5.5AU WSA-ENLIL simulations and rt Cone Model run troubleshooting

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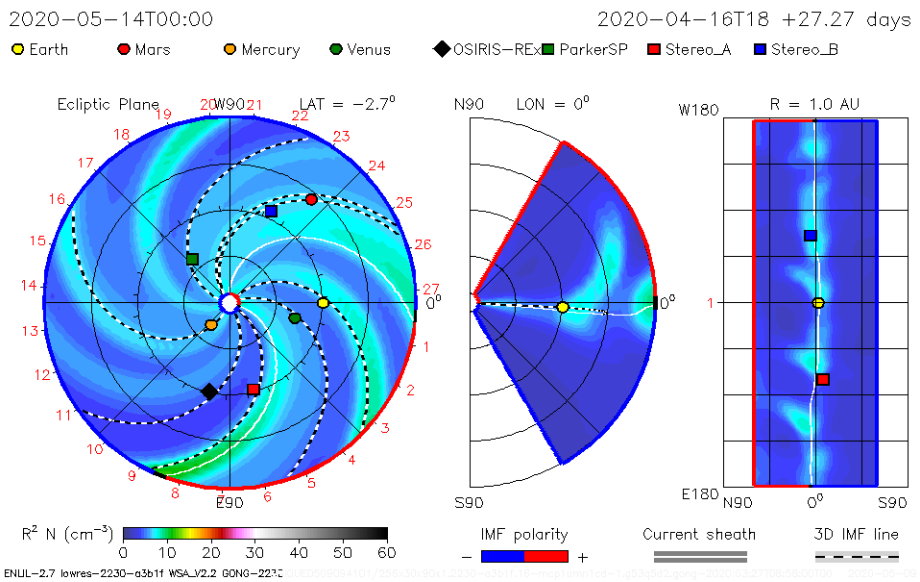
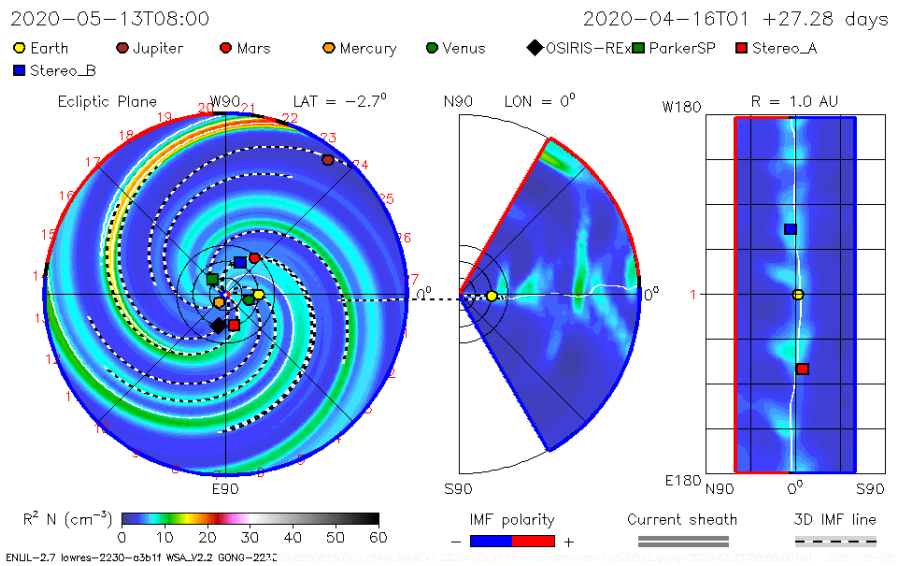
5.5 AU – Juno (Dawn)

