

contrails

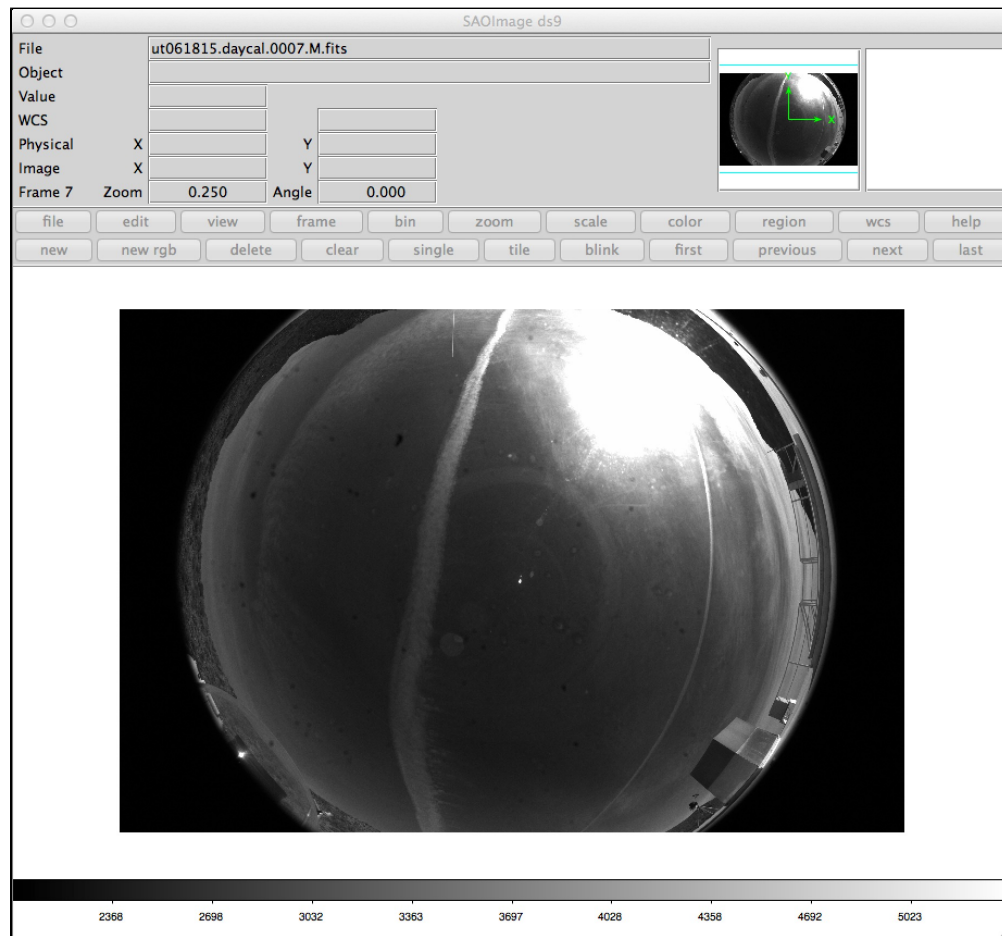
May 21, 2014. C Stubbs.

Contrails are of interest to both the astronomical and the climate communities. Models predict optical depth of 0.1 to 0.5, persisting over tens of minutes to hours, even as contrail disperses and widens.

With 15 mm focal length lens we have a plate scale of about 160 arcsec/pixel, and at a range of 10 km this is a size of $160 \times 5E-6 \times 10E3 = 8$ meters! So we have no problem resolving the cross-track contrail that is about 100m in width. It would span many pixels. Even with 10 mm focal length lens, it would be nicely resolved.

June 18 2015. C Stubbs

Took a stack of nine 1/8000 sec daytime images, separated by 10 minutes, just to see what we'd see. Here is an example:



The FITS images are contained in a gzip'd tar file, in References section below.

June 19, 2015

That initial set of images was encouraging, but spaced too far apart at 10 minutes. Took two stacks of images separated by 1 minute. First set is 0001-0019, second set is 0020-0029. Also placed a link to a tar archive of images. The second set has a contrail drifting across the field, but also some clouds.

References on contrails:

[optical depth variability](#)

[gzip tar file of 9 daytime images ut061815](#)

[gzip tar file of 29 daytime images from ut061915](#)

