

SPICE-PR-JUICE-001-ganymede-roi-generation

ID	Title	Version	Author	Operator	Category	Status
SPICE-PR-JUICE-001	ganymede-roi-generation	1	Marc Costa	JUICE science operations scientists	SUPPORT	DONE
Objective	<p>SPICE Kernel Dataset (SKD) release when updating Setup Kernels (STK) for both a non-operational SKD (Study or Legacy). Please note that for a given SKD version vXYZ, the increments indicate the following:</p> <ul style="list-style-type: none"> • X: Major Release (major feature implemented) • Y: Minor Release (minor features implemented) • Z: Bug Fix (bug fix for a given release) <p>Take the increments into account when you release a new SKD.</p>					
Start	16 Jan 2019	Frequency:	Whenever ROIs are updated	Duration:	1 hour	
In case of problem(s)	Contact Marc Costa					

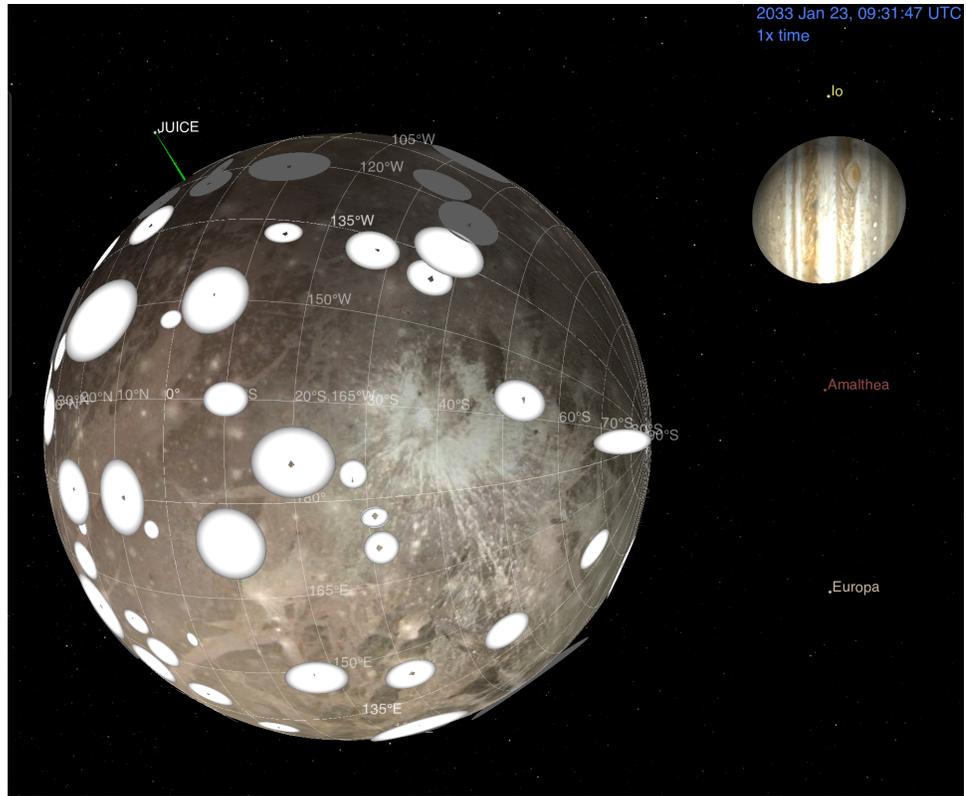
Detailed Procedure

Step	Description	Action
1	Input generation	<p>Generate the appropriate ROI input table. Agreed format is CSV, remove the header line. Attached an example delivered ROI Excel and the one used as input.</p> <p>Please note that the longitude must be planetocentric with the following range: [-180, 180] (W to E).</p>
2	Run roigen.py	<p>With a Python IDE, you need to run the attached Python file: roigen.py</p> <p>When you do so, you are running:</p> <pre>poinpoint_config('rois.input') pck_cosmo_config('rois.input')</pre> <p>Put the input CSV file in the same directory with the name: rois.input</p>
2	Run pinpoint	<p>One of the outputs of roigen.py is the sites 'configuration' file for PINPOINT.</p> <p>PINPOINT is a NAIF Utility for SPICE, if you don't have it install, get it from here: http://naif.jpl.nasa.gov/pub/naif/utilities/MacIntel_OSX_64bit/pinpoint (you need to get it for your OS system).</p> <p>Copy the latest generic PCK file from your SPICE kernel dataset in that directory.</p> <p>Afterwards you need to run PINPOINT with the configuration, you do it like this:</p> <pre>#!/usr/bin/env bash pinpoint -def pinpoint.defs \ -spk juice_roi_v00.bsp \ -pck pck00010.tpc \ -fk juice_roi_v00.tf</pre> <p>Note that in the directory that you do so, you will also need to copy the pck00010.tpc from the JUICE SPICE Kernel Dataset</p>