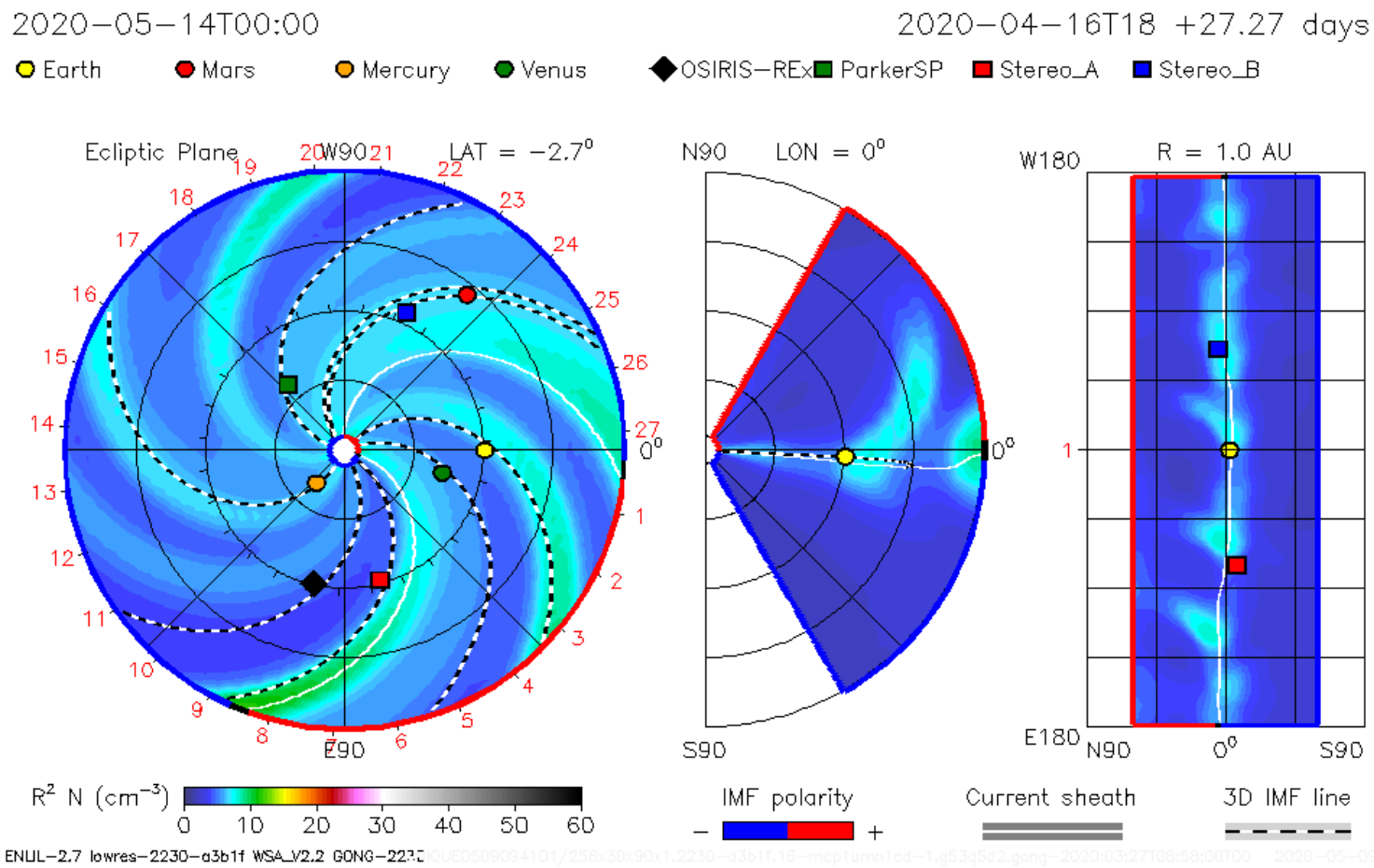
If there is a chance of your CME also impacting Juno, perform another WSA-ENLIL+Cone simulation with the outer boundary of 5.5AU after your 2AU simulation is complete.



