

ISIS - Bug #2099

qnet - not displaying Radius Source File correctly for certain cases

2014-06-03 02:09 PM - Lynn Weller

Status: Closed	
Priority: Normal	
Assignee: Makayla Shepherd	
Category: Applications	
Target version: FY17 Backlog	
Impact: New Radius Source label behavior When there is not a radius source open, a point is selected, and a ground source is opened, the radius source will be the ShapeModel of the reference measure if the ShapeModel is a cube. If the ShapeModel is not a cube, the ABC of the target body will be displayed as the Radius Source on the Qnet Tool. If there is not a radius source open, there is not a point selected, and a ground source is opened, the tool will exhibit the same behavior as before.	Software Version:

Description

I'm working with LROC data that have been spiced and initialized with a DEM that is not in the system (/archive/projects/TOPO/LOLA_MAR2011/ISIS3_radius/LDEM_75N_30M_radius_Mar2011.cub). I'm looking at previously saved ground points and noticed that when I load a ground source that is a shaded dem (/archive/projects/lmp/rdr/NPole/DEM/shade_LDEM_NPole_radius_Mar2011_10M.cub), the Radius Source File reports "1737400.0,1737400.0 ". This happens immediately after I load the ground source. I wouldn't expect there to be anything there since I haven't loaded anything and I haven't created or saved any points.

I tried other ground source files (but not loading a radius source) to see what sort of results I would get. Here's the rundown:

- ground source = /archive/projects/TOPO/LOLA_MAR2011/ISIS3_radius/LDEM_75N_30M_radius_Mar2011.cub (fyi, this file has no ShapeModelStatistics table in the label, if that matters)
radius source reported = 1737400.0,1737400.0
-----> there might be something to this. I recreated the shade file from the same dem as the above (which was created several years ago) and nothing is reported for radius source file. The new shade file has a ShapeModelStatistics table in the labels. Why would this matter? The updated file is here:
/work/projects/laser_a_work/lweller/DEM/shade_LDEM_NPole_radius_Mar2011_10M_prep.cub
- ground source = /archive/projects/TOPO/WACMOS_JUN2013/WAC_morphology_NP_June2013_100m_8bit.cub (a mosaic file)
radius source reported = 1737400.0,1737400.0
- ground source = /work/users/lweller/Isis3Tests/Qnet/RadiusSource/ground_source_lev1file.cub (this is another level 1 LROC file that overlaps my test files)
radius source = Ellipsoid

I have also noted (after writing this) that once something populates the Radius Source Field (right or wrong) it stays there until something different comes along. And there is no way to close the radius source once it's open. For instance, if I load ground source as my newly created shade file, nothing appears in the radius source field. If I load my old shade file, then 1737400.0,1737400.0 shows up. If I again, during the same qnet session load my new shade file, the radius source still says 1737400.0,1737400.0 instead of being empty. Could this be a clue as to what is going on?

Why in the heck am I getting anything in the radius source field and why is it reporting the ellipsoid value when my data are initialized to a DEM? I have tested my DEM by running campt on a test image and get a LocalRadius value that is something other than the radius of the moon so I think the DEM is ok and being intersected no problem. I have also created a constrained point as a test using these various ground sources and saved it to verify that the radius being saved is indeed coming from the shape model on my image label. It appears the radius is coming from the proper location, but it's not being reported properly in the Qnet Editor window. Is any of this expected and I'm just not remembering how things work??

LROC files to test on are under /work/users/lweller/Isis3Tests/Qnet/. There are 2 lev1.cub images included in the cubs.lis file and a third file called ground_source_lev1file.cub which is another level 1 LROC file that is not in the list that can be used as a ground source. There is no network since all of this can be reproduced without one.

I'm a little concerned there may be something wrong with my LROC files or the shape model they point to that is helping to create the problem because I don't see this sort of behavior with Themis images I am working with. If you want to look at themis data to see how it behaves see /work/users/lweller/Isis3Tests/Qnet/MiscSegFaultsWithGround and use the file list Extracted_ThemisOnly.lis (there is a net file called Extracted_ThemisOnly.net). This directory also contains a small portion of the MOLA DEM called Mola_Radius.cub and a shaded version of it called Shade_Mola_Radius.cub. A level 1 Viking Orbiter you can use as a ground source is /work/projects/themis_control/VO_Lev1/f684a63.lev1_slo.cub which overlaps themis image I8337016RDR.

