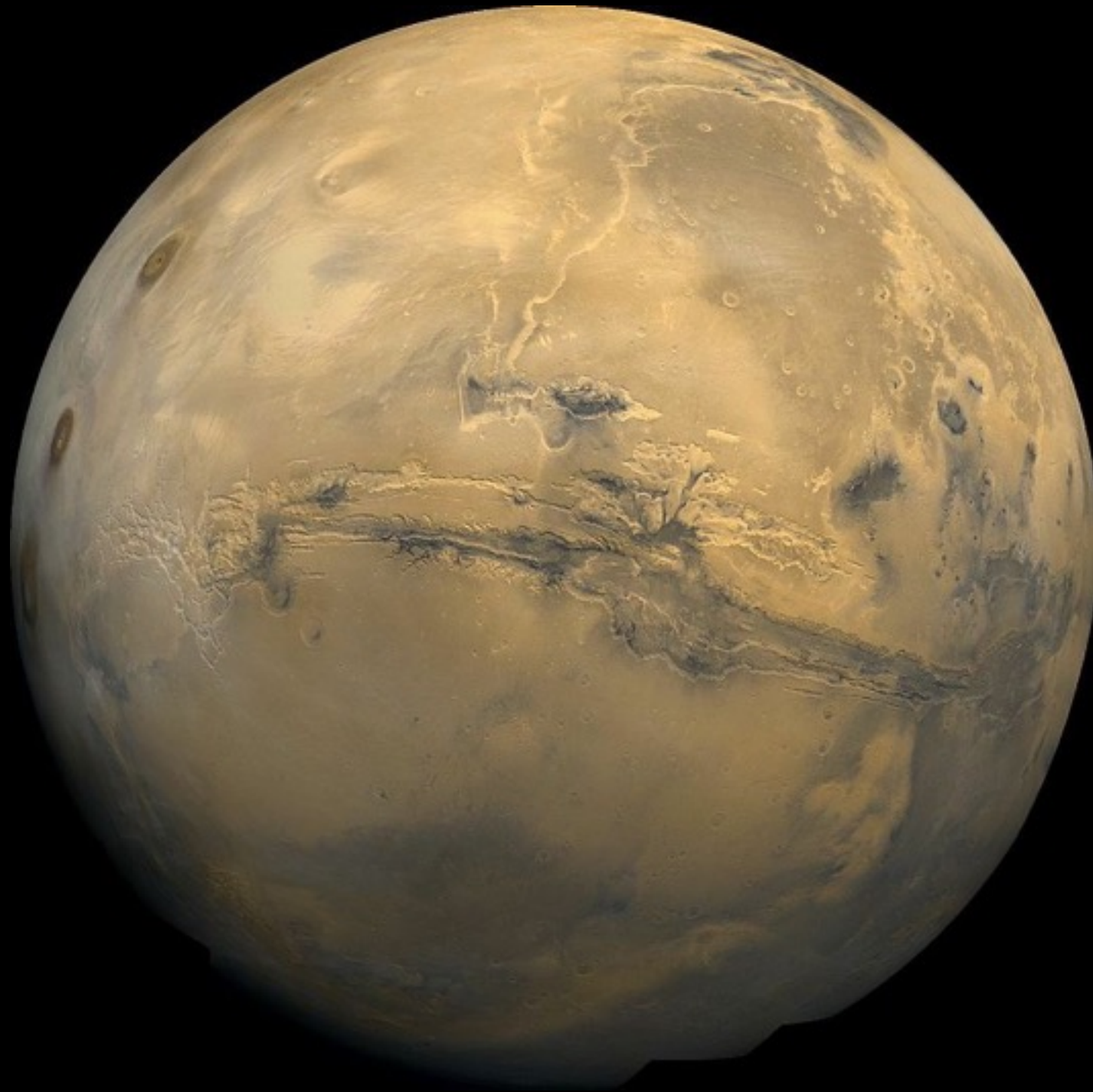


Investigating the Martian South Polar Seasonal Fan Deposits with Planet Four

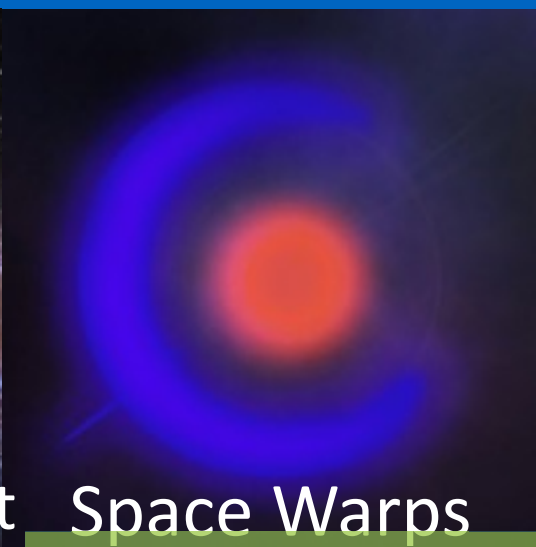


Meg Schwamb
(ASIAA)

ZOO NIVERSE



Andromeda Project



Space Warps



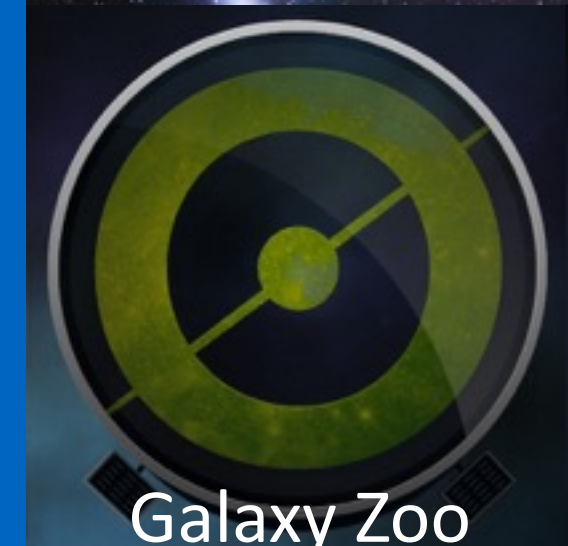
Planet Four



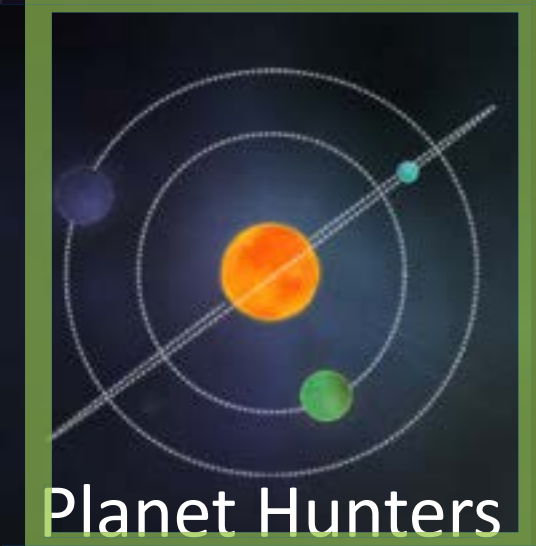
Disk Detective



Asteroid Zoo



Galaxy Zoo



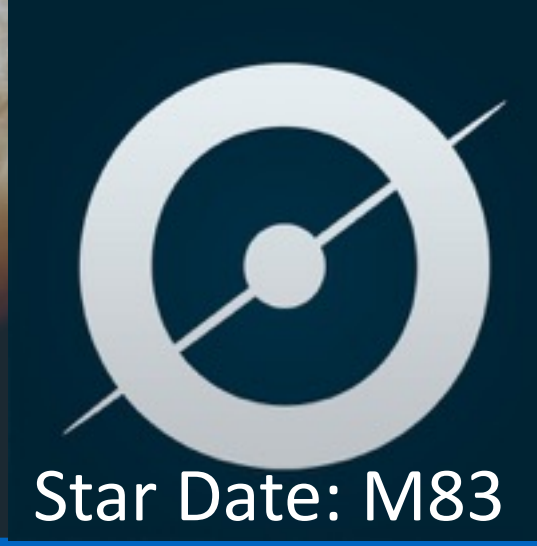
Planet Hunters



Radio Galaxy Zoo



SunSpotter



Star Date: M83



Milky Way Project



Solar Storm Watch



Moon Zoo

<http://www.zooniverse.org>



Candy Hansen (PSI)
Planet Four PI



Chris Lintott (Zooniverse PI)
(Oxford University, Adler Planetarium)



Stuart Lynn (Adler)



Anya Portyankina (LASP)



K.-Michael Aye (UCLA)



Meg Schwamb (ASIAA)



Arfon Smith (Github)



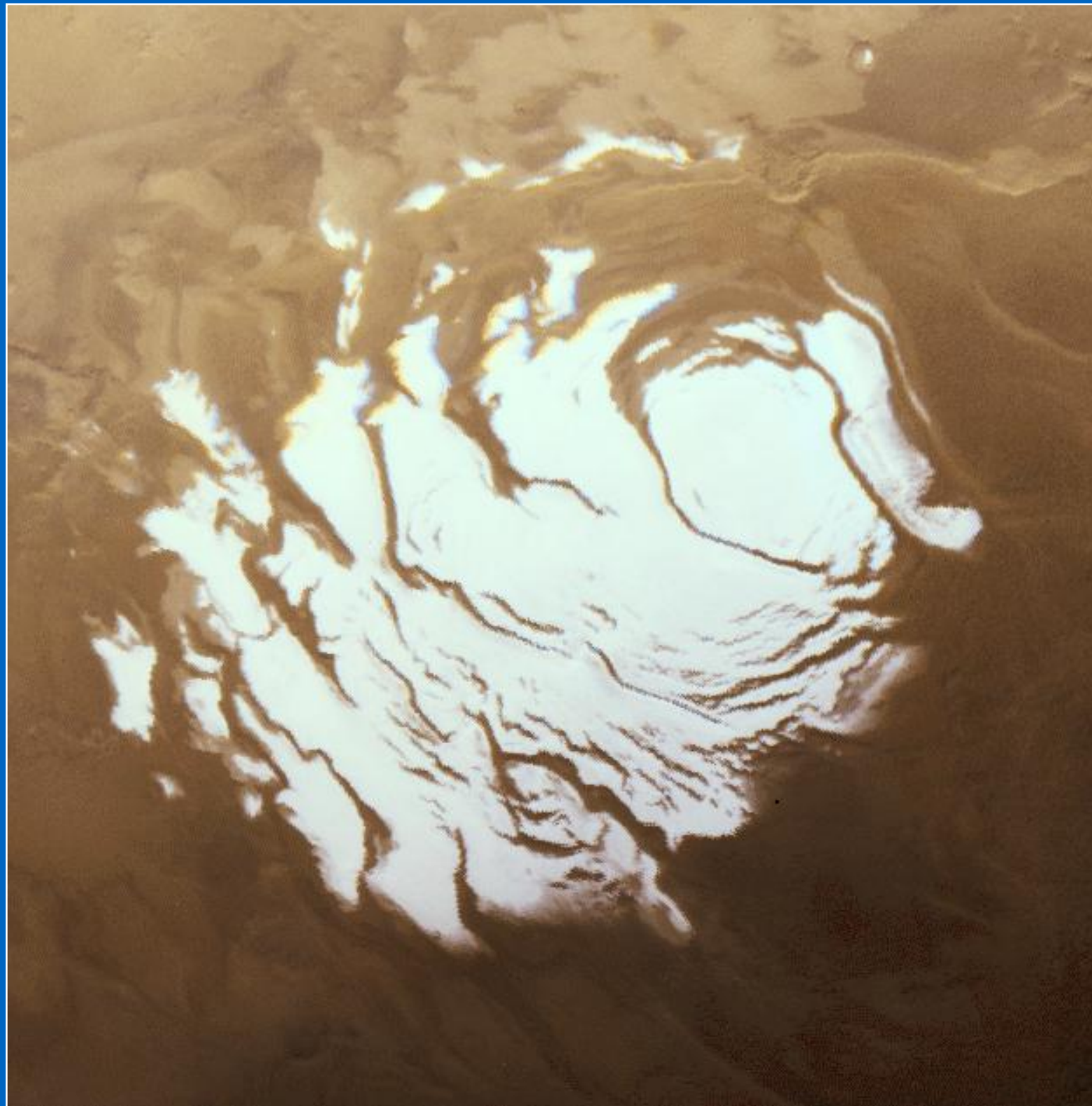
Chris Snyder (Adler)



David Miller (Adler)



Brian Carstensen (Oxford)