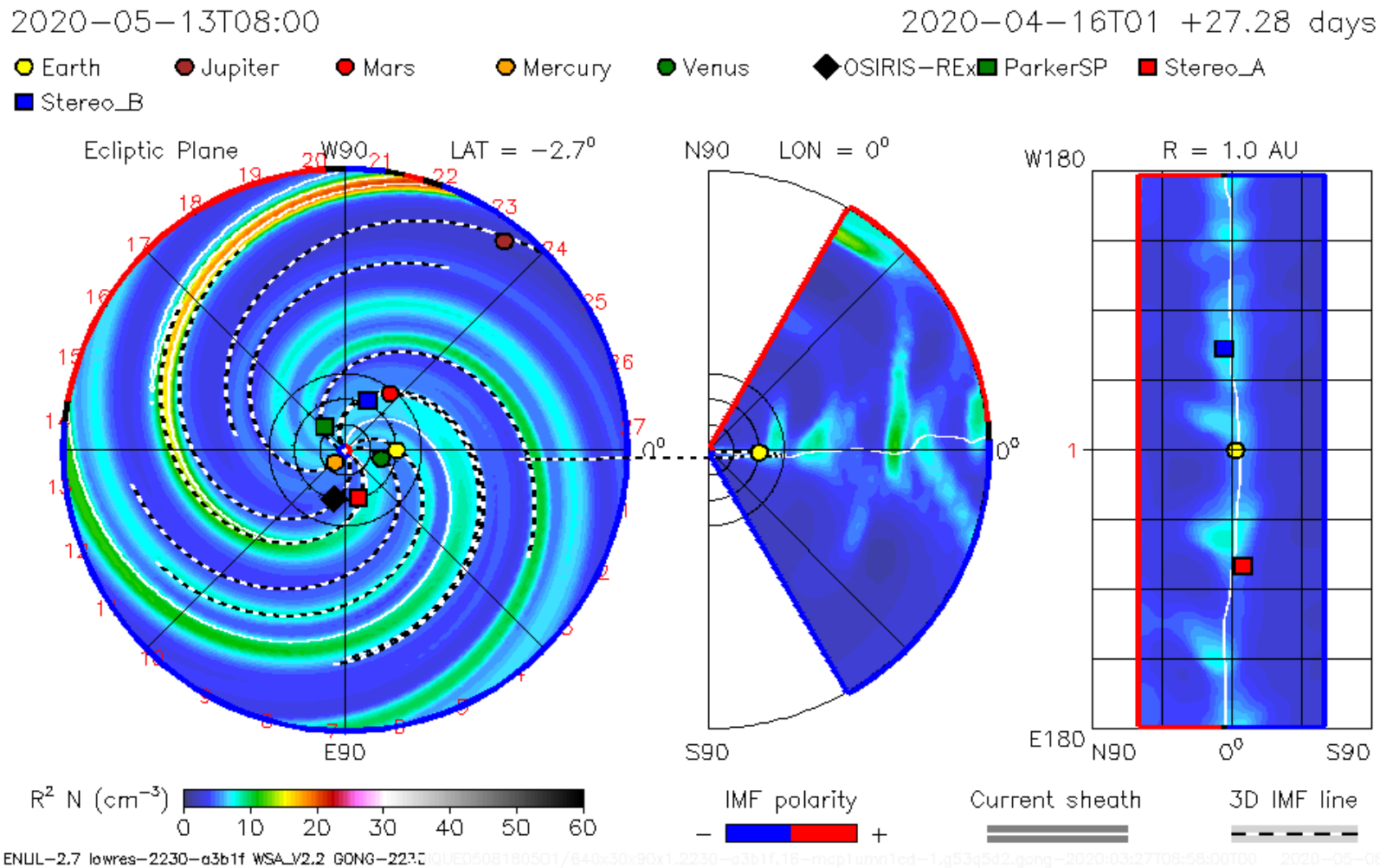


To determine if your CME might impact Juno check the current ambient 5.5AU simulations to pinpoint the longitude of Juno (assume a latitude near the ecliptic) and compare this with your derived CME parameters (longitude, width, latitude) and 2AU simulation.

2.0 AU (standard setup)



5.5 AU – Juno (Dawn)



Launching 5.5 AU Run

- Check that there is no run using backup_ror.q in the qsub system:
  qstat -u *

- If you do not see backup_ror.q listed, proceed to the next step. If you see it listed, find the job id on the row mentioning backup_ror.q. Use this command to remove the job:
  qdel JOBID

- Once you see it the job is no longer listed (using qstat command again) proceed to the next step and email gsfc-ccmc-ror@lists.hq.nasa.gov to let them know you removed a job.

- **nohup /data2/ccmc/Solar_Helio_Models/Models/Enlil_local/scripts/execute_RT_cone_5.5.sh > logfile.log 2>&1 &**
  Important: Use the same exact control file for the 5.5AU run as you used for the 2AU run

- To simultaneously launch 2AU and 5.5AU simulations:
  nohup /data2/ccmc/Solar_Helio_Models/Models/Enlil_local/scripts/execute_RT_cone_both.sh > logfile.log 2>&1 &
  Important: The same control file is used for both runs.

Troubleshooting WSA-ENLIL cone simulations

If you do not receive email alerts about launched simulations, the run takes much longer than an hour to complete you may need to carry out some additional actions to troubleshoot and launch a new run.

Troubleshooting cont.

Clean killing/stopping of the process

If something goes wrong such as you notice that the initial CME parameters had a typo, you need to kill the existing cone model process prior to launching a new one. Clean kill can be established by the following procedure:

1) Wait 5 minutes after the start of the erroneously launched run.

2) Use the following command to kill the run:
On hilox1:

/data2/ccmc/Solar_Helio_Models/Models/Enlil_local/scripts/kill_RT_cone_run.sh

On lanai1:
/home/ccmc/Solar_Helio_Models/Models/Enlil_local/scripts/kill_RT_cone_run.sh

3) Wait 5 minutes to let all the processes stop.

4) Relaunch the corrected run.

