

ISIS - Question #1137

Apollo Panoramic Tools Questions

2012-09-27 12:55 PM - Tammy Becker

Status:	Closed
Priority:	Normal
Assignee:	Jeff Anderson
Category:	Applications
Software Version:	
Description	
External Post: https://isis.astrogeology.usgs.gov/isisSupport/index.php/topic.3561.0.html	
Hi ISIS folks,	
I have some questions about using the Apollo tools. I'm working with Apollo Panoramic orbital camera scans such as available here: http://wms.lroc.asu.edu/apollo/view?image_name=AS15-P-0000 I'm trying to import them into ISIS and map-project them.	
1. What's the best way to import them?	
<ul style="list-style-type: none">• The documentation for apollo2isis says it imports a TIFF, but when I open the GUI, it's looking for a .LBL label file. These don't have PDS labels, that I know of. Is this tool meant for ALL Apollo images, or just certain cameras/missions?• It didn't seem like apollo2isis was meant for Apollo Pans, so I tried ApolloPanStitcher.	
The documentation page for that is missing from the website, by the way. I get: Not Found The requested URL /Application/presentation/Tabbed/ApolloPanStitcher/ApolloPanStitcher.html was not found on this server. Apache/2.2.15 (Scientific Linux) Server at isis.astrogeology.usgs.gov Port 80	
The GUI for ApolloPanStitcher appears to look for .cub files as input, so I tried using std2isis on each of the tiles, which are available as TIFFs on the ASU website. That seemed to work fine (all 8 .cubs look ok in qview).	
The command (apollopansticher to=AS15-P-0000_panstitcher.cub file_base=AS15-P-0000 microns=5) worked for a while on the resulting .cub files, until I got this error: I/O ERROR Unable to locate a fiducial mark in the input cube [*-0008.cub]. Check FROM and MICRONS parameters.	
The -0008 .cub file seems fine to me, in a quick glance in qview, anyway. There's no FROM parameter, and I used 5 microns because that's what this page says they used when scanning: http://apollo.sese.asu.edu/ABOUT_SCANS/ Any other ideas why this wouldn't work?	
<ul style="list-style-type: none">• Finally I tried using std2isis on the JP2 available on the ASU website. This seemed to work the best. Is this what you recommend?	
1. Once I have it imported, is the processing procedure: spiceinit - apollopaninit - cam2map ? Or is apollopaninit supposed to replace spiceinit? spiceinit did not work on the pan .cub:	
<pre>% spiceinit from=AS15-P-0000-std2isis.cub ApolloPan Constructor Group = Kernels NaifFrameCode = -915230 LeapSecond = \$base/kernels/lsc/naif0010.tls TargetAttitudeShape = (\$base/kernels/pck/pck00009.tpc, \$base/kernels/pck/lunar_de403_1950-2199_pa.bpc, \$base/kernels/fk/lunarMeanEarth001.tf) TargetPosition = \$base/kernels/spk/de405.bsp ShapeModel = \$base/dems/ldem_128ppd_Mar2011_clon180_radius_p- ad.cub InstrumentPointing = (\$apollo15/kernels/ck/AS15_M_REV63.bc, \$apollo15/kernels/fk/apollo15.0001.tf) InstrumentPosition = \$apollo15/kernels/spk/AS15_M_REV63.bsp</pre>	

```
InstrumentAddendum = $apollo15/kernels/iak/apolloPanAddendum001.ti
Instrument          = Null
SpacecraftClock    = $apollo15/kernels/sclk/apollo15.0001.tsc
InstrumentPositionQuality = Reconstructed
InstrumentPointingQuality = Reconstructed
CameraVersion      = 1
Error              = "The ck rotation from frame -915000 can not be
found due to no pointing available at requested
time or a problem with the frame"
End_Group
ERROR Unable to initialize camera model.
```

2. Where can I find the information that apollopaninit requires as input? I found the 5 microns/pixel value on the ASU website "about" page, and the GMT, lat, lon, and alt are on the individual image pages, but I can't find anything about these parameters: lon_int, lat_int, vel_azm, vel_horiz, vel_radial. Do you know where those are available, or do I need to contact the ASU group that made the scans?

The good news is that when I put in fake values for all of those parameters, and then ran the resulting .cub through cam2map, it ran to completion! (although of course the output is junk).

Can I use reduce on the output of apollopaninit before running cam2map? cam2map takes so long on these giant files, it's hard to do much testing efficiently.

Thanks!
Ingrid.

History

#1 - 2012-09-28 12:31 PM - Jeff Anderson

Hi Ingrid,

I believe the process for Apollo pan is

isis2std

- either the single jp2000
- or the 8 large tiff scans
- don't use apollo2isis that was written by the LROC ASU folks for the metric camera
- My understanding is the jp2000 were stitched as part of the scanning process
- The stitching process didn't always work properly (examine the jp2000's carefully)
- Especially in shadowed areas where there was little information for matching
- The jp2000 are also reduced resolution images

apollopanstitcher

- only needed for the 8 large tiff scans
- not sure why documentation is missing on the web site but will get this fixed in the next release
- On the commandline try using "apollopanstitcher -webhelp" and that should bring up the documentation
- I'm not sure what is happening with the undiscovered fiducal mark.
- We certainly haven't tested all of the Apollo pan scans so there could be problems finding them (or they may not exist)
- I'm hoping you can try a few different pan datasets and let us know if you are seeing the problem on all of them.

apollopaninit

- replaces spiceinit
- requires scanned pdfs from ASU that provides the much of the information to make a camera model work
- It doesn't appear that the scanned pdf document is available on their website. You will need to contact them
- After this step camera programs should run (cam2map, camstats, campt, qview tracking, etc)
- You can run reduce and/or crop can the camera programs will still work

Jeff

#2 - 2012-09-28 12:31 PM - Jeff Anderson

Will leave this ticket open for a bit until I hear back if the process is working

#3 - 2012-10-15 08:56 AM - Jeff Anderson

It's been two weeks. I've sent emails to Ingrid and haven't heard anything back. I am resolving this ticket both on the support board and in mantis.

#4 - 2012-10-26 05:07 PM - Jeff Anderson

Ingrid finally sent an email. I need to address it.

#5 - 2012-11-05 08:18 AM - Jeff Anderson

Responded last week

Hi Ingrid

Yes I meant std2isis

The TIFFs are full scanned resolution. There are eight tiffs per scan. When stitched together they will make a ridiculously sized image (250000x100000). Part of the Apollo pan process is finding the fiducial marks which are used for both stitching and the camera model. If you reduce too much they go away. After Apollopainit I think you can reduce without worry. As I mentioned you can use the jp2k images which are pre-stitched. Some of these have problems that Kristen might be able to explain better than I.

Let me know how things go.
Jeff

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On 10/19/12 3:14 PM, Ingrid Daubar wrote:

Thank you! I hadn't seen the response yet, I guess the forum notifications don't get sent once the issue is "closed"? This is very helpful, but I have a few more questions below.

On Oct 4, 2012 278, at 7:56 AM, Jeff Anderson wrote:

Hi Ingrid,

Not sure you saw this on the support forum for Apollo pan processing. I believe the process for Apollo pan is

isis2std

Do you mean std2isis?

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I didn't realize that. Are the TIFFs reduced resolution? We have actually been reducing the JP2s anyway, because they seem to have been scanned at a higher resolution than necessary for the quality of the images. It might still be best to start with the best available resolution, though, and then use 'reduce' from there.

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apollopanstitcher
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