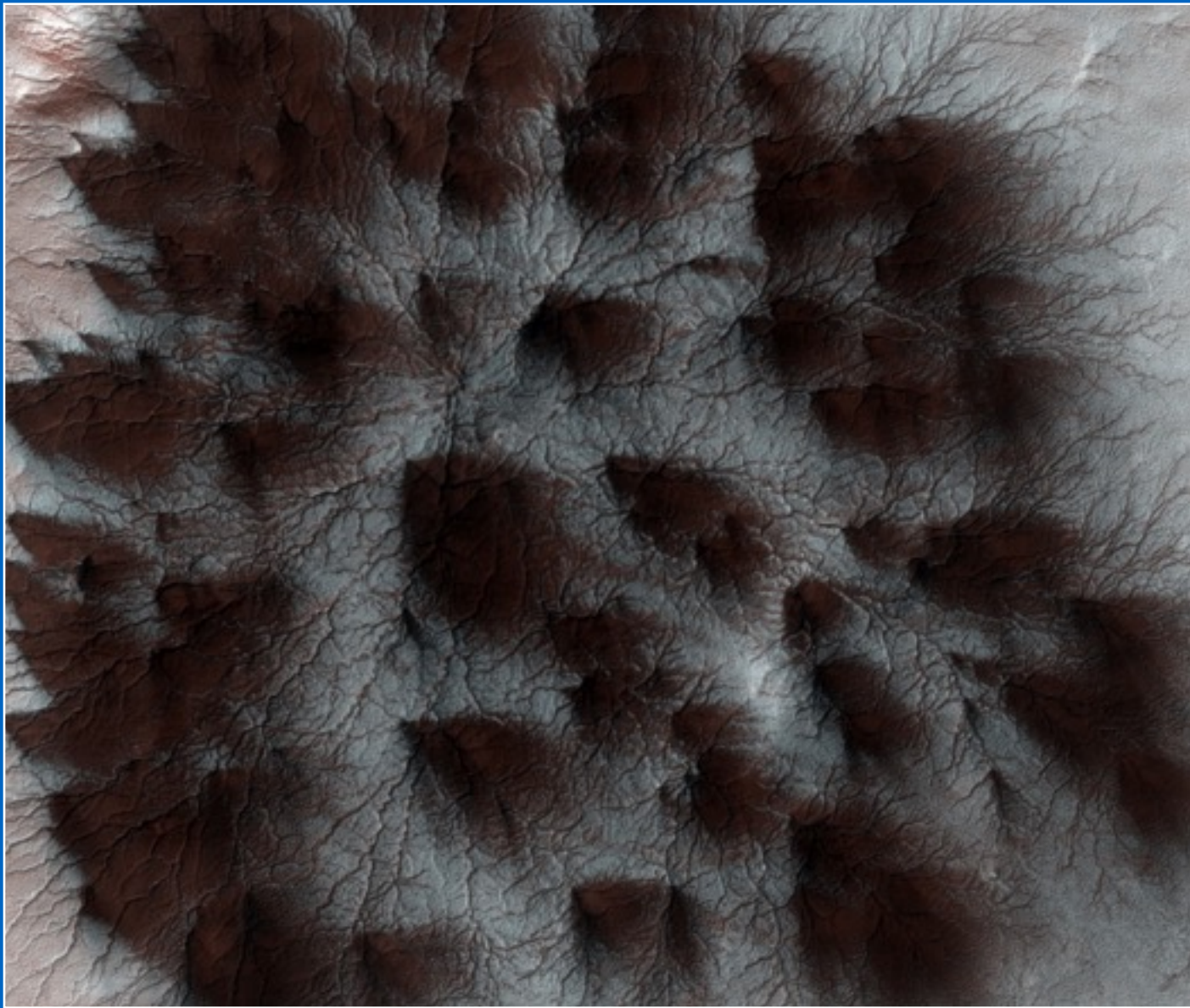
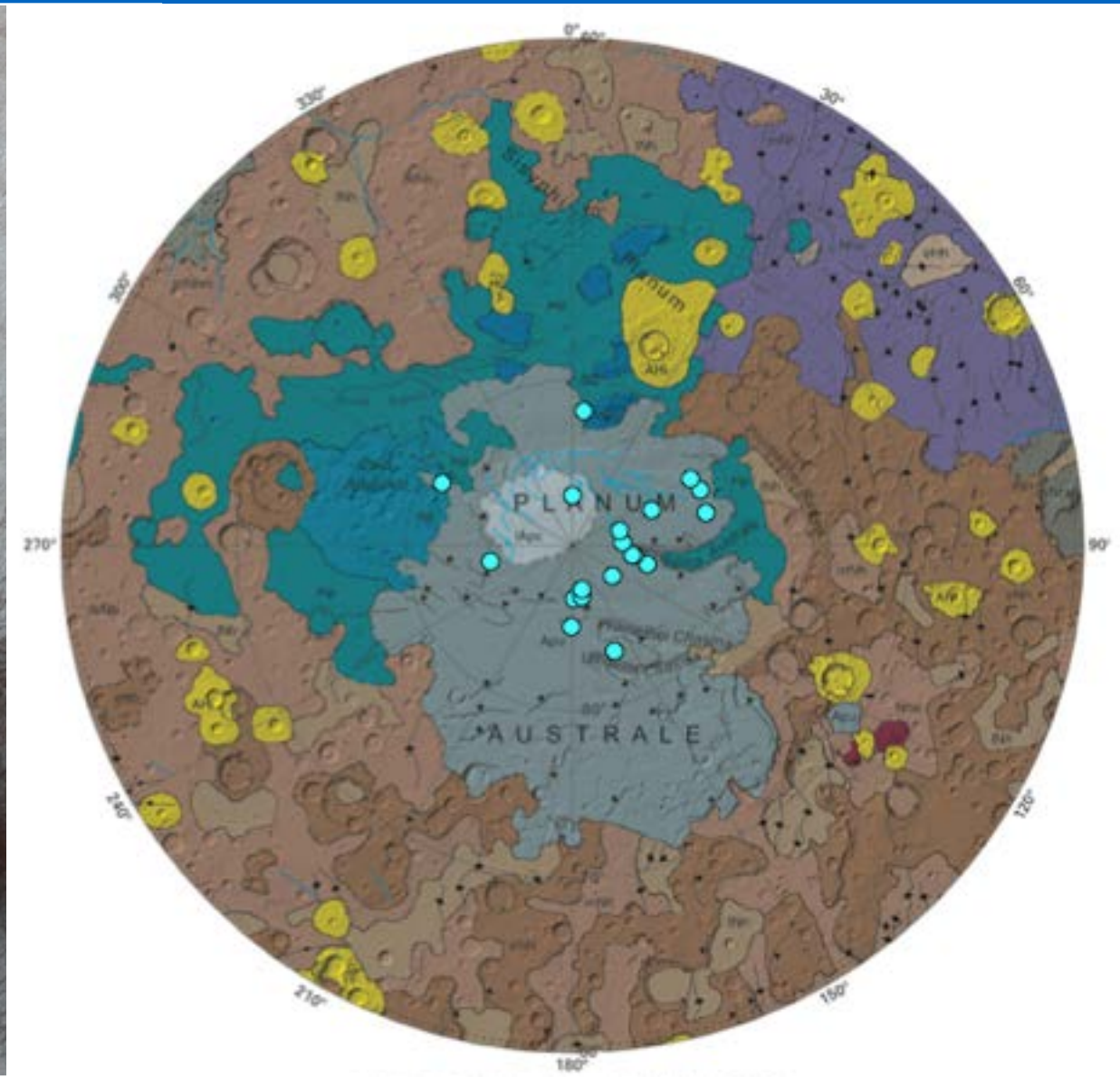


Image credit: NASA/JPL/University of Arizona



Adapted from Tanaka et al. (2014)

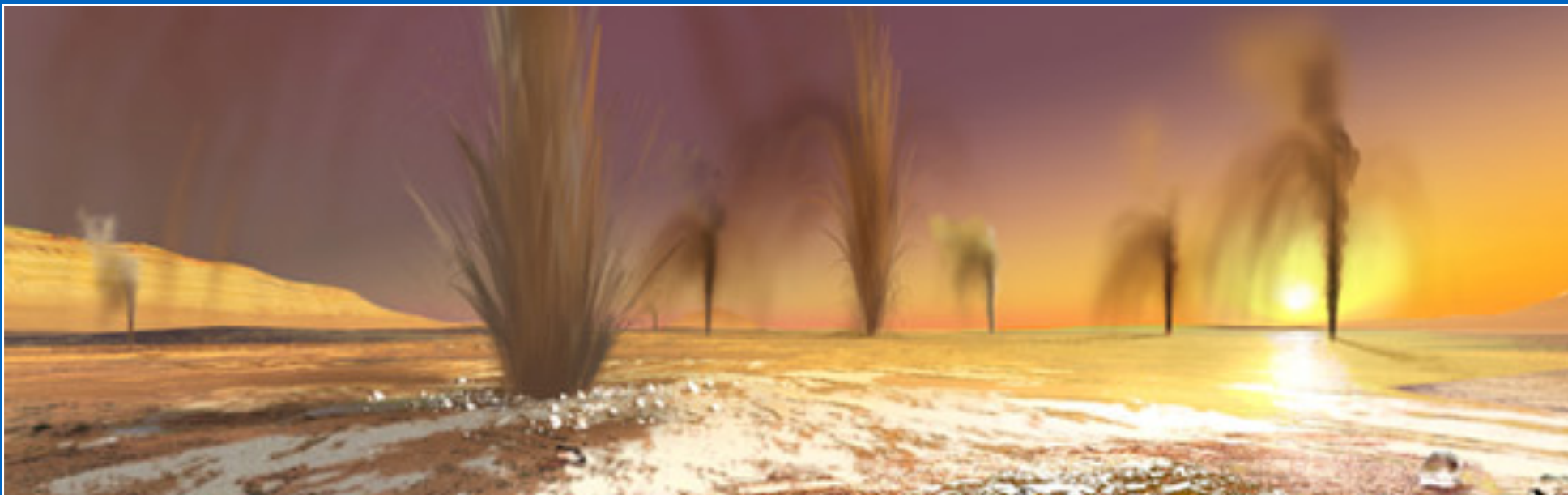
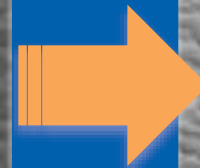
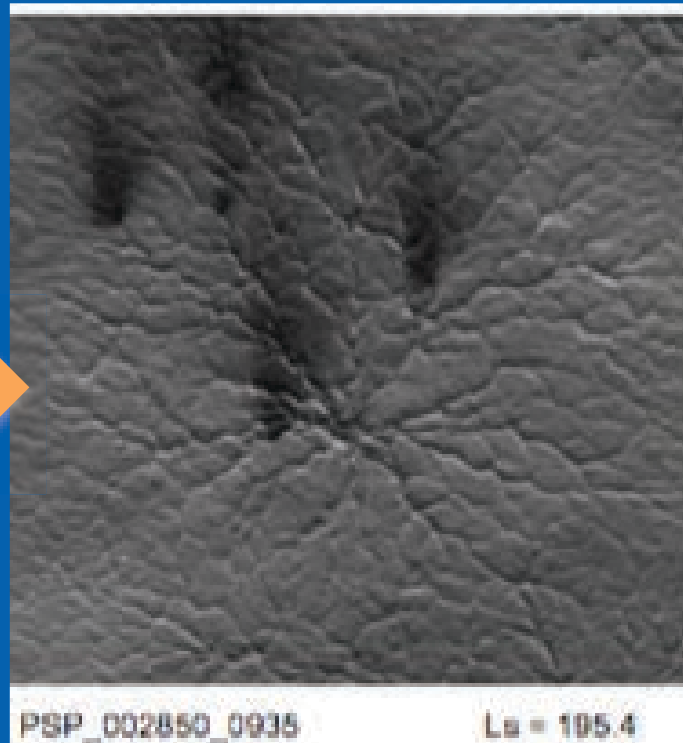
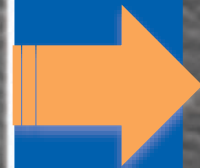
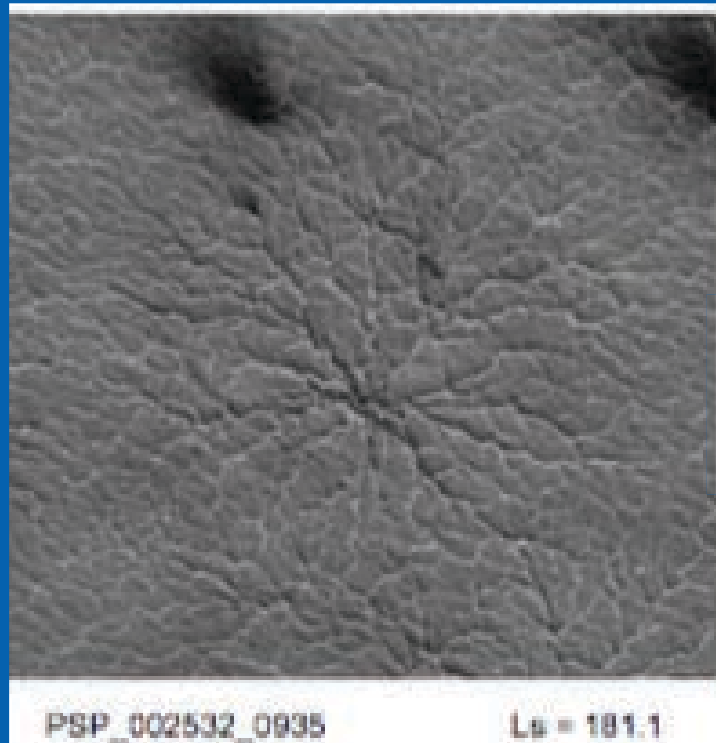


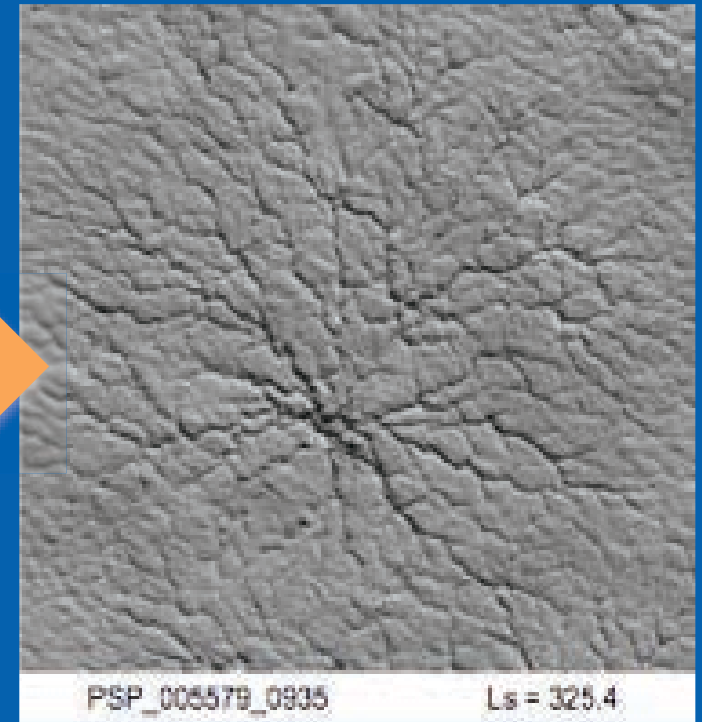
Image credit: Arizona State University/Ron Miller

Spider Time Lapse

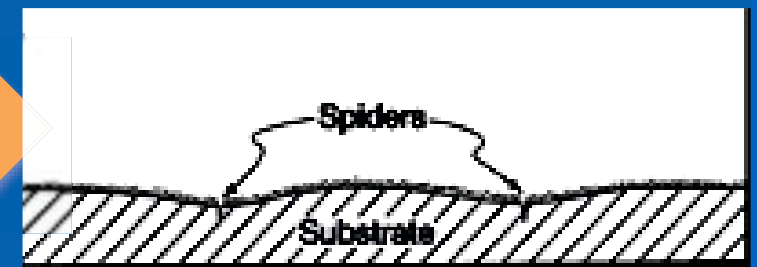
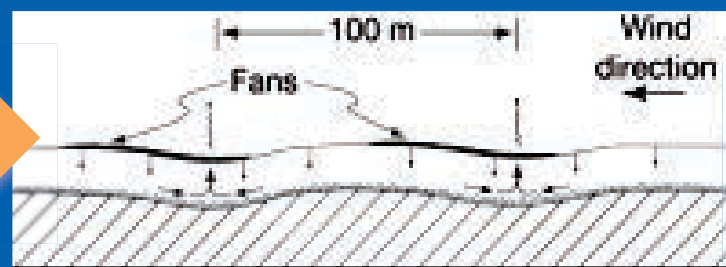
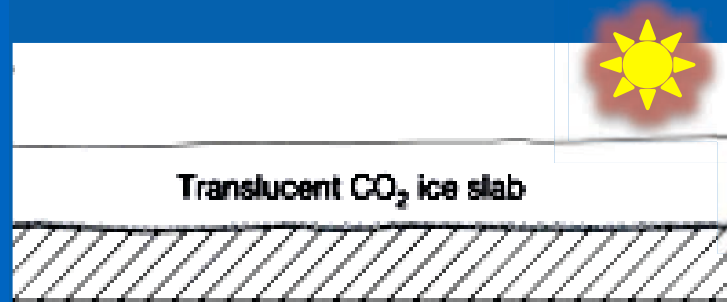
Spring