History

#1 - 2014-06-03 03:34 PM - Lynn Weller

I have another directory where I spiced my LROC images and defaulted to the system DEM under /work/users/lweller/Isis3Tests/Qnet/RadiusSource/DefaultSpice/. These images also have the same problem. One thing of note is that if I just load ground source and save the constrained point then view the network via cneteditor nothing is recorded as the radius source file (though it's clear the radius value saved is from the dem on the image label). If I load a radius source (/archive/projects/TOPO/LOLA_MAR2011/ISIS3_radius/LDEM_75N_30M_radius_Mar2011.cub) and save the point, then cneteditor reports a radius file.

FYI, I think I have avoided seeing this for my Themis data because I am using a previously created ground control network where all of the pertinent information was saved correctly and I am not modifying or creating new ground points. I think qnet is loading what it sees saved in the net for my ground and it's all there so it gets reported that way.

#2 - 2014-06-03 03:35 PM - Lynn Weller

- Description updated

#3 - 2014-06-03 03:43 PM - Lynn Weller

- Description updated

#4 - 2014-06-03 03:50 PM - Lynn Weller

- Description updated

#5 - 2014-06-03 05:36 PM - Tammy Becker

- Status changed from New to Acknowledged

This is reminiscent of [#1234](#) without the error

#6 - 2015-04-02 10:56 AM - Moses Milazzo

Adding this to FY15Q3 just in case it can be fixed while we're fixing [#2210](#) and [#2060](#).

#7 - 2015-04-09 01:43 PM - Lynn Weller

Just wanted to note that this problem still exists. I was looking at a network with Ken E. today he built over the past several months and we saw an incorrect radius source (it was 1737400.0,1737400.0). He was working with Apollo Metric data that was likely initialized to a higher resolution DEM (he or Tammy need to confirm this) than what the ISIS system default supplies, which is similar to my reported case. So maybe there is some issue with demprep and DEM sources not in the system that is the real problem.

We did note that after making an adjustment to his ground source feature, the a priori radius on the constrained point seemed to reflect a valid value. It certainly wasn't the radius of the sphere as the radius source being reported would indicate.

At any rate, I thought I would just note that this problem has not gone away.

#8 - 2015-05-13 02:25 PM - Stuart Sides

- Target version set to 3.4.10 (FY15 R3 2015-07-23 Jul)

#10 - 2016-03-25 08:12 AM - Stuart Sides

- Status changed from Acknowledged to Assigned

- Assignee set to Makayla Shepherd

#11 - 2016-03-25 09:25 AM - Lynn Weller

My LROC test data are now under /work/users/lweller/Isis3Tests/Qnet/RadiusSource/, I think (been a while since this was originally posted...). I'll review and retest what's in this post to recall the details and be sure the data are still accessible. The Themis data I mention are still in their original location.

#12 - 2016-03-28 03:50 PM - Makayla Shepherd

- Status changed from Assigned to In Progress

#13 - 2016-07-12 07:41 AM - Stuart Sides

- Target version changed from 3.4.10 (FY15 R3 2015-07-23 Jul) to 3.4.13 (FY16 R3 2016-08-31 Aug)

#15 - 2016-07-19 12:35 PM - Lynn Weller

If you want to load a radius source file try this (on image labels):

/archive/projects/TOPO/LOLA_MAR2014/LRO_LOLA_NPole75N_LDEM_30m_mar2014_radius.cub

The shaded file in the first no longer exists and the DEM is outdated so I won't create a new one, but the issue can be demonstrated with the examples.

#16 - 2016-07-22 06:08 PM - Tammy Becker

I have test data using Vesta; this dataset will be a good test for DEM in addition to a pck that is not in the ISIS system yet. Please drop by to work with me on this test. We will exercise a combination of with and without a radius source.

