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### I Abstract

Amateur astronomers observations play a role in the study of planets' atmospheres. The planetary observations section ("Commission des observations planétaires") of the Société Astronomique de France (SAF) is the evolution of a commission created in 1956, which collects amateur observations. This commission analyses these observations resulting in regular reports published in "Observations & Travaux" (the technical paper of the "Société Astronomique de France"), and collaborates with international planetary amateur groups as well as with professionals interested into the observational coverage amateurs can provide.

Observations (color or filtered images in wavelengths from UV to IR 1 $\mu$ m) and analysis performed are:  
**Venus:** first amateur surface infrared emission observation, cloud activity, measurement of cloud layer rotation  
**Mars:** polar caps and hoods evolutions; shadows effects; dust storms apparitions and movement; hazes, cloud activity, orographic clouds along the Martian seasons  
**Jupiter:** bands and spots evolutions, drift rates measurement, participation to worldwide Jupiter amateur observations project (JUPOS)  
**Saturn:** spots and storms activity, drift rates comparison with probes wind profile, seasonal effects, visual observation of storms evolutions related to SEDs activity with Cassini's team  
**Uranus, Neptune:** polar flattening, albedo difference detection attempts  
**"Remote satellites":** photometry/astrometry of Jupiter, Saturn faint satellites (magnitude>15), Uranus and Neptune satellites  
**Communication:** Information exchange via e-mail lists ([group.planetessaf@wanadoo.fr](mailto:group.planetessaf@wanadoo.fr)) to share experience, observations and provide valuable data to the astronomical community and general public; publication of all observations, guides, ephemeris and reports on internet (<http://www.astrosurf.com/planetessaf/>)

### I Venus (see [1])

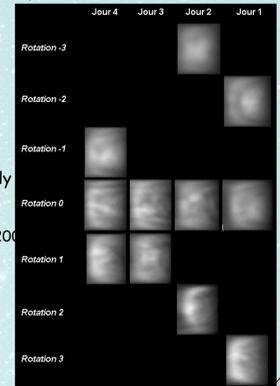
First amateur surface infrared emission observation on Venus night side through the 1 $\mu$ m CO<sub>2</sub> emission window. Two colder mountain regions might be detected, along with other temporary or fast moving darker zones which could correspond to lower clouds hiding the surface  
 (Christophe Pellier, 2004.05.21, 14" refractor)



Cloud activity can be monitored in UV, showing frequently distinct "Y" or "U" shapes, bright polar regions and sometime dark bands separating the polar vortex from the Hadley convection cell

Partial detection of Venus cloud layer rotation in 4 days (see especially shapes in last day 4 column)

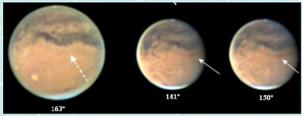
(SAF observations collected by Christophe Pellier, in 2004)



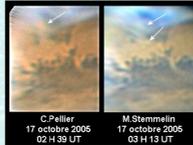
### II Mars (see [2], [3], [4])

Monitoring of the following items evolution correlated to Mars seasons changes:

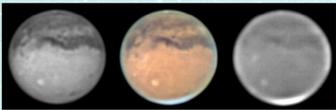
-polar caps and hoods evolutions with associated hazes (see right, images by Christophe Pellier)



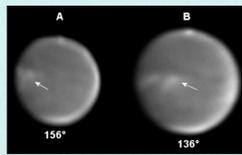
-shadows effects depending on time of martian day (see left, images from Christophe Pellier showing Valhalla shadow)



-dust storms apparitions and movement correlated to Mars topology (see right, amateur images centered on Nikoleras/Chryse region)



-CO<sub>2</sub> snow apparition on high mountains (Olympus Mons) which might be linked to strong dust storm activity causing temperature decrease (see right, IR, RGB, Violet images by Christophe Pellier on 2005-11-05)



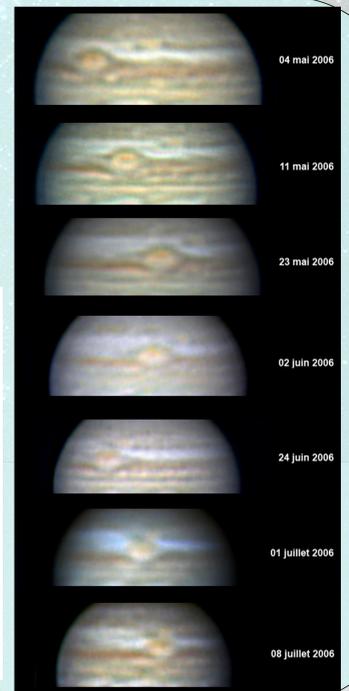
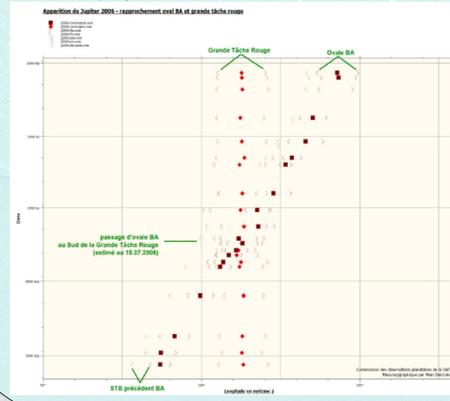
-cloud activity, orographic clouds apparition (see right, clouds on Arsia Mons in southern summer, images by Jean-Jacques Poupeau on 2005-10-03 in blue, Pascal Chauvet on 2005-10-07 in violet)