Mid Summer: No Ice Left



Hansen & McEwen, 2007



The Sun heats and sublimates the base of the carbon dioxide ice sheet. The carbon dioxide gas is trapped below



Carbon dioxide gas breaks out in geysers

Fans & blotches blend into the ground when the ice has disappeared

Kieffer et al. , 2006

Wind



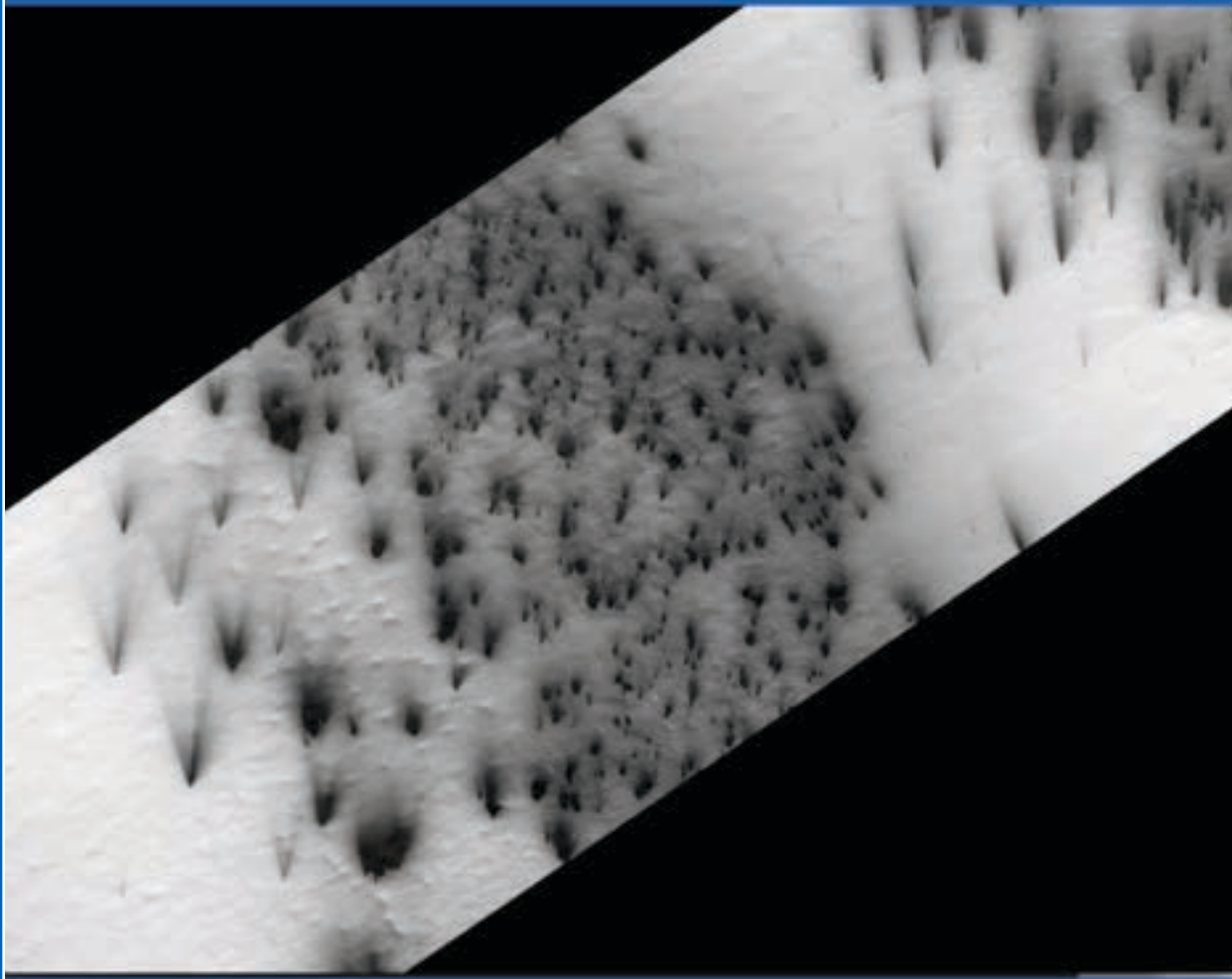
No Wind



Image credit: NASA/JPL/University of Arizona

How does the South Pole change from Winter to Winter?

Season 1



Season 2

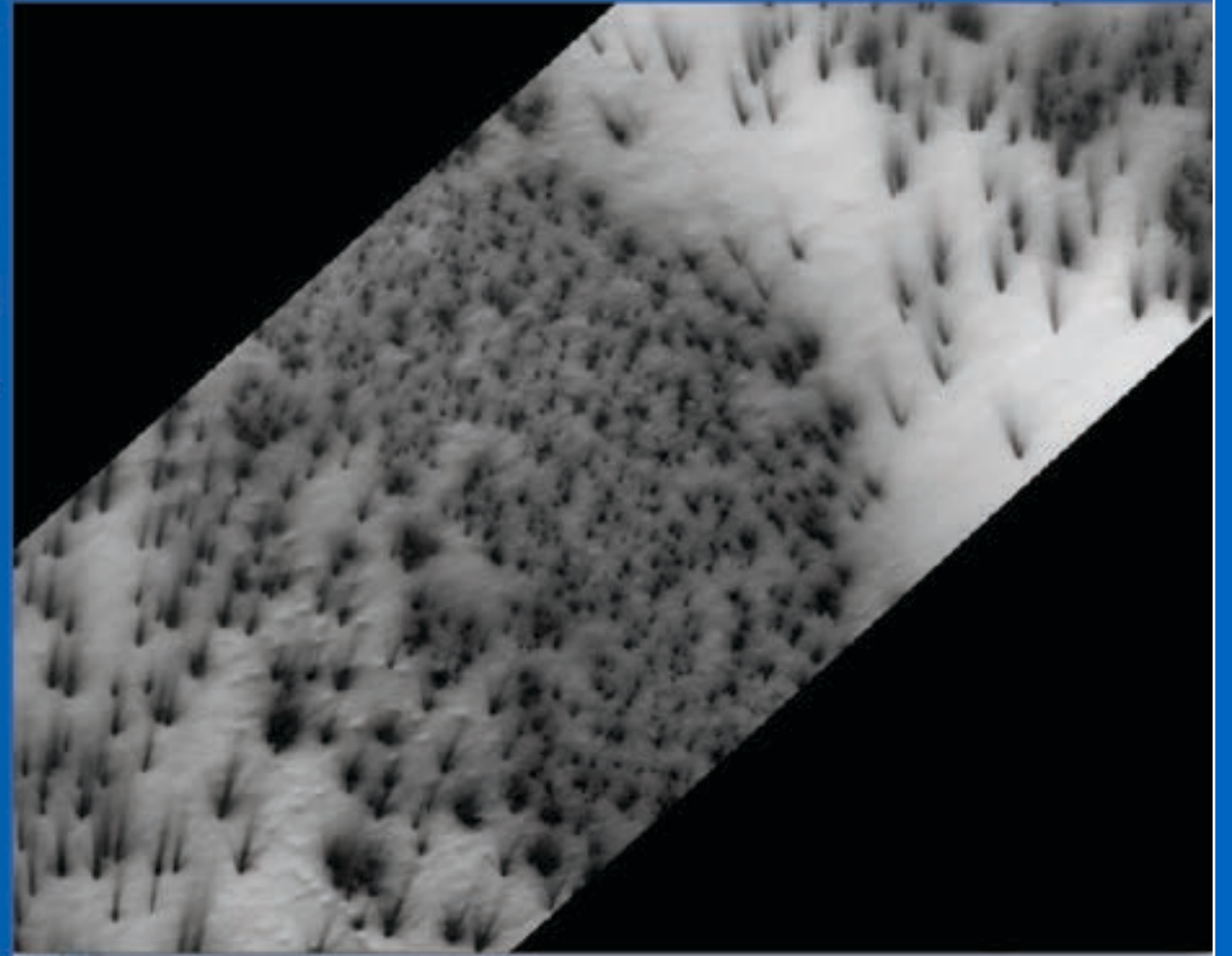
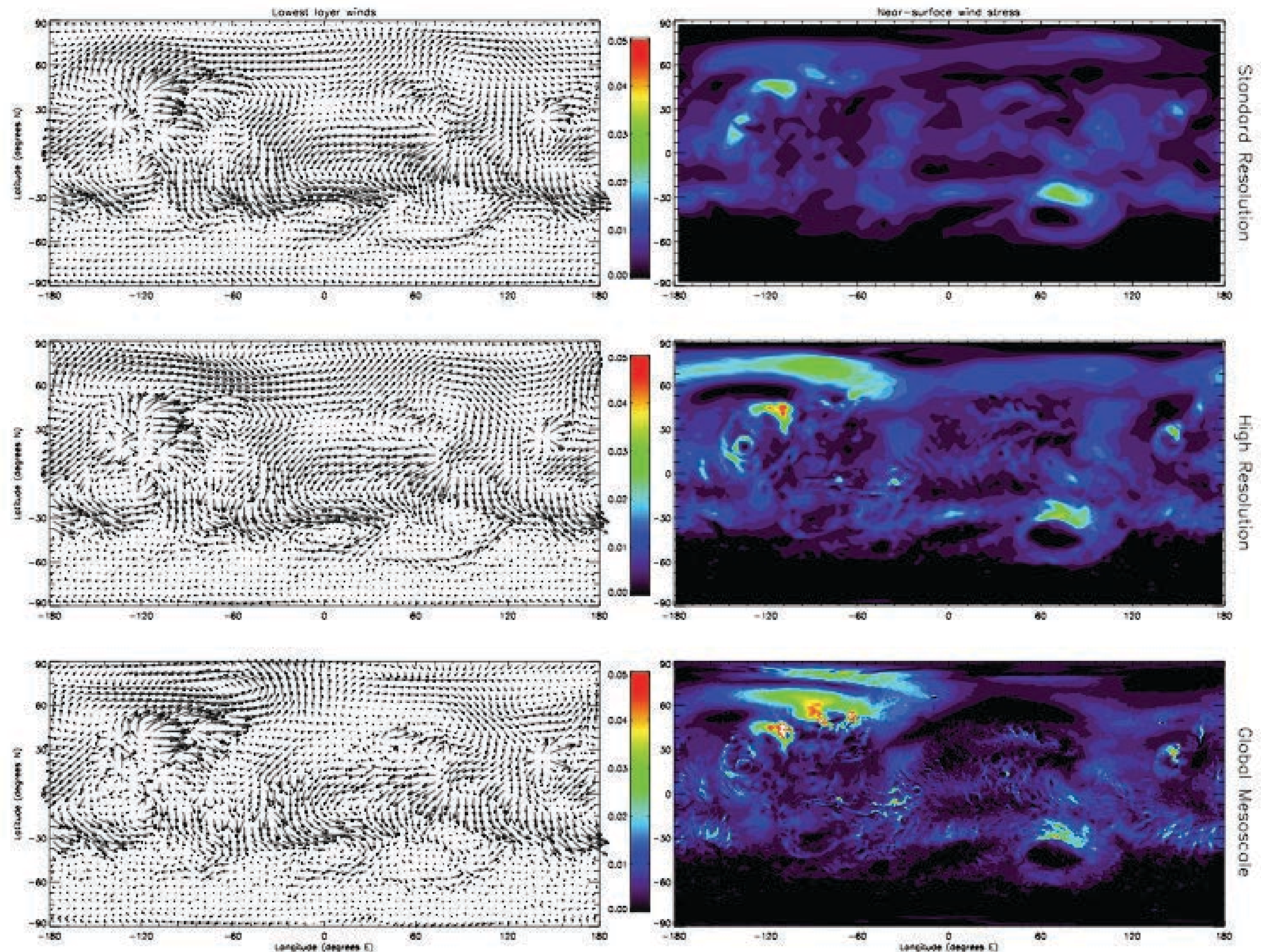
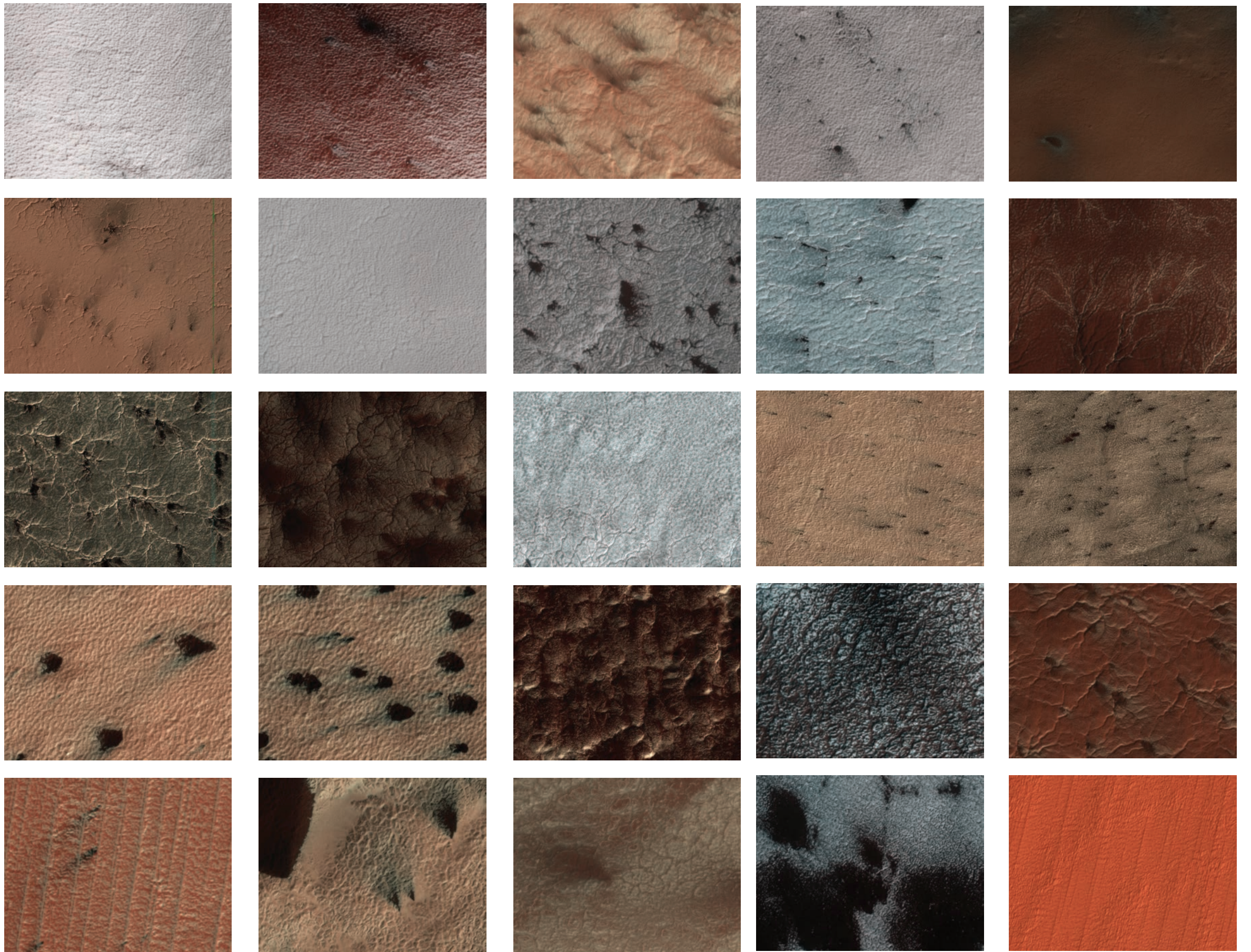


Image credit: NASA/JPL/University of Arizona

A global dust storm occurred on Mars between the two winters - how does this impact the number and size of seasonal fans and blotches?

