Progress and Plan for Satellite Radiance Assimilation in the NCEP Global Data Assimilation System Andrew Collard¹, Emily Liu¹, Haixia Liu², Russ Treadon¹, Xiaoyan Zhang³, Jim Jung⁴, Azadeh Gholoubi⁵, Daryl Kleist¹, John Derber, Scott Sieron and Xu Li²

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29th November 2022 Global Model Upgrade (GFSv16.3) Assimilate antenna corrected AMSU-A, ATMS and MHS **Brightness Temperatures** •Upgrade to CRTM 2.4.0 and use GFDL cloud table •Assimilate precipitation-affected AMSU-A and ATMS radiances. Turn on Cold Air Outbreak (CAO) QC. (Emily Liu: Poster 9p.04) •Revise thinn ig box for VIIRS and AVHRR radiances (Near Sea Surface Ter perature) and tighten QC. •Reduce we ght given to ASCAT observations.

•Prepare for NOAA-21, GOES-18 and Himawari-9 radiances.



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Planned Upgrades: GSv17 and beyond •Upgrade to CRTM 3.0

- •Upgrade to Thompson microphysics
- •Extend microwave all-sky assimilation to land (Azadeh Gholoubi: Poster 9p.02)
- Improvements to bias correction of satellite radiances and use of high peaking channels in the Rapid Refresh Forecast System (RRFS) (Xiaoyan Zhang: 12.05)
- Assimilation of GMI
- Prepare for MetOp-SG, MTG
- Assimilate Meteosat All Sky Radiance products
- Improved QC of water vapor Jacobians
- •JEDI (Andrew Collard: Poster 4p.06)

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