/work/projects/workshops/IsisWorkshops/External/OSIRIS-REx/March2016/IsisWorkshop/Lessons/VestaSouthPole/DEM-Example

#17 - 2016-08-02 05:45 PM - Tammy Becker

Vesta data:

DEM to use=/work/projects/workshops/IsisWorkshops/External/OSIRIS-REx/March2016/IsisWorkshop/Lessons/ShapeModels/Vesta_Dawn_HAMO_DTM_DLR_Global_48ppd-prep.cub

Image data:

/work/projects/workshops/IsisWorkshops/External/OSIRIS-REx/March2016/IsisWorkshop/Lessons/ControlLesson/PDS/*IMG
/work/projects/workshops/IsisWorkshops/External/OSIRIS-REx/March2016/IsisWorkshop/Lessons/ControlLesson/00imageprep.csh

Netfiles:

Groundonly=/work/projects/workshops/IsisWorkshops/External/OSIRIS-REx/March2016/IsisWorkshop/Lessons/ControlLesson/Answers/Groundonly.net

combo with Free and Constrained: cnetG.net

#18 - 2016-09-26 04:28 PM - Makayla Shepherd

- Status changed from *In Progress* to *Resolved*

Three expected behaviours:

- If there is a radius source open, leave it alone
- If there is not a radius source open, look at the ShapeModel of the reference image. If that ShapeModel is a cube use that as the radius source
- If the ShapeModel of the radius is not a cube (or empty), use the ABC radius of the target body

#19 - 2016-09-28 04:20 PM - Lynn Weller

Makayla Shepherd wrote:

Three expected behaviours:

- If there is a radius source open, leave it alone
- If there is not a radius source open, look at the ShapeModel of the reference image. If that ShapeModel is a cube use that as the radius source
- If the ShapeModel of the radius is not a cube (or empty), use the ABC radius of the target body

Yes, everything is working as expected. I have run tests against Themis IR data, LROC and Tammy's Vesta workshop data set. For each case I made sure the shape model of the reference image was loaded under Radius Source File and that the values saved for the measure were correct. I also made a copy of all data sets and reran spiceinit such that model=ellipsoid and confirmed the default system Radius Source (the target radii as stored in the base .tpc file) was appropriately displayed and recorded when the measure was saved. In the case of Dawn, a user tpc file was entered for spiceinit to load onto the image label and the updated qnet picked up and displayed the correct values under Radius Source. And of course when a radius file was directly loaded by the user, the program displayed the name correctly and picked up the correct radius value from the file at the requested location. All of the new behaviours as noted by Makayla are working properly. Yea!

I also confirmed that production qnet was also recording the correct radius value when the measure was saved despite not displaying that information correctly under the Radius Source. We already knew this was the case, it's just been reaffirmed.

Much better than before. It's nice knowing what is actually being used now for the radius!

#20 - 2016-09-28 04:20 PM - Lynn Weller

- Status changed from *Resolved* to *Closed*

#21 - 2016-09-30 09:58 AM - Lynn Weller

- Status changed from *Closed* to *Feedback*

Sorry, had to reopen this ticket after additional testing revealed a new bug.

- open an image list
- open a network (Do not load a point/open the Qnet Tool)
- open a ground source file ----> Segmentation fault

This sequence does not create a seg fault under production.

This is not an issue if I load a ground source file **after** loading a point.

The problem likely has to do with the fact that the point editor isn't available to display the name of the ground source loaded, so it fails.

I'll test radius source as well and anything else I can think of that has to do with order of operation.

----> Right, you can't open a radius source file until you have opened a ground source file, so this isn't a test that can be performed.

I never understood why you had to open one before the other, but it doesn't matter - the behaviour is consistent between versions.

#22 - 2016-10-03 10:15 AM - Stuart Sides

- *Target version changed from 3.4.13 (FY16 R3 2016-08-31 Aug) to FY17 Backlog*

#23 - 2016-10-07 10:11 AM - Makayla Shepherd

I fixed the segfault. If a ground source is loaded and there is a point selected it will exhibit the new behaviour accordingly. If there is not a point selected it will set the required variables using the old behaviour. When a point is selected and loaded, qnet will check if there is a ground source, if so it will run through the new behaviour.

#24 - 2016-10-11 06:29 PM - Lynn Weller

- *Status changed from Feedback to Closed*

Reran tests opening the Ground Source file before a point was loaded and the program no longer seg faults. The information loaded in the Editor Tool is consistent with first loading a point then opening the Ground Source file.

The items covered by this post in particular have been satisfied so it can now be closed. However two new bugs have been revealed and will be added to redmine.

NOTE: A test plan for this post has been written. A link to it and/or a link from the plan back to this post will be implemented when some details for test plans in general are ironed out.

#25 - 2016-10-17 02:46 PM - Makayla Shepherd

- *Impact updated*