Aim to compare to global climate models (GCMs) of wind direction and amplitude





Planet Four

122,603 volunteers have contributed in total
4,487,434 classifications since launch in January 2013



<http://www.planetfour.org>

Planet Four



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114,890

全球參與總人數

4,323,425

已分類MRO衛星影像總數

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跟我们保持联系

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Image APF0001hm2



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[#fans](#) with [#blue](#) [#frost](#) plumes

by [angi60](#) 6 hours ago

more gas jets

by [poplar11](#) 6 days ago

Lovely [#blue](#) frost [#fans](#) in these multiple fans of different colors.
One for the 'favorites' collection! Ithaca region .20/2/07

by [p.titchin](#) 5 months ago

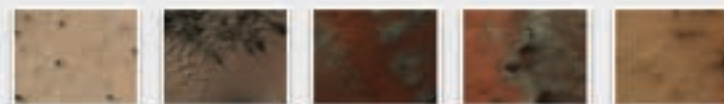
Collections

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Frost images by Freethesouls 500 images



#frost by gloria_jv 500 images



blue frost by p.titchin 103 images



Tags

[fans](#)

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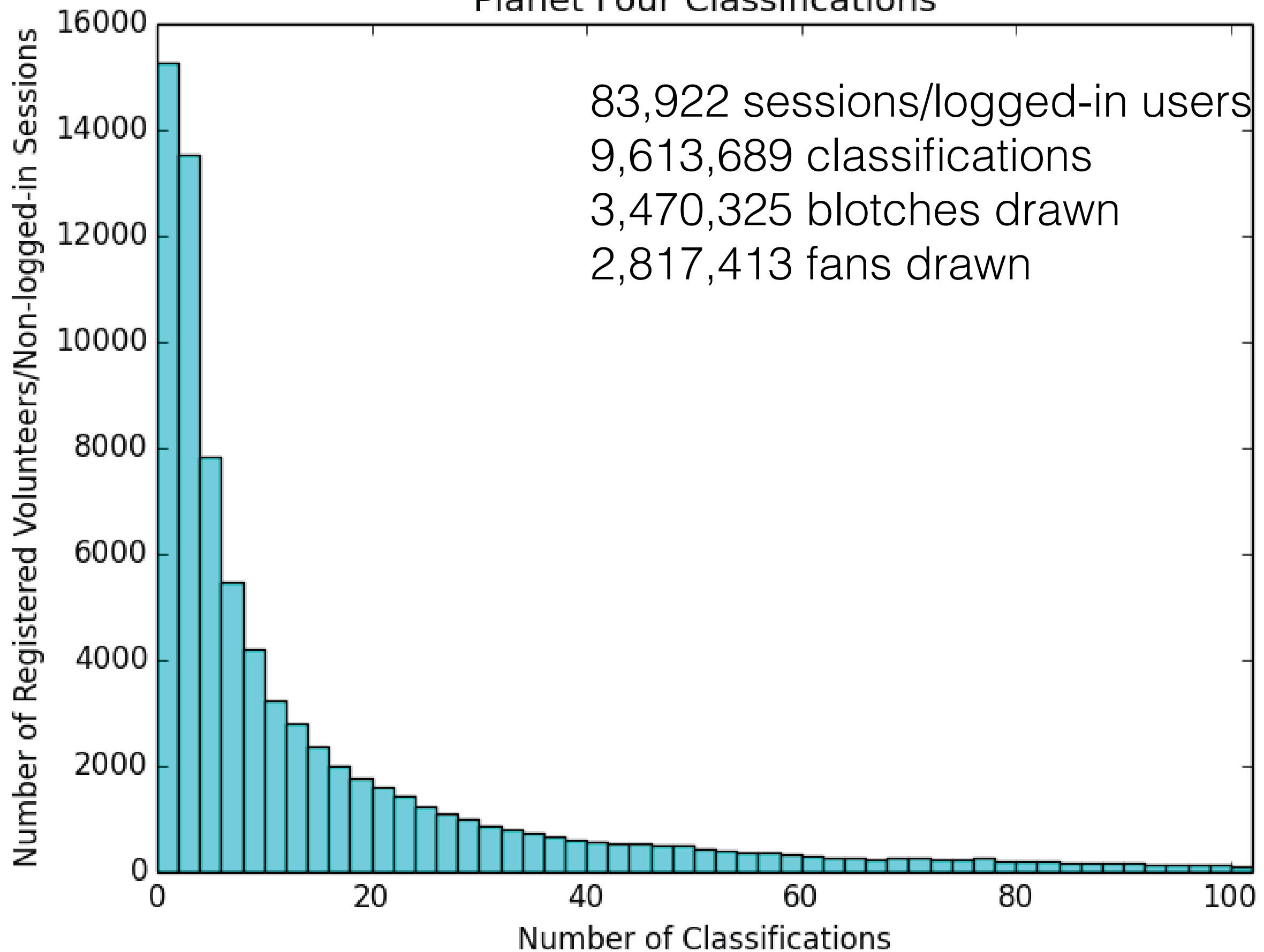
Science

Help

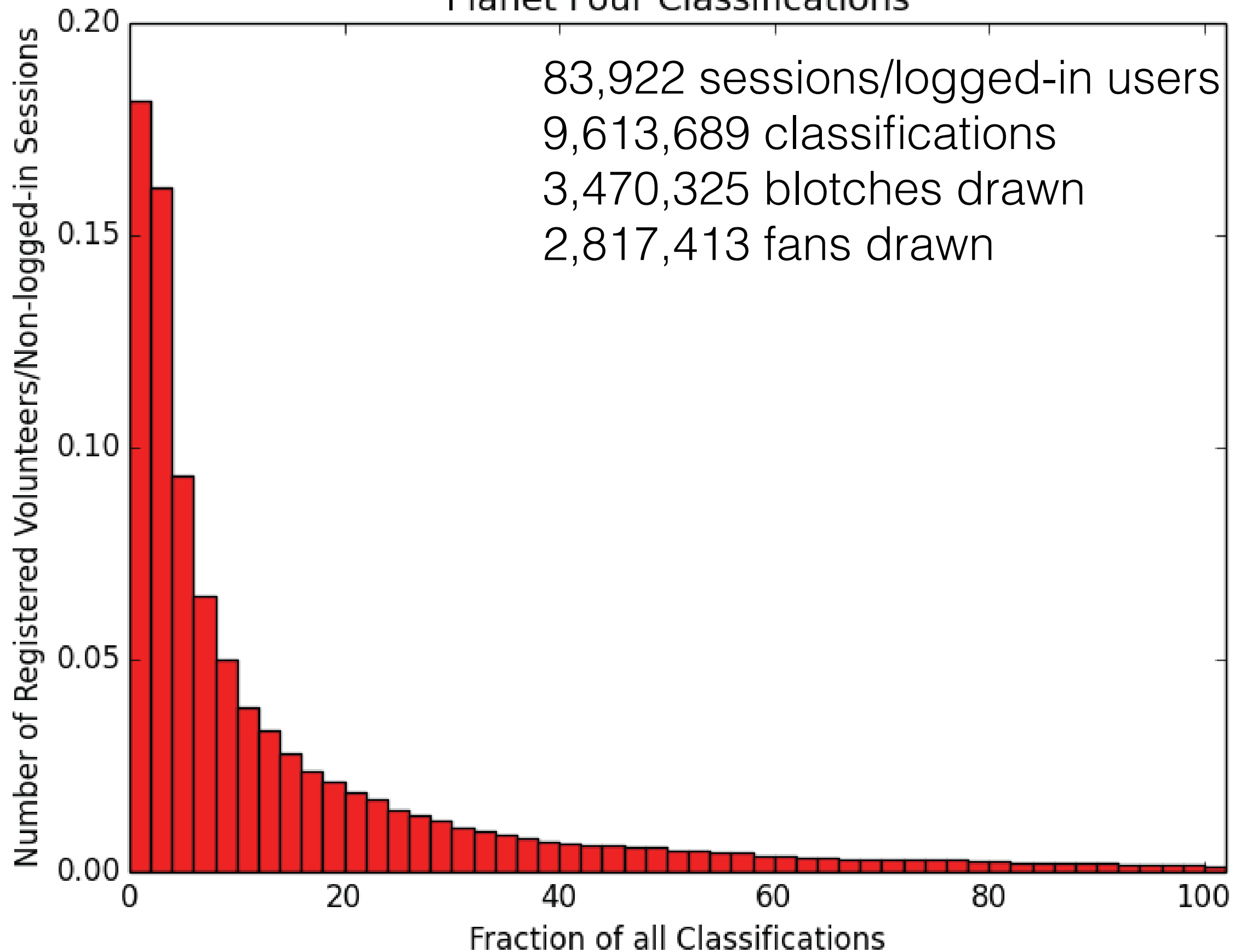
Chat

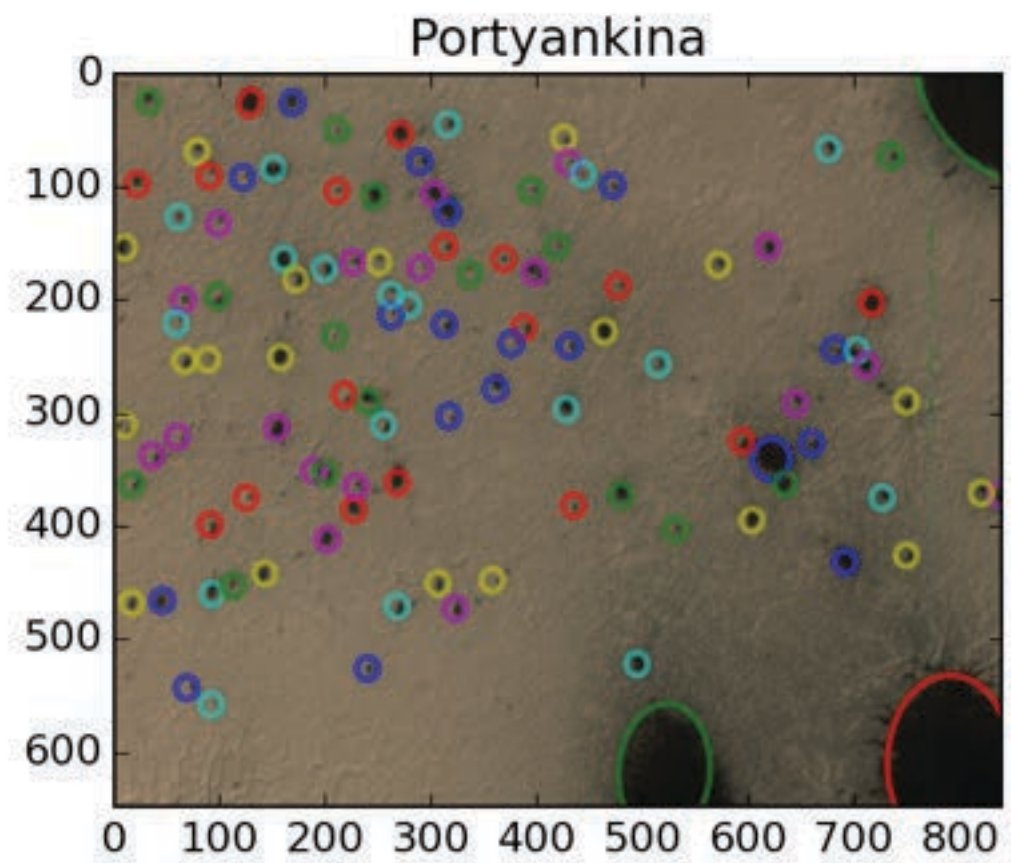
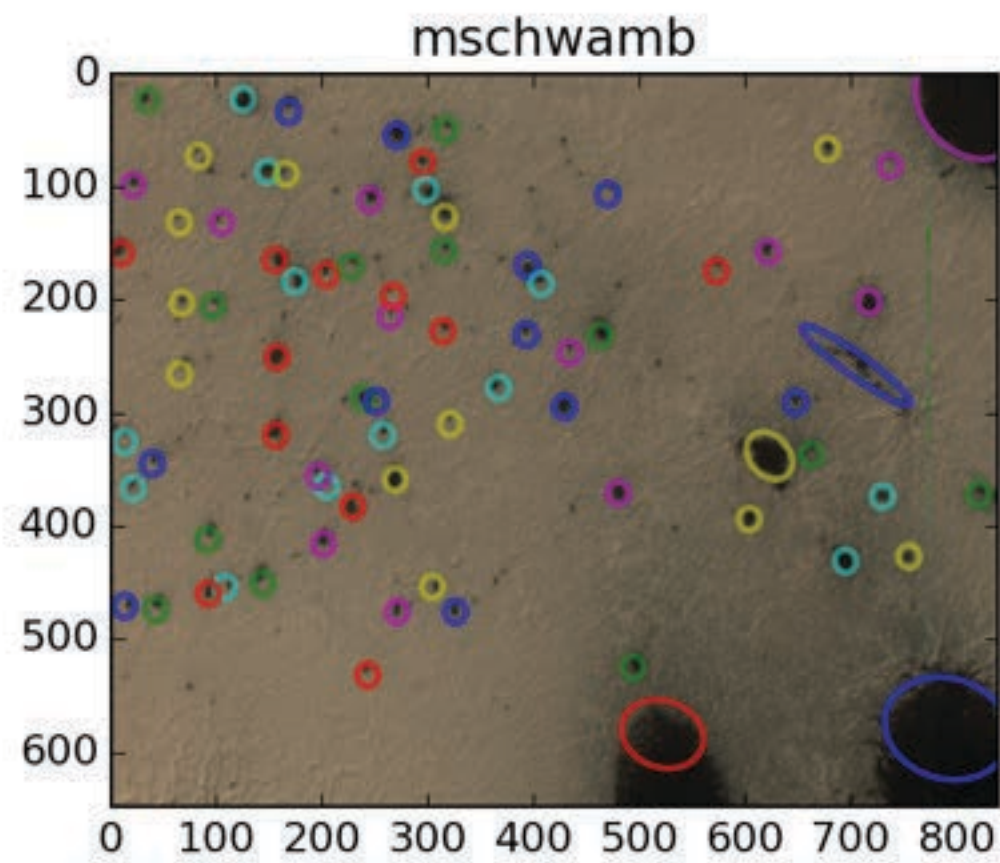
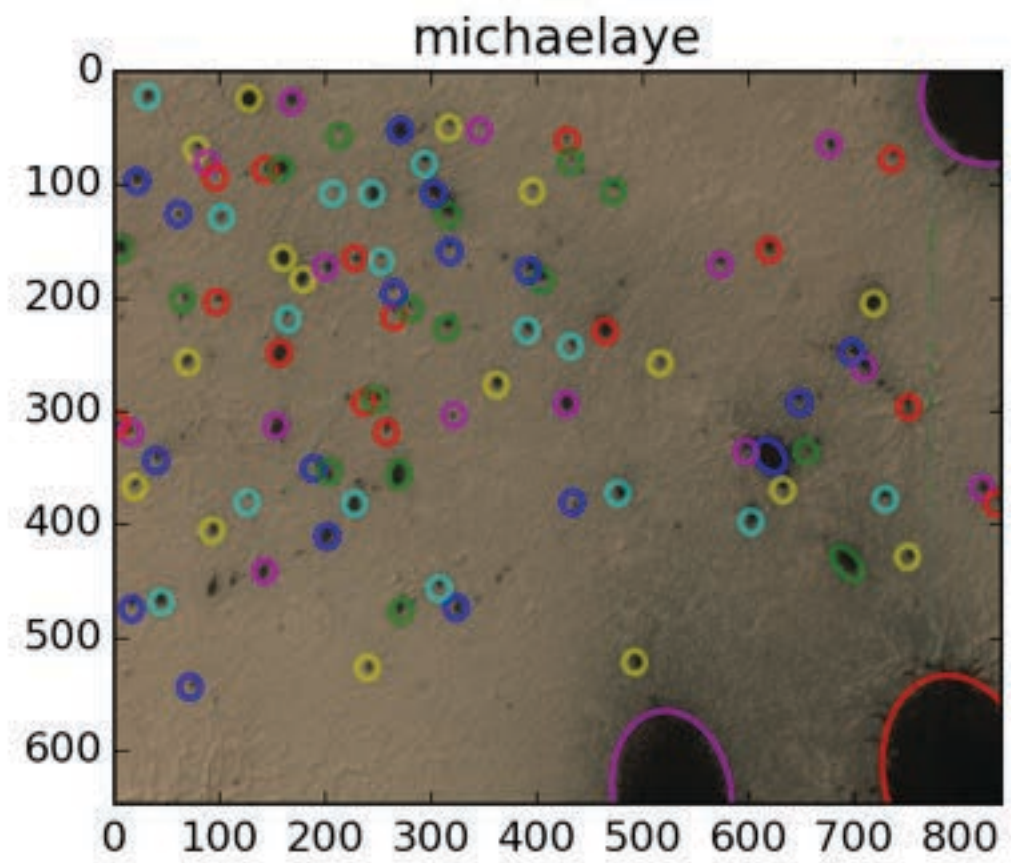
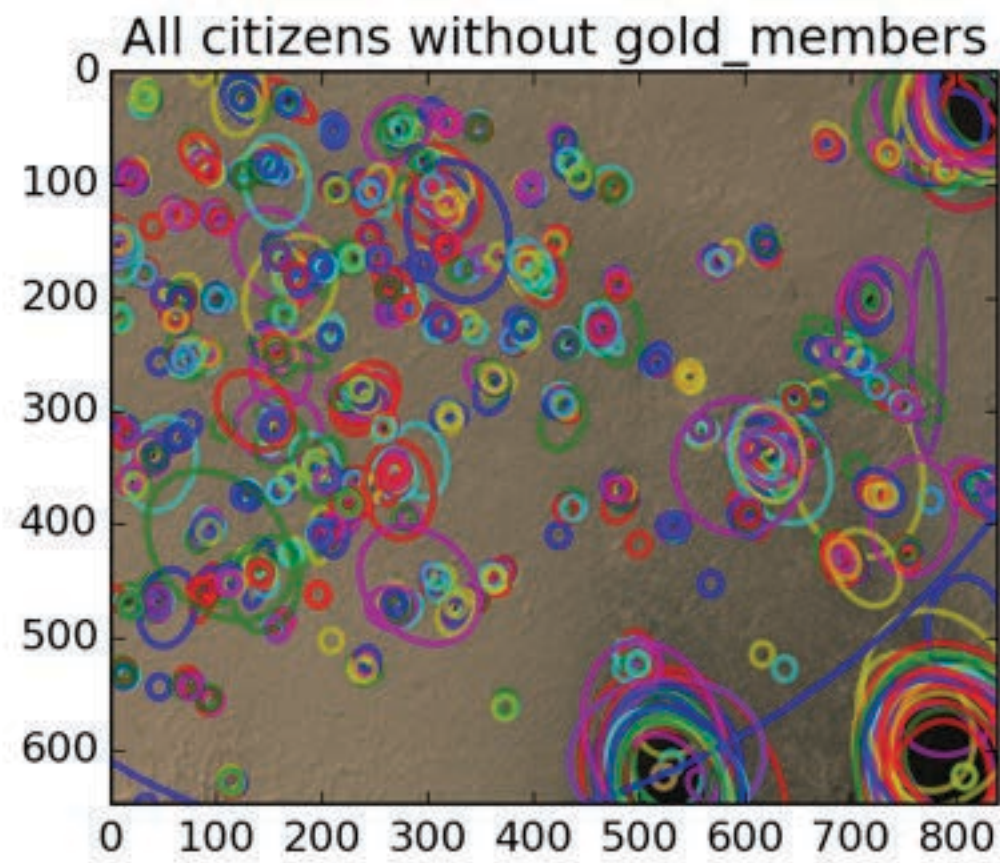
Planet Four Classifications

