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Service Change Notice 23-07 Updated
National Weather Service Headquarters Silver Spring MD
540 PM EST Wed Mar 1 2023

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From: Michael Farrar, Director
 National Centers for Environmental Prediction

Subject: Updated: WSA-Enlil Heliospheric Model to Include Cessation of WSA Results Generated at 5Rs, Relocation of Time Series Acquisition Point from Earth to L1, and Improved WSA Results: Effective April 4, 2023

Updated to reflect the new implementation date.

Effective on or about April 4, 2023, beginning with the 1200 Coordinated Universal Time (UTC) run, the Space Weather Prediction Center (SWPC) along with the National Centers for Environmental Prediction (NCEP) will deploy an update to the WSA-Enlil Heliospheric model. In the event that the implementation date is declared a Critical Weather Day (CWD), an Enhanced Caution Event, or other significant weather is occurring or is anticipated to occur, implementation of this change will take place at 1200 UTC on the next weekday not declared a CWD and when no significant weather is occurring.

This update will include:

- * A change in the concept of operations, moving away from the historical bi-hourly execution of the WSA-Enlil model, to:
 - A single cycle (00z) ambient WSA-Enlil model run,
 - Bi-hourly execution of the WSA model component, and
 - On-demand execution of the WSA-Enlil model for coronal mass ejection (CME) events.
- * Cessation of WSA data product from model configuration with outer boundary of 5Rs (Solar radii):
 - wsa_<CRnum>_<CRlon>*_gong.fits
- * Relocation of modeled data acquisition position representing Earth to L1, facilitating a more apt comparison with solar wind plasma observations.
- * Improved numerics of WSA model component providing more accurate solar wind background description.

Changes in WSA-Enlil output:

The following WSA-Enlil changes will apply to products on the NCEP Web Services:

[https://nomads.ncep.noaa.gov/pub/data/nccf/com/wsa_enlil/prod/wsa_enlil.YY
YMMDD/](https://nomads.ncep.noaa.gov/pub/data/nccf/com/wsa_enlil/prod/wsa_enlil.YY
YMMDD/)
[https://www.ftp.ncep.noaa.gov/data/nccf/com/wsa_enlil/prod/wsa_enlil.YYYY
MDD/](https://www.ftp.ncep.noaa.gov/data/nccf/com/wsa_enlil/prod/wsa_enlil.YYYY
MDD/)
[ftp://ftpprd.ncep.noaa.gov/pub/data/nccf/com/wsa_enlil/prod/wsa_enlil.YYYY
MMDD/](ftp://ftpprd.ncep.noaa.gov/pub/data/nccf/com/wsa_enlil/prod/wsa_enlil.YYYY
MMDD/)

Where YYYYMMDD is year, month, and day.

All filenames explicitly containing the cycle corresponding to execution time will be renamed such that the cycle will be replaced by the model run id. Thus, all wsa_enlil.CC.suball.nc (Where CC is cycle) NetCDF files resulting from CME-based WSA-Enlil model runs will be renamed to include the eight digit model run id - wsa_enlil.mrid#####.suball.nc.

All 00 UTC ambient WSA-Enlil runs will have a corresponding mrid=00000000.

The full 3-dimensional (3D) datasets resulting from CME-based model runs will now be provided and will be named as wsa_enlil.mrid#####.full3D.tgz.

All wsa velocity output files which are used to drive the Enlil model, and which have been historically labeled as wsa_vel_21.5rs, will have the corresponding cycle within the filename replaced with the model run id (mrid#####) for CME-based runs. Corresponding files for bi-hourly WSA only runs will maintain the cycle filename convention.

The string "gong" will be replaced with "gong_z" for files named wsa_enlil.mrid#####.gong_z.fits to indicate the change of input data product from the traditional mrbqs to the more accurate mrzqs product. All variables labeled "earth" will actually correspond to L1 within the wsa_enlil.CC.suball.nc (Where CC is cycle) NetCDF files.

Timing changes: Due to the on-demand schedule, timing will also change. Scheduled runs will be generated up to 1.7 hours earlier than the previous version.

Volume changes: Volume will be variable depending on the number of on-demand runs. Baseline daily volume will be 135 MB with no on-demand runs. On-demand runs will be ~30 GB per run.

A consistent parallel feed of data is available on the NCEP HTTPS sites at the following URL:

https://nomads.ncep.noaa.gov/pub/data/nccf/com/wsa_enlil/para/
ftp://ftpprd.ncep.noaa.gov/pub/data/nccf/com/wsa_enlil/para/

NCEP encourages users to ensure their decoders are flexible and are able to adequately handle changes in content order, changes in the scaling factor component within the product definition section (PDS) of the gridded binary (GRIB) files, and any volume changes that may be forthcoming. These elements may change with future NCEP model implementations. NCEP will make every attempt to alert users to these changes prior to any implementations.

NCEP will evaluate all comments and decide whether to proceed.

For questions regarding these changes, please contact:

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For questions regarding the dataflow aspects of these data sets, please contact:

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National Service Change Notices are online at:

<https://www.weather.gov/notification/>

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