### III Jupiter (see [5])

-bands and spots (GRS, oval BA, SSTB ovals) evolutions following with production of boards with all observations during oppositions per latitude range (see left, collection of images done by Marc Delcroix)

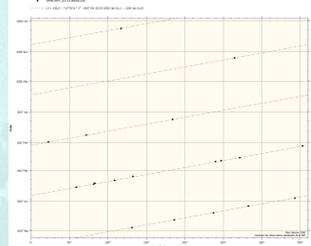
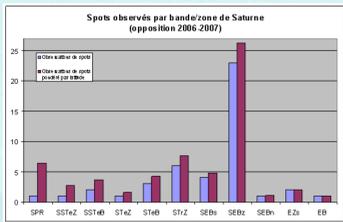
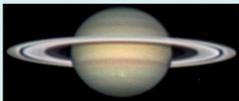
-drift rates measurement compared to other amateur associations works (BAA, ALPO) (see below, analysis of measures done by Marc Delcroix)

- participation to worldwide Jupiter amateur observations project (JUPOS)



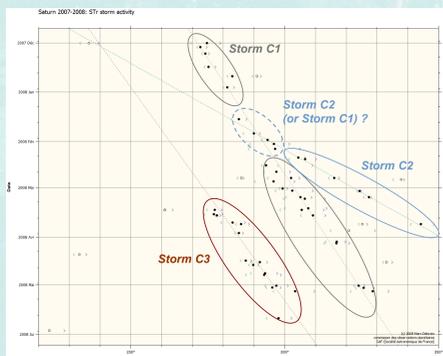
### IV Saturn (see [6])

-spots and storms activity tracking, communicated to professional astronomers (see right, image by Jean-Jacques Poupeau 2008-02-23) (see below, analysis on 2006-2007 apparition done by Marc Delcroix)



-drift rates calculation, compared with Voyager/HST/Cassini wind profiles to detect jets' speed evolutions (see above right, analysis done on SEBz spot in 2006-2007 apparition by Marc Delcroix)

-focus on seasonal effects on Saturn's atmosphere (see right, images by Christophe Pellier)



-observation of storms evolutions related to radio SEDs (Saturn Electrostatic Discharges) activity with Cassini's team (see left, 2008 measures and analysis by Marc Delcroix)

-observation of satellites transits

### V Uranus, Neptune, "Remote satellites"

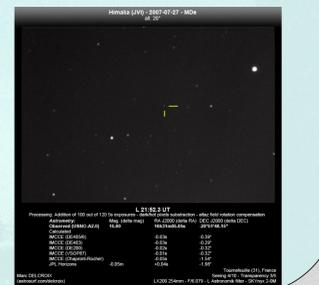
-polar flattening on Uranus (see right, image by Marc Delcroix)

-albedo difference detection attempts on Uranus

-photometry/astrometry of :

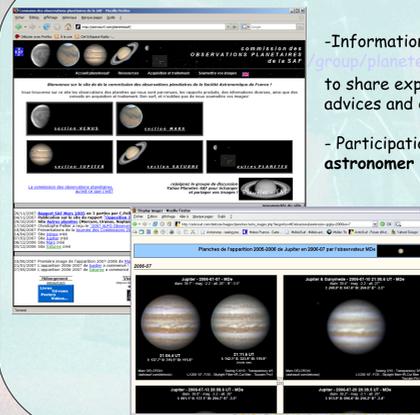
- Jupiter and Saturn faint satellites (magnitude>15: Phoebe (SIX), Himalia (JVI), Elaria (JVII))

- Uranus and Neptune satellites (Ariel, Titania, Oberon, Triton)



### VI Communication:

-Information exchange via e-mail list ([group.planetessaf@wanadoo.fr](mailto:group.planetessaf@wanadoo.fr)) to share experience, observations and provide valuable advices and data to the astronomical community and general public  
 - Participation of commission members to the global planetary amateur astronomer community



- Publication of :  
 - all observations (images gallery, see left)  
 - guides on how to provide valuable images  
 - ephemeris (planets, satellites, phemus, spots)  
 - all reports  
 - resources and contacts  
 on internet (<http://www.astrosurf.com/planetessaf/>) with 600 visitors/month

### References:

- [1] Christophe Pellier, "Venus en 2004", Observations & Travaux 2007
- [2] Christophe Pellier, "L'apparition de Mars en 2003", Observations & Travaux 2006
- [3] Christophe Pellier, "What Happened on 17th October 2005 in Chryse ?", Communications in Mars Observations #325, Nov. 25th 2006
- [4] Christophe Pellier, "L'apparition en 2005 de la planète Mars", Observations & Travaux 2008
- [5] Marc Delcroix, "Opposition de Jupiter 2005-2006: observations de l'hémisphère sud", Observations & Travaux 2008
- [6] Marc Delcroix, "Opposition de Saturne 2006-2007", Observations & Travaux (to be published)