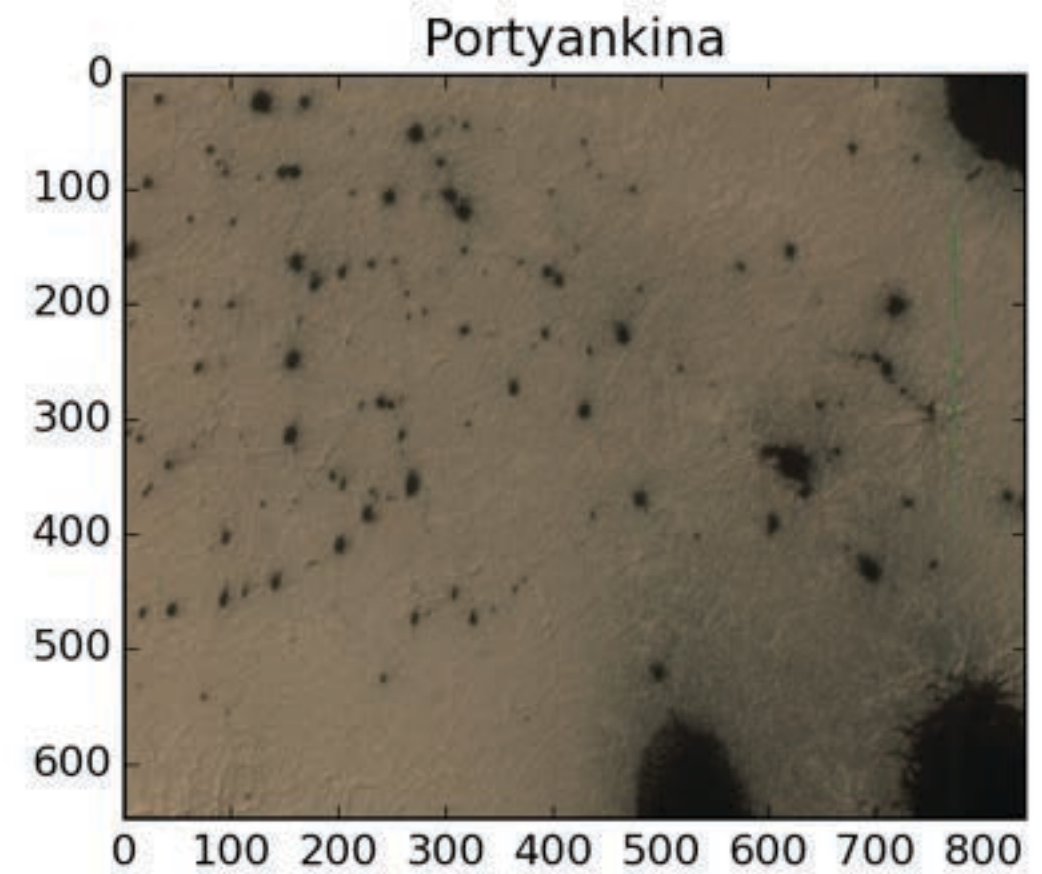
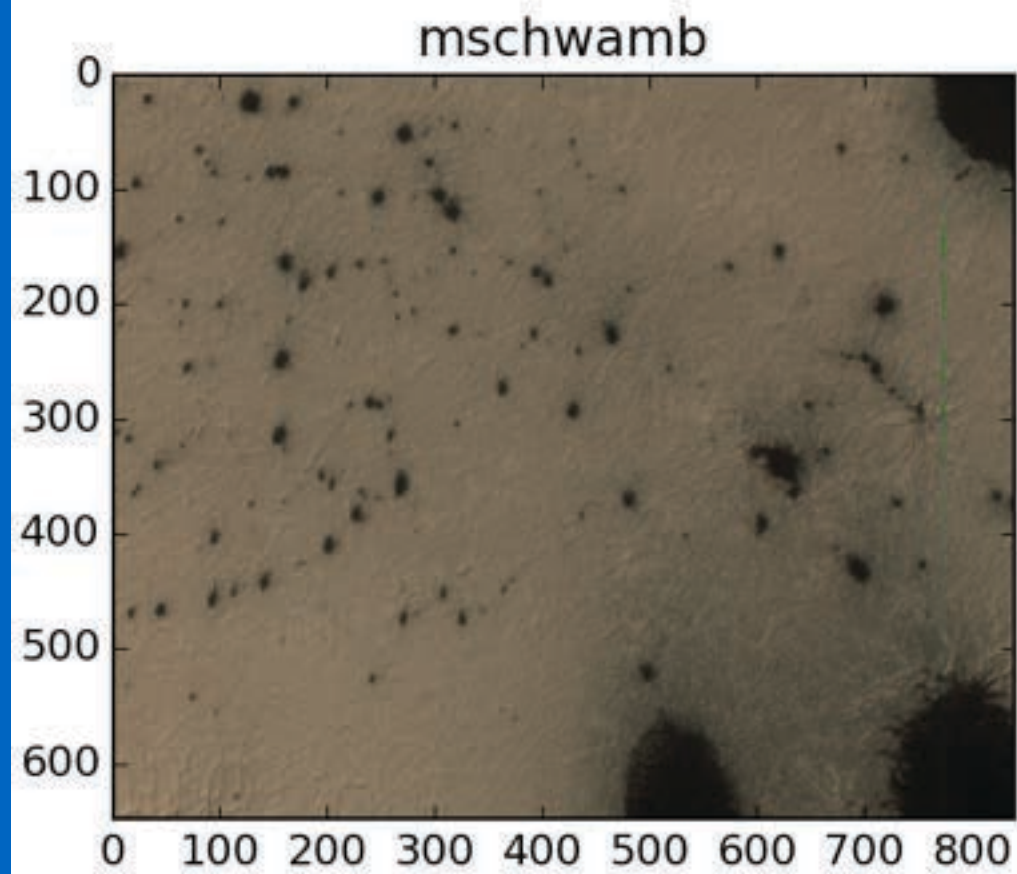
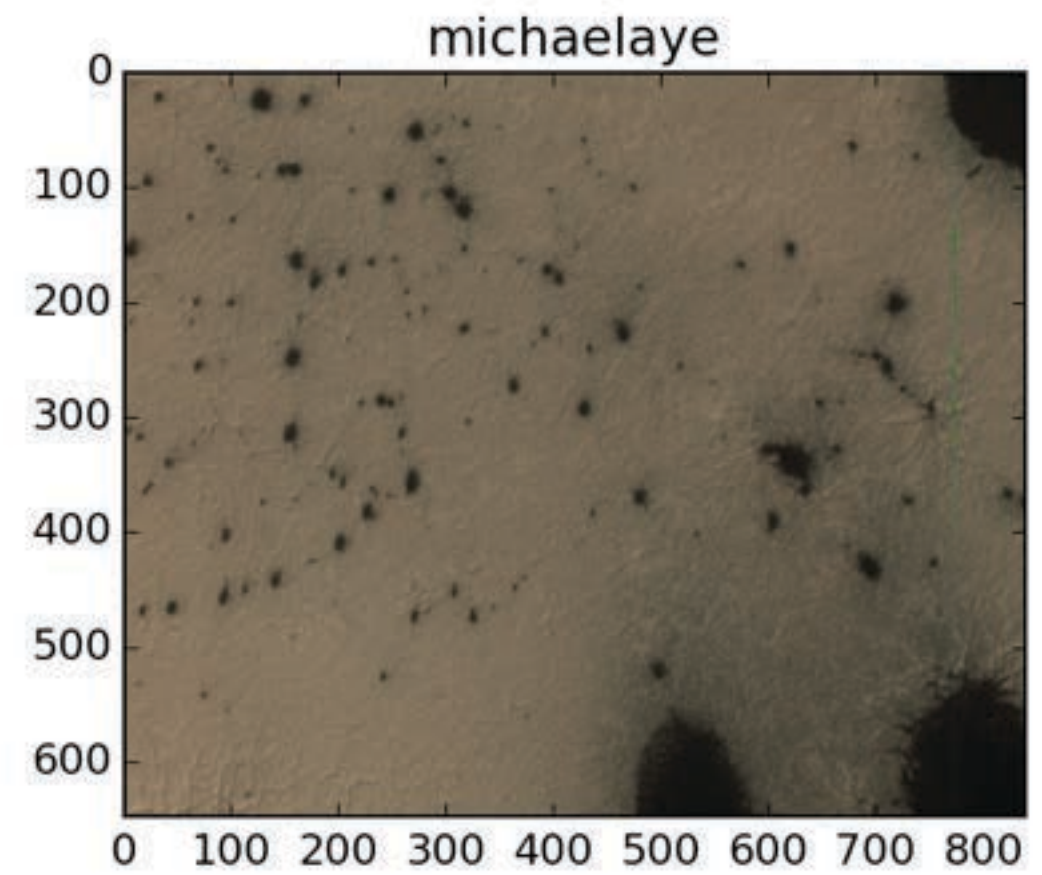
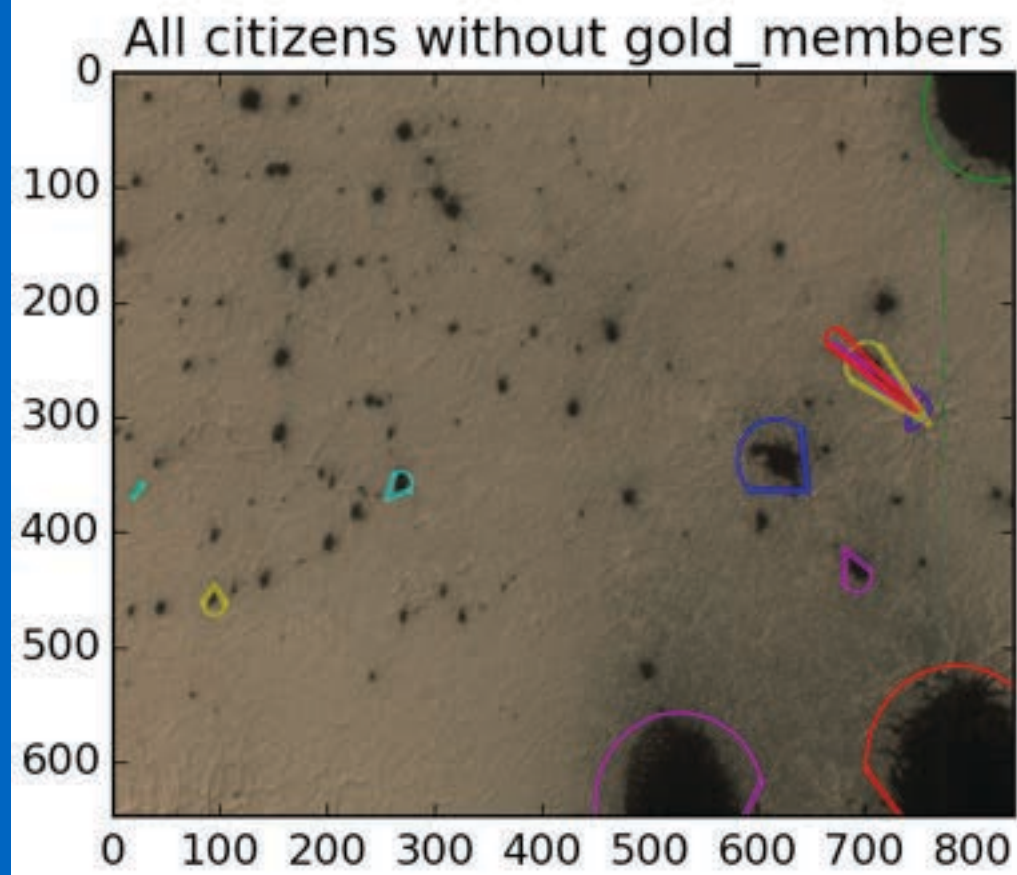
83,922 sessions/logged-in users
9,613,689 classifications
3,470,325 blotches drawn
2,817,413 fans drawn