3	Copy the files to the SPICE kernel Dataset	<p>Now you need to copy the following files to the relevant SPICE Kernel Dataset directories. After that you will need to modify your meta-kernel in order to include the kernels.</p> <p>The alternative is not to move the files and specify the address directly in the meta-kernel.</p> <p>Files to copy are: juice_roi_v00.bsp, juice_roi_v00.tf, juice_roi_v00.tpc examples of those files are attached:</p> <ul style="list-style-type: none"> • juice_roi_v00.tpc • juice_roi_v00.bsp • juice_roi_v00.tf <p>An example resulting meta-kernel is attached: juice_crema_3_0_ops_local.tm</p>

4

Copy the updated
Cosmographia
configuration

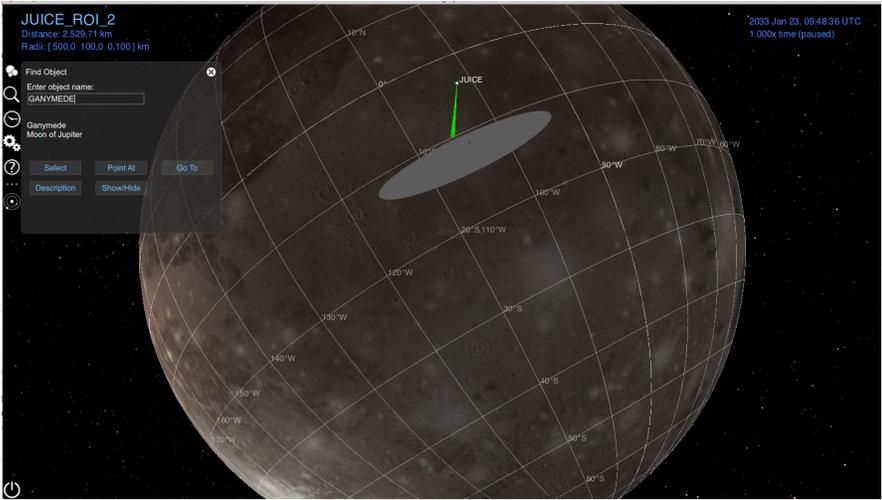
If you want to visualize the ROIs in Cosmographia as in the attached picture:



You need to copy the contents of the resulting file: `spacecraft_ROI.json` into the corresponding Cosmographia configuration, this should result into a file like the attached one: `spacecraft_ROI.json`

The following cosmographia configuration file also needs to be modified: `load_JUICE_crema_3_0_001.json`

You can then load the cosmo scenario as usual.

5	ROI opportunity windows	<p>With a Python IDE, you need to run the attached Python file: gfroi.py</p> <p>When you do so, you are running:</p> <pre> start_utc = '2033-01-23T09:00:00' finish_utc = '2033-01-23T10:00:00' spiceypy.furnsh('/Users/mcosta/SPICE/JUICE/kernels/mk/juice_crema_3_0_ops_local.tm') for i in range(1,110,1): gfroi(f'JUICE_ROI_{i}', start_utc, finish_utc) </pre> <p>So basically, you can tune the start and the end times of the JANUS ROI opportunities.</p> 
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History

Revision	Date	Author	Approved by	Comments
0	16 Jan 2019	Marc Costa	Marc Costa	