Monitoring the Progress of the Simulations

The state of the simulation can be checked the following ways:

If you launched the cone model run using command:

.../execute_RT_cone.sh > logfile.log 2>&1 &

The "logfile.log" is a dummy logfile, which will be empty if there are no errors or will just contain the used command string. The script output will be written into logfile "YYYYMMDD_HHMMSS_logfile_RT_cone.log" that will be located in the home directory:

hilox1: /data2/ccmc

lanai1: /home/ccmc/

E.g. first you check what logfiles are there..

ls ~/*.log

Monitoring the Progress of the Simulations (cont.)

then check on the one you care about e.g.

tail ~/YYYYMMDD_HHMMSS_logfile_RT_cone.log

or:

tail -100 ~/YYYYMMDD_HHMMSS_logfile_RT_cone.log

for the last 100 lines. Or you can open it up in emacs and see the whole thing (but it's long)

5.5AU runs generally have 9400 steps and 2AU runs 4500 steps.

No E-mail Problem (mail server)

If you do not receive a run launched email, or run results emails and the run completed ok (check the log file, see tips below) please alert Anna, Sarabjit, and Kiran as to this mailserver issue. In the meantime, you can navigate to the following locations to find the text of the three emails:

hilox1:

/data2/ccmc/Solar_Helio_Models/Models/Cone_Model/2AU/RT_cone_model_run_launched_2.0.txt

/data2/ccmc/Solar_Helio_Models/Models/Cone_Model/2AU/CME_estimate_mail_body.txt

/data2/ccmc/Solar_Helio_Models/Models/Cone_Model/2AU/CME_estimate_mail_planets_body.txt

lanai:

/home/ccmc/Solar_Helio_Models/Models/Cone_Model/2AU/RT_cone_model_run_launched.txt

/home/ccmc/Solar_Helio_Models/Models/Cone_Model/2AU/CME_estimate_mail_body.txt

/home/ccmc/Solar_Helio_Models/Models/Cone_Model/2AU/CME_estimate_mail_planets_body.txt

No E-mail Problem (mail server) – cont.

or for **5.5AU r**uns:

/data2/ccmc/Solar_Helio_Models/Models/Cone_Model/**5.5AU**/RT_cone_model_run_launched_5.5.txt

/data2/ccmc/Solar_Helio_Models/Models/Cone_Model/**5.5AU**/CME_estimate_mail_body.txt

/data2/ccmc/Solar_Helio_Models/Models/Cone_Model/**5.5AU**/CME_estimate_mail_planets_body.txt

Simulation Link problems in E-mail

If the movie links do not work it could be one of four things:

1) No longer a major concern. One or more of the iswa servers does not have the file, but the others do. This is easy to verify. Enter the offending url into a browser. If you see Object Not Found, change the url start to iswaa-webapp1.ccmc.gsfc.nasa.gov or iswaa-webapp2.ccmc.gsfc.nasa.gov or iswaa-webservice1.ccmc.gsfc.nasa.gov. If one of the servers are missing the files please contact Anna, Rick, or Leila and they will copy it manually. If all three are missing the files, see item two below.

2) The run computations did not complete successfully. To see if this is the case you will need to check the log file (see instructions above). If the simulation completes successfully you should see "END OF RUN" following a series of steps. If there are no steps outputted, then you should see an error appear before the "END OF RUN" point (this is often due to an issue with the control file-check for typos- or an .lst file from a planet/spacecraft). If you need help figuring out what happened here you should contact the person on call in addition to Sandro, Leila and Peter.

Simulation Link problems in E-mail - cont.

3) The computations completed successfully but the graphics were not produced. If the run was ok but there was an issue with the graphics you will find it after "END OF RUN" probably on one of the IDL stages. Contact Sandro, Leila and Peter.
Always a good thing to check is IDL license errors ("users already").

grep “users already” *.log
grep "Execution halted at: PLOT_TIM" *.log
check fld*nc filesize. or check if variables are empty:
ncdump fld.Venus.nc -v TIME
move offending fld file or rerun simulation.
grep "halted" *.log
grep -C 10 ".lst" *.log

4) Run completed successfully, graphics were produced, but not copied to iswa. You can recognize this issue when there are no errors in the log file until the "cp" or "scp" stage. Sometimes ssh connections break or the servers are down. Sometimes gpfs becomes unmounted (grep for gpfs, look for target is not a directory). Contact Anna, Rick, Chiu, or Leila.

Killing the ENLIL+cone simulation on the nodes: (for supervisors only)

- Machine file for real time cone run on hilox1 is:
/data2/ccmc/machines_enlil_realcone
- Check which nodes it lists (should be two). E.g., if it lists nodes 22 and 23:
- ssh node22
- top
16 processes for enlil should be listed
- Kill these processes one by one
- Repeat on the other node

The END.