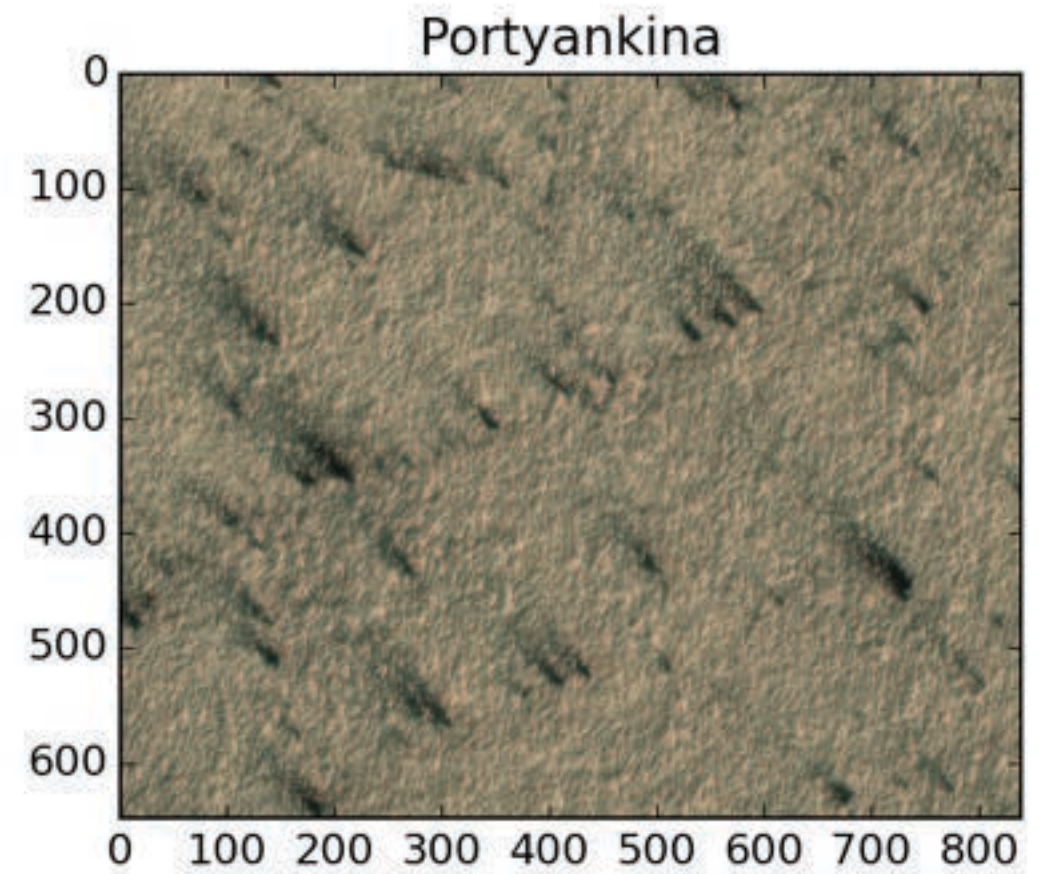
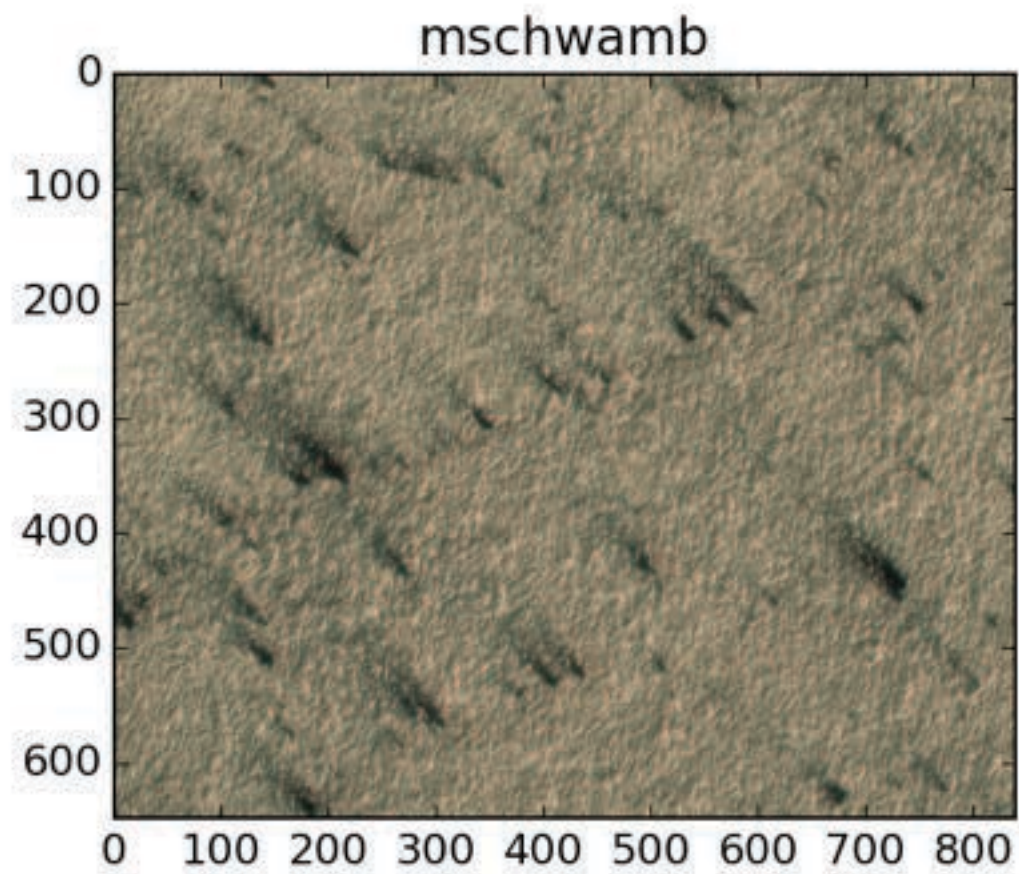
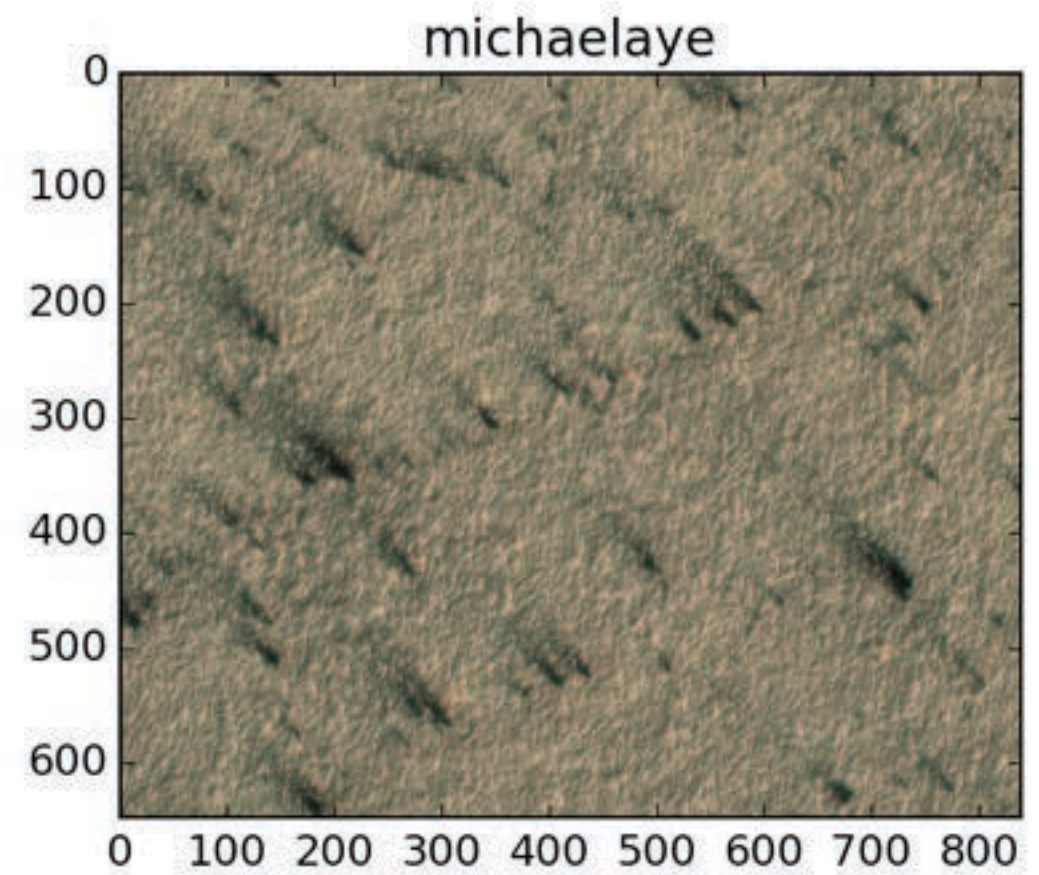
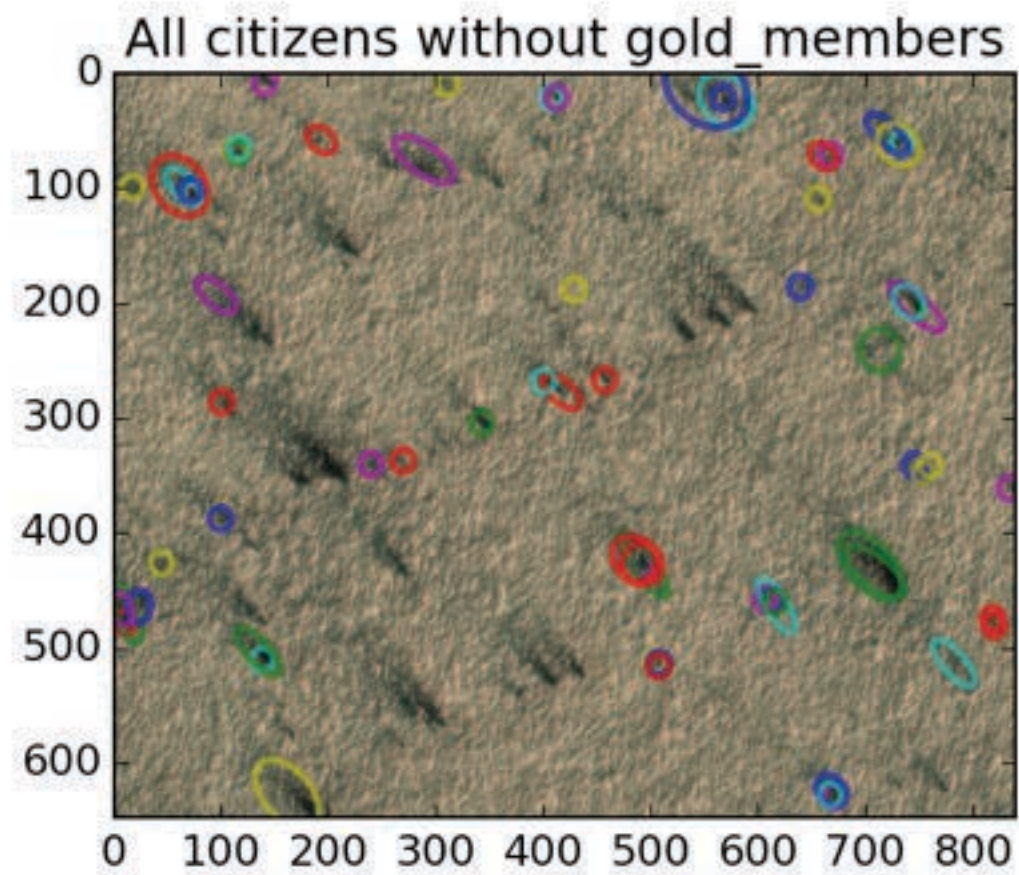


