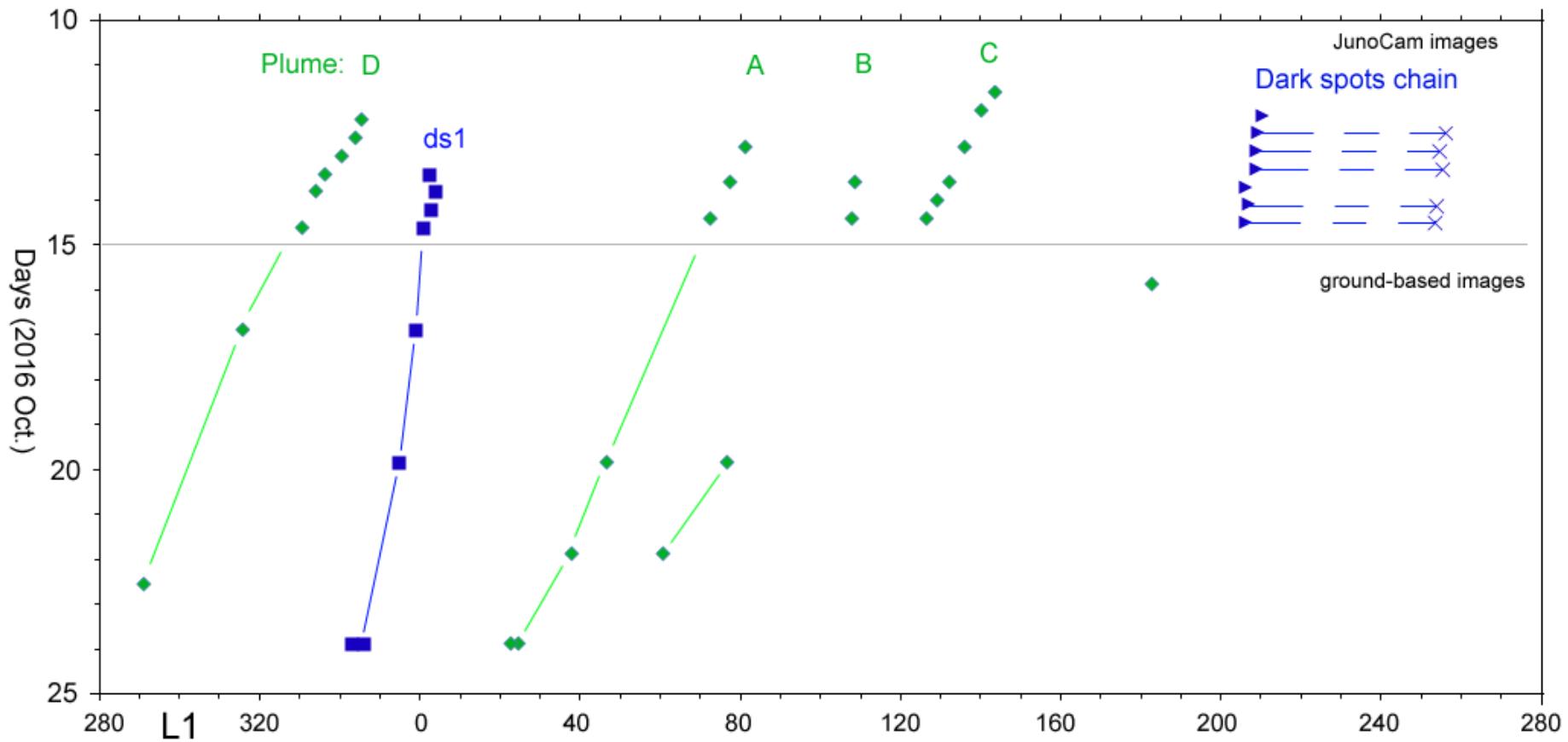


Figure 5. Charts of longitudes (L1) measured from the JunoCam images as in Fig.4, and from the ground-based images shown in Fig.6.

