NOUS41 KWBC 111120
PNSWSH

Service Change Notice 20-84
National Weather Service Headquarters Silver Spring MD
720 AM EDT Fri Sep 11 2020

To:       Subscribers:
          -NOAA Weather Wire Service
          -Emergency Managers Weather Information Network
          -NOAAPort
          Other NWS Partners, Users and Employees

From:     Thomas Cuff
          Director, NWS Office of Observations

Subject: Add Loop Heat Pipe Metadata to GOES-R ABI Imagery on the
Satellite Broadcast Network (a.k.a., NOAAPort): Effective September 2,
2020

Effective on or after 1500 Coordinated Universal Time (UTC) September 2,
2020, additional metadata will be included in all Geostationary
Operational Environmental Satellite (GOES) Advanced Baseline Imager (ABI)
Sectorized Cloud and Moisture Imagery (SCMI) on the Satellite Broadcast
Network (SBN).

These additional metadata will not affect current handling of these
products by the Advanced Weather Interactive Processing System (AWIPS).

The additional metadata is related to (and/or can help identify) ABI Loop
Heat Pipe anomalies, which cause GOES-17 ABI imagery to degrade at certain
times of the year.  Specifically, six new metadata items will be added to
each NetCDF4 file of GOES-16 and GOES-17 SCMI:

Field (value range)
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Sectorized_CMI:percent_good_pixel_qf (0.0 to 1.0)
Sectorized_CMI:percent_conditionally_usable_pixel_qf (0.0 to 1.0)
Sectorized_CMI:percent_out_of_range_pixel_qf (0.0 to 1.0)
Sectorized_CMI:percent_no_value_pixel_qf (0.0 to 1.0)
Sectorized_CMI: percent_focal_plane_temperature_threshold_exceeded_qf (0.0
to 1.0)
Sectorized_CMI:maximum_focal_plane_temperature (see notes following)

There will be one such set of metadata for each netCDF4 product file.  For
GOES-16, the maximum_focal_plane_temperature value is expected to be near
60K, with minor variability.  For GOES-17, the
maximum_focal_plane_temperature value is expected to range from
approximately 80K to as high as 105K+, with peak temperatures
corresponding to Loop Heat Pipe anomalies.  The values are all type float.

For more information on the predicted focal plane module temperatures, refer to:

https://www.goes-r.gov/users/GOES-17-ABI-Performance.html
and
https://www.goes-r.gov/downloads/users/abiPerformance/GOES-17ABISaturationPredictionReferenceTools.pdf

Background:

The affected GOES East (i.e., GOES-16) imagery is disseminated on the SBN's GOES-R East channel (PID 108).  The affected GOES-16 headers are, with references to the 11-character template:

Template: T1 T2 A1 A2 ii CCCC

T1 = T
T2 = I
A1 = R for large-scale (non-mesoscale) sectors
   = S for mesoscale sectors
A2   Where A1=R, for large-scale (non-mesoscale) sectors,
A2 corresponds to geographical sectors as follows:
   = E for the East CONUS sector
   = P for the Puerto Rico Regional sector
   = S for the East Full Disk sector

ii = ABI channel number (01 - 16);

Between the ii and CCCC is a space

CCCC = KNES (signifies products originated by the National Environmental Satellite, Data and Information Service (NESDIS)).

Additional information about the GOES 16 SCMI (including the format and headers for mesoscale imagery) is described in Service Change Notice (SCN) 18-66:

https://www.weather.gov/media/notification/pdfs/scn18-66goes16imagerytransition.pdf

The GOES West (i.e., GOES-17) imagery is disseminated on the SBN's GOES-R West channel (PID 107).  The affected GOES-17 headers are, with references to the 11-character template:

Template: T1 T2 A1 A2 ii CCCC

T1 = T
T2 = I
A1 = R for large-scale (non-mesoscale) sectors
   = U for mesoscale sectors
A2   Where A1=R, for large-scale (non-mesoscale) sectors, A2 corresponds to geographical sectors as follows:
   = W for the West CONUS sector
   = T for the West Full Disk sector

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    = A for the Alaska sector
    = H for the Hawaii sector
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ii = ABI channel number (01 - 16);

Between the ii and CCCC is a space

CCCC = KNES (signifies products originated by NESDIS).

Additional information about the GOES 17 SCMI (including the format and headers for mesoscale imagery) is described in SCN 18-106:

https://www.weather.gov/media/notification/pdfs/scn18-106goes-17.pdf

Critical weather or other factors may delay the addition of this metadata.

For questions pertaining to this change, please contact:

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Silver Spring, MD
Email: brian.gockel@noaa.gov

and

AWIPS Network Control Facility (NCF) Help Desk
NOAA/NWS Office of Central Processing
Silver Spring, MD
Email: nws.ncf.supervisors@noaa.gov

For questions regarding the scientific or technical content of GOES-16 and GOES-17 products, please contact:

Environmental Satellite Processing Center (ESPC) Help Desk
Suitland, MD
Phone: 301-817-3880
Email: espcoperations@noaa.gov

National Service Change Notices are online at:

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

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