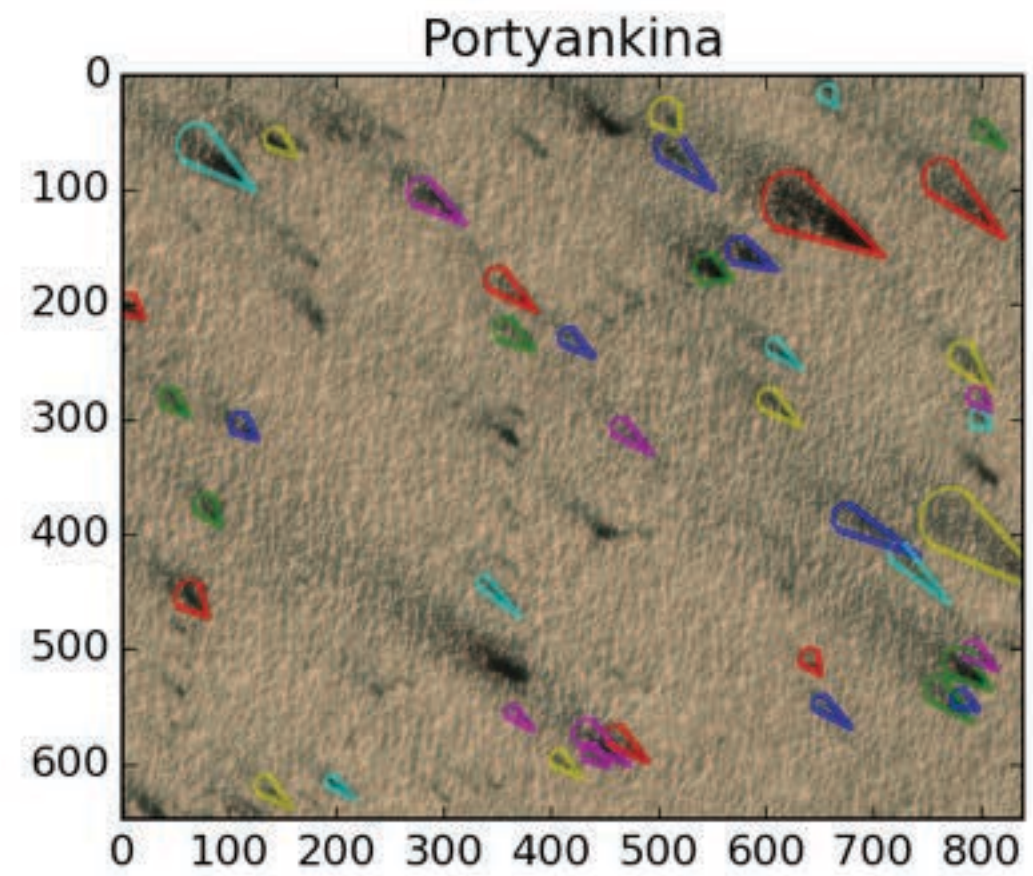
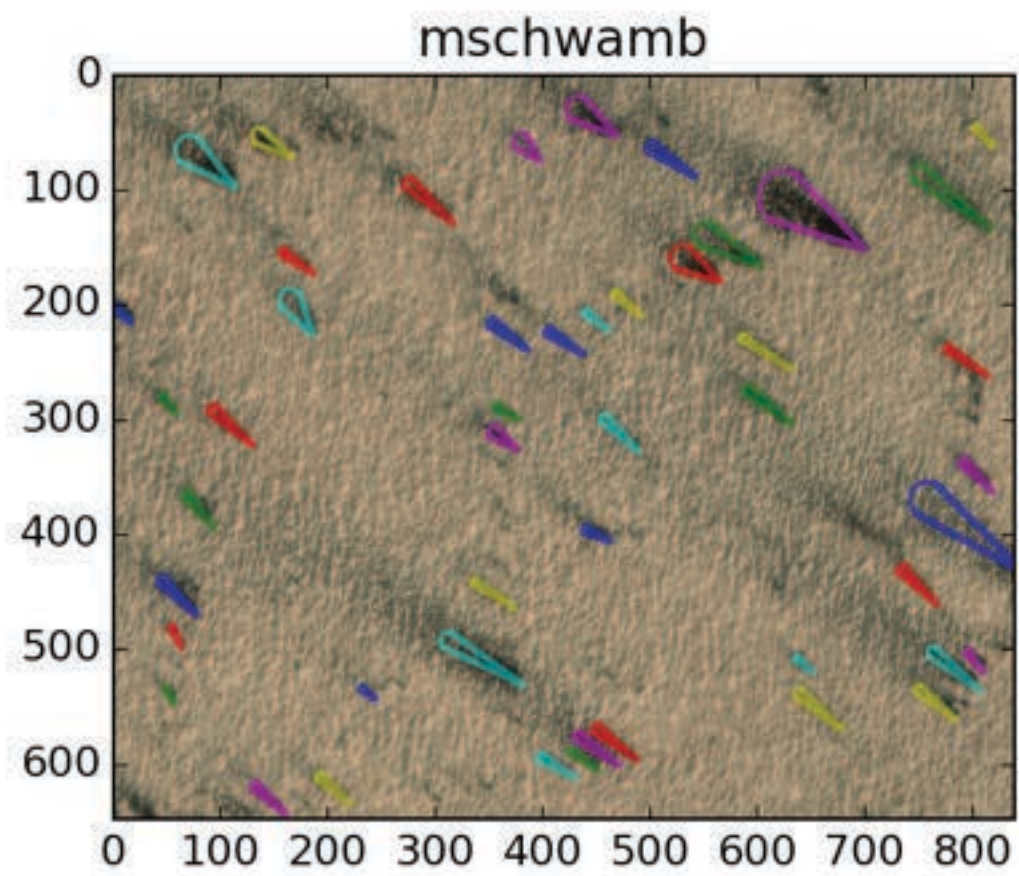
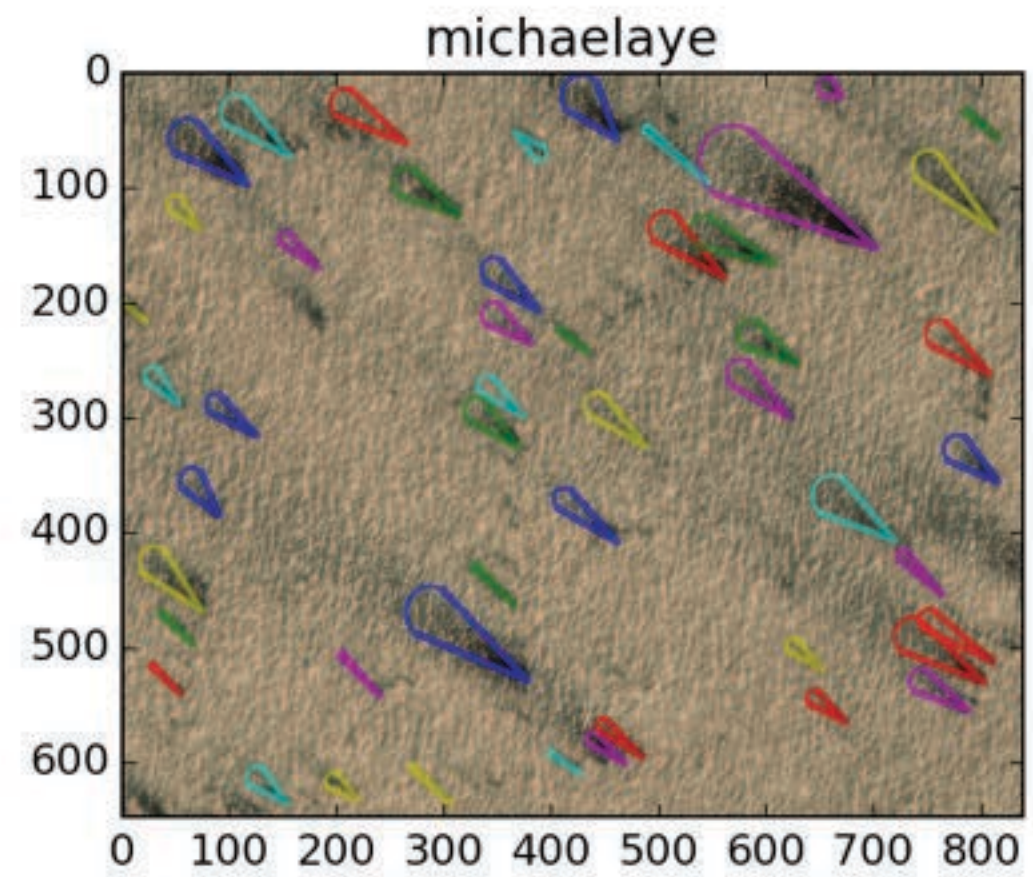
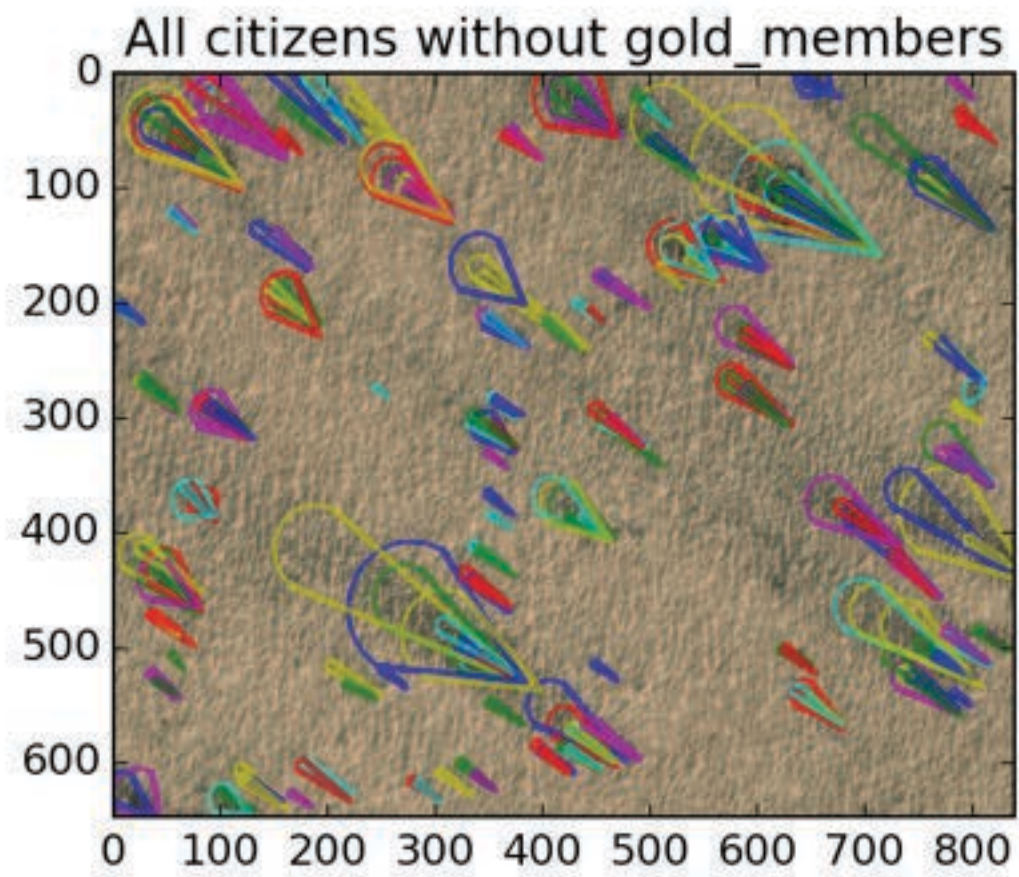
Planet Four Classifications