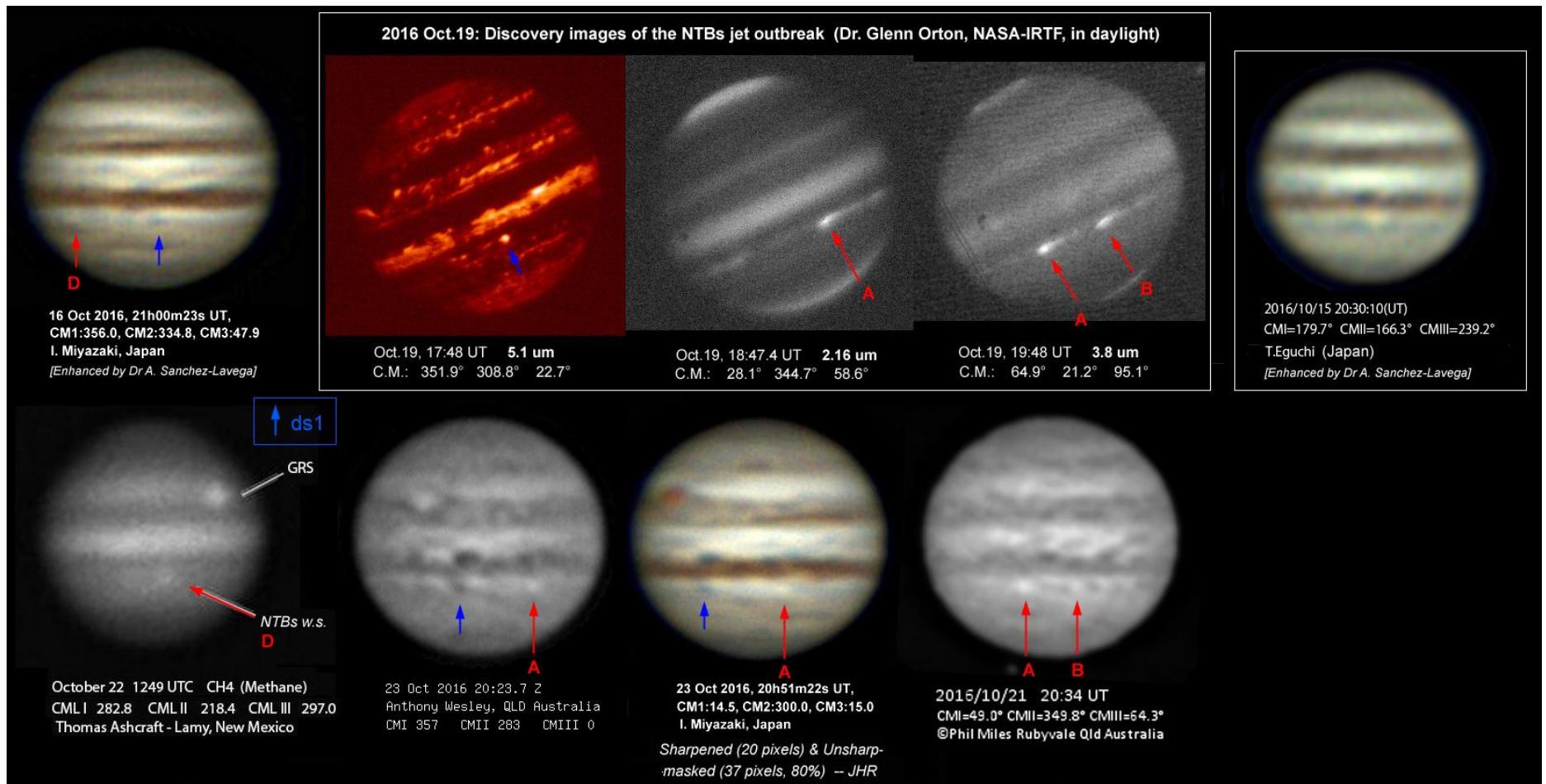


Figure 6. Ground-based images showing the outbreak.

2016 Oct.23-25 IR or red images by T. Olivetti, P. Miles, & A. Wesley; Map by M. Vedovato

Oct 23	23:09,5	Tiziano Olivetti	41°...130°
Oct 24	20:19,0	Phil Miles	130°...213°
Oct 25	19:25,8	Anthony Wesley	213°...300°
Oct 23	20:23,7	Anthony Wesley	300°... 41°

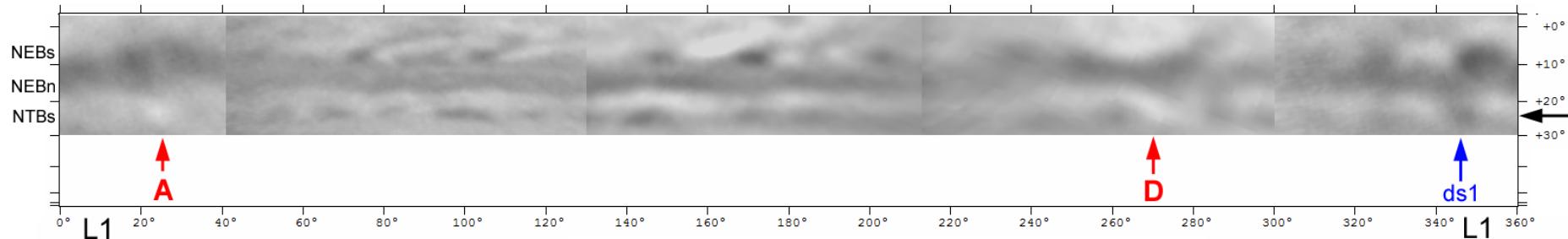


Figure 7. Map of the NEB and NTB, in L1, prepared using WinJUPOS by Marco Vedovato, from red or infrared images on Oct.23-25 as indicated (including some which post-date the analysis in this report).

Proof copy of: Peek BM (1946) Memoirs of BAA 35 (no.4), 'Jupiter Section: Apparition of 1942-43'

* The word "disturbance", unless printed with a capital D, is used in its non-technical sense, and in this section refers to the upheaval in the S.E.B. When the feature known as the S.Tropical Disturbance is mentioned, a capital letter is always employed.

Figure 8. B.M. Peek's footnote in his proof copy of [ref.8], in the BAA archives.