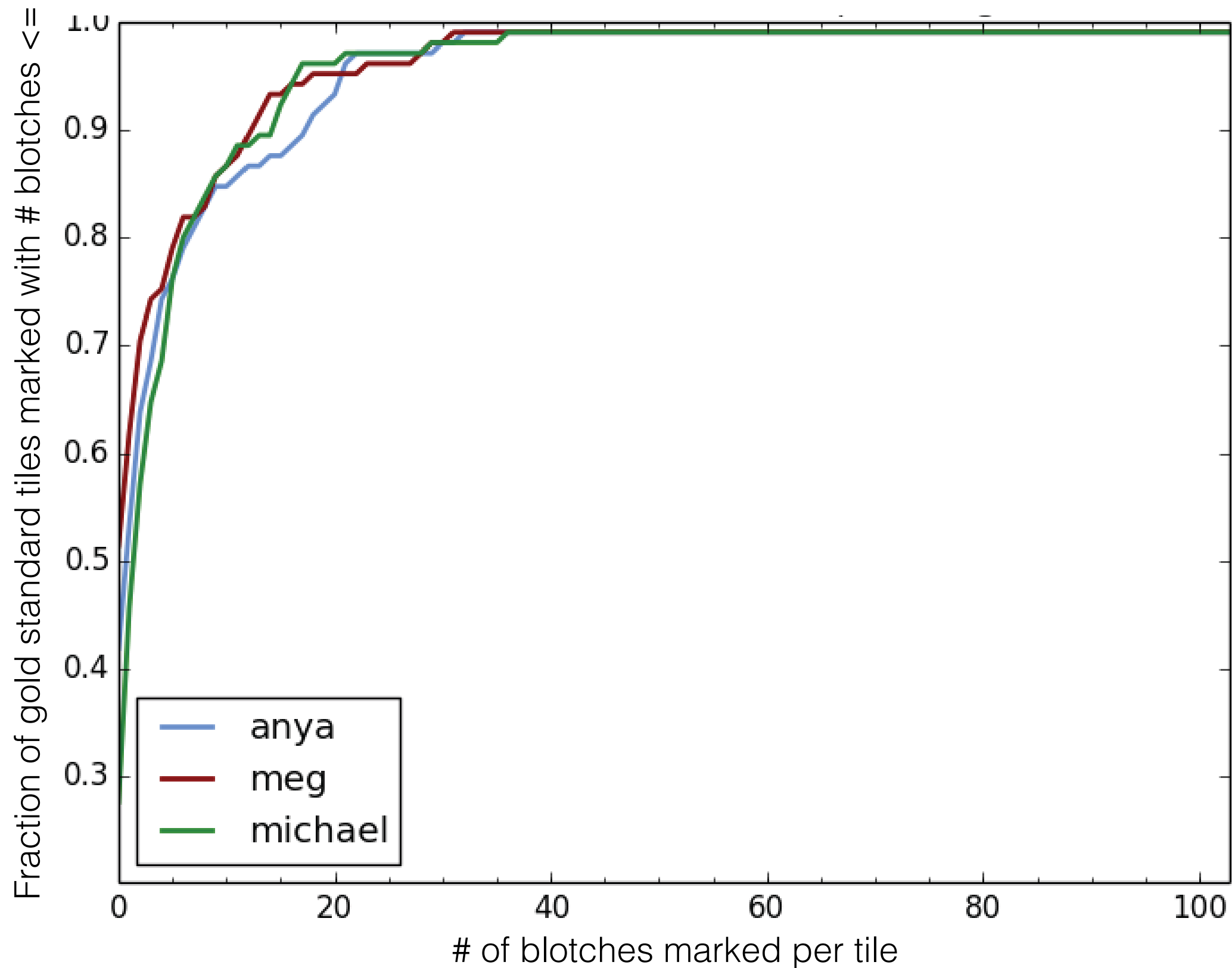




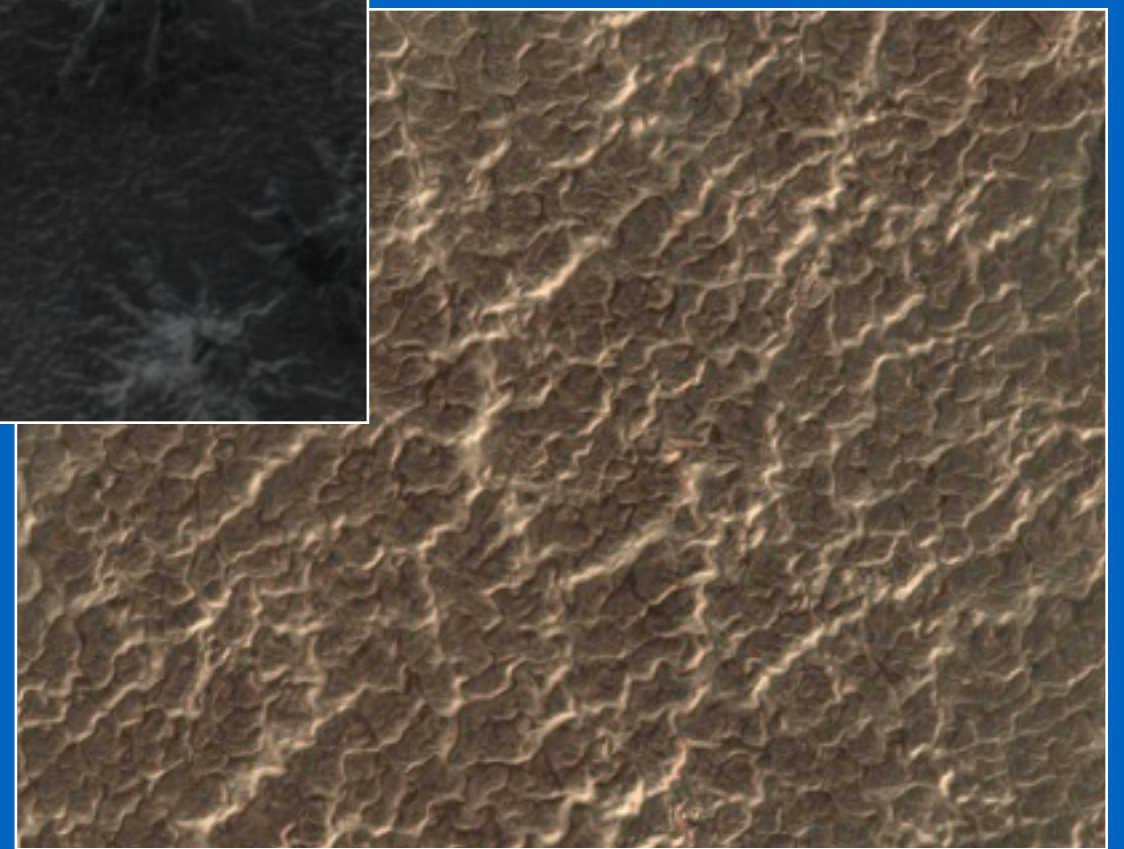
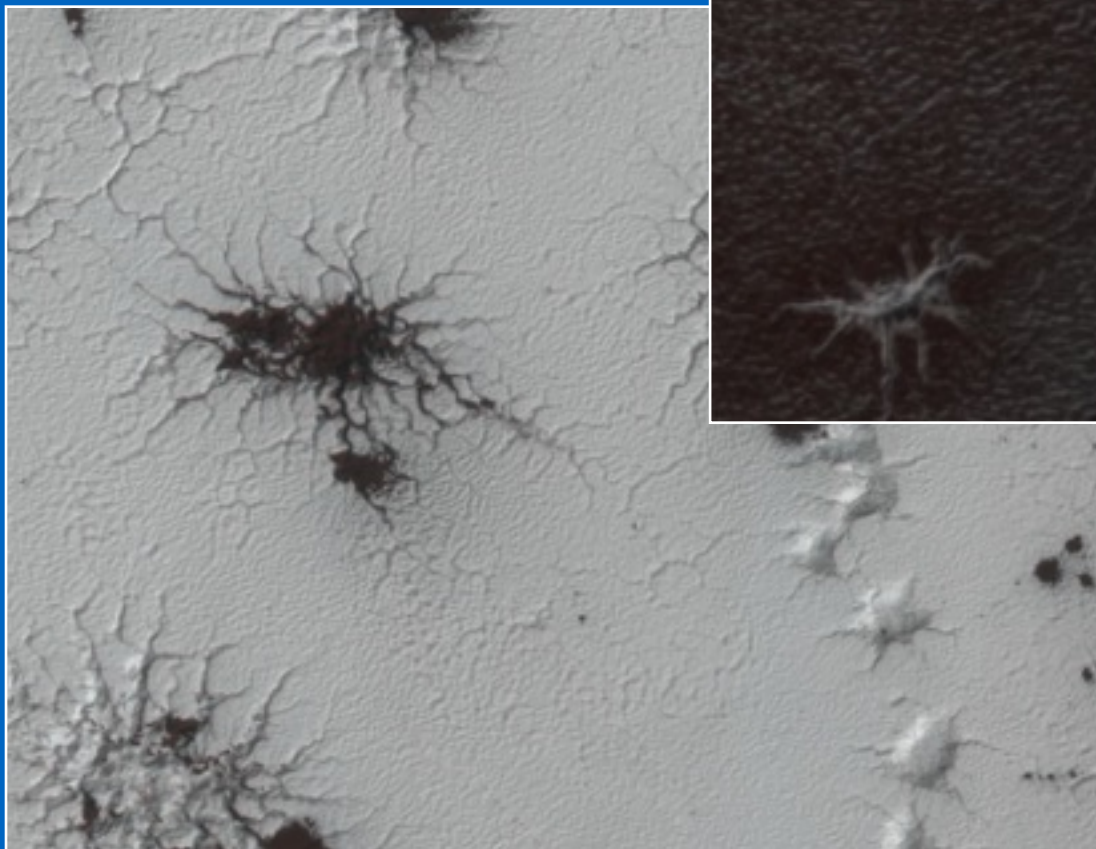
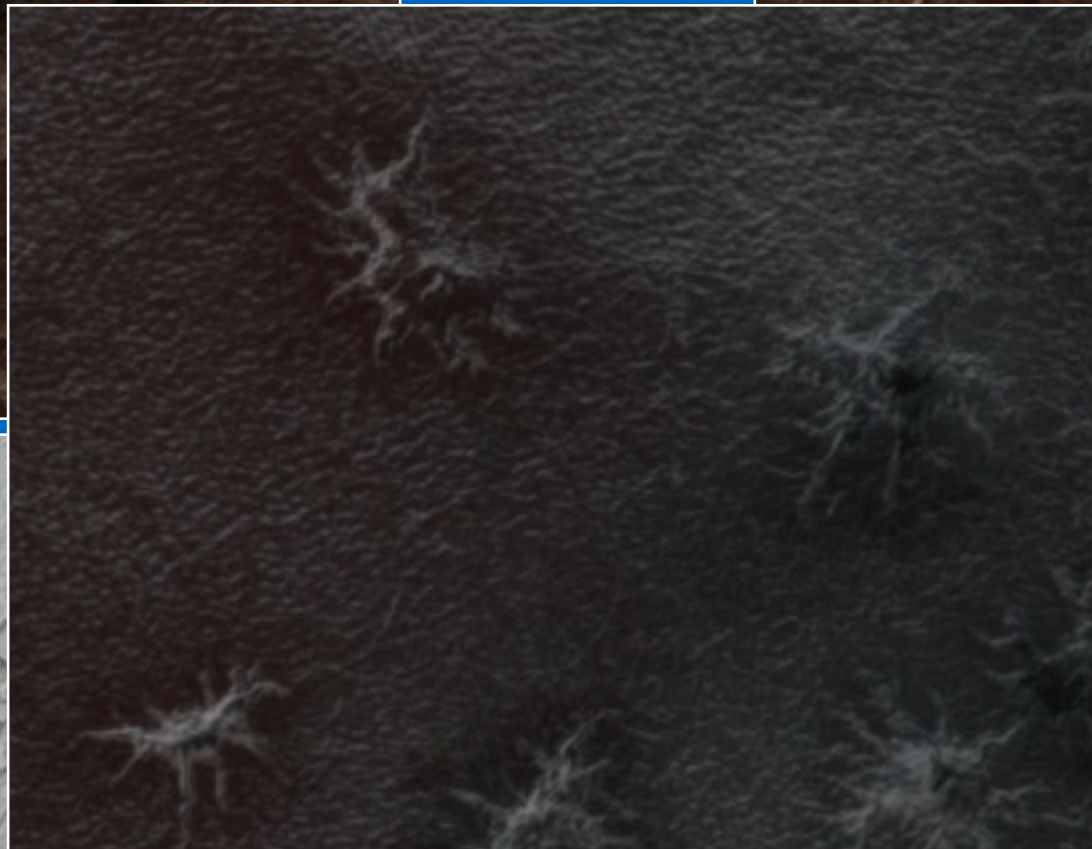
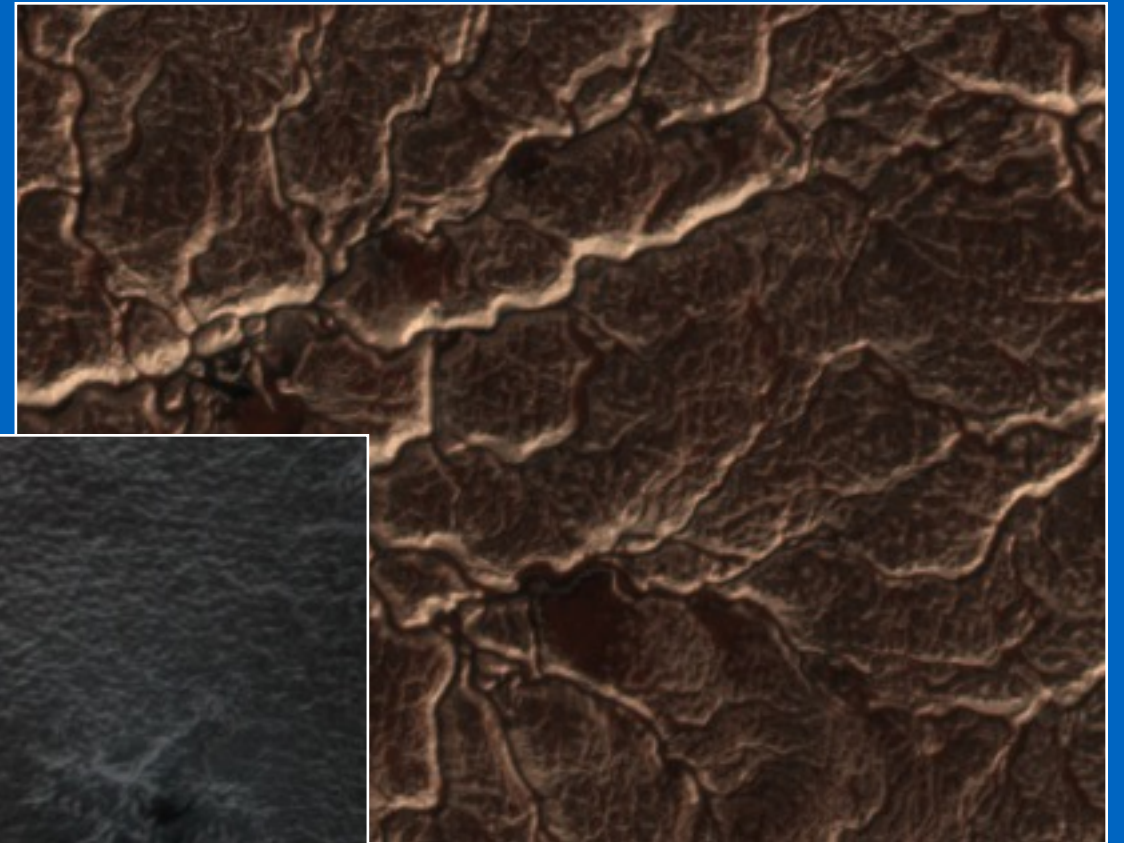
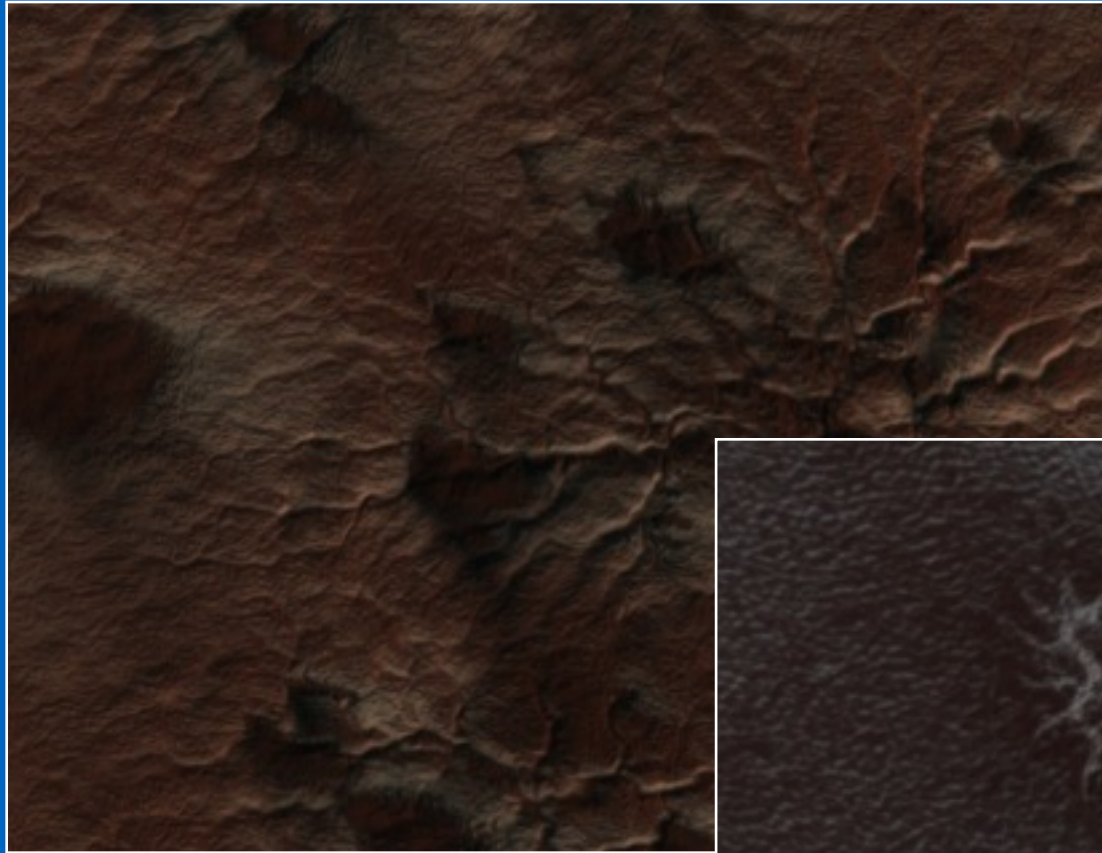




Gold Standard Data



Characterizing the Spiders....



Conclusions

- With Planet Four 122,603 volunteers have contributed in total 4,487,434 classifications since launch in January 2013
- Over 6 million markings have been made since launch
- The science team is currently working on the first catalog for Seasons 2 and 3 of the HiRISE monitoring campaign (42904 tiles, derived from 221 full-frame HiRISE images) based on Planet Four volunteer classifications
- Gold standard data is consistent with the volunteer markings

<http://www.planetfour.org>

Interested in translating Planet Four or any
Zooniverse project contact:

mschwamb@asiaa.sinica.edu.tw