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RADIANCE STANDARDS

by

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Our Office maintains and operates two radiometric calibration sources that are utilized by various groups within Code 600. One source is a 6-foot diameter sphere and the other a 4-foot diameter hemisphere. Both are internally coated with multiple layers of barium sulfate and house an array of 12 tungsten filament-quartz iodine lamps that provide a uniform diffuse target of radiance traceable to NBS. The lamps are baffled and arranged so that they are not part of the scene during calibrations. Both systems have a 10-inch viewing aperture. The hemisphere is somewhat more versatile in that the aperture can be changed and the system is movable so calibrations can be done at other sites.

Together, these systems have supported numerous GSFC projects and missions during this review period. They include the First International Satellite Land Surface Climatology Project (ISLSCP) Field Experiment (FIFE), French SPOT-2 satellite, Acid Rain Studies, Forest Canopy Studies, the First International Satellite Cloud Climatology Project (ISCCP) Regional Experiment (FIRE), the University of Maryland MECCAS project, the Sudan Rangeland Project, the Satellite Precipitation and Cloud Experiment Microburst and Severe Thunderstorms program (SPACE/MIST), and the Arctic Airborne Science Expedition.

User codes and instruments calibrated are shown below;

Goddard Code

Instrument

613	Barnes Transmissometer
617	Multispectral Cloud Radiometer (MCR) Modular Multispectral Radiometer (MMR)
623	Integrated Camera and Radiometer (ICAR) Portable Field Spectrometer (SE590) Bidirectional Reflectance Field Instrument (BRFI) Exotech Radiometer, Field Polarimeter, MMR
673	SPOT-2 in Toulouse, France Thematic Mapper Simulator at Ames
674	Cloud Absorption Radiometer (CAR) Advance Scanning Array Spectrometer (ASAS) Biometer II, MCR, Field Polarimeter Ocean Data Acquisition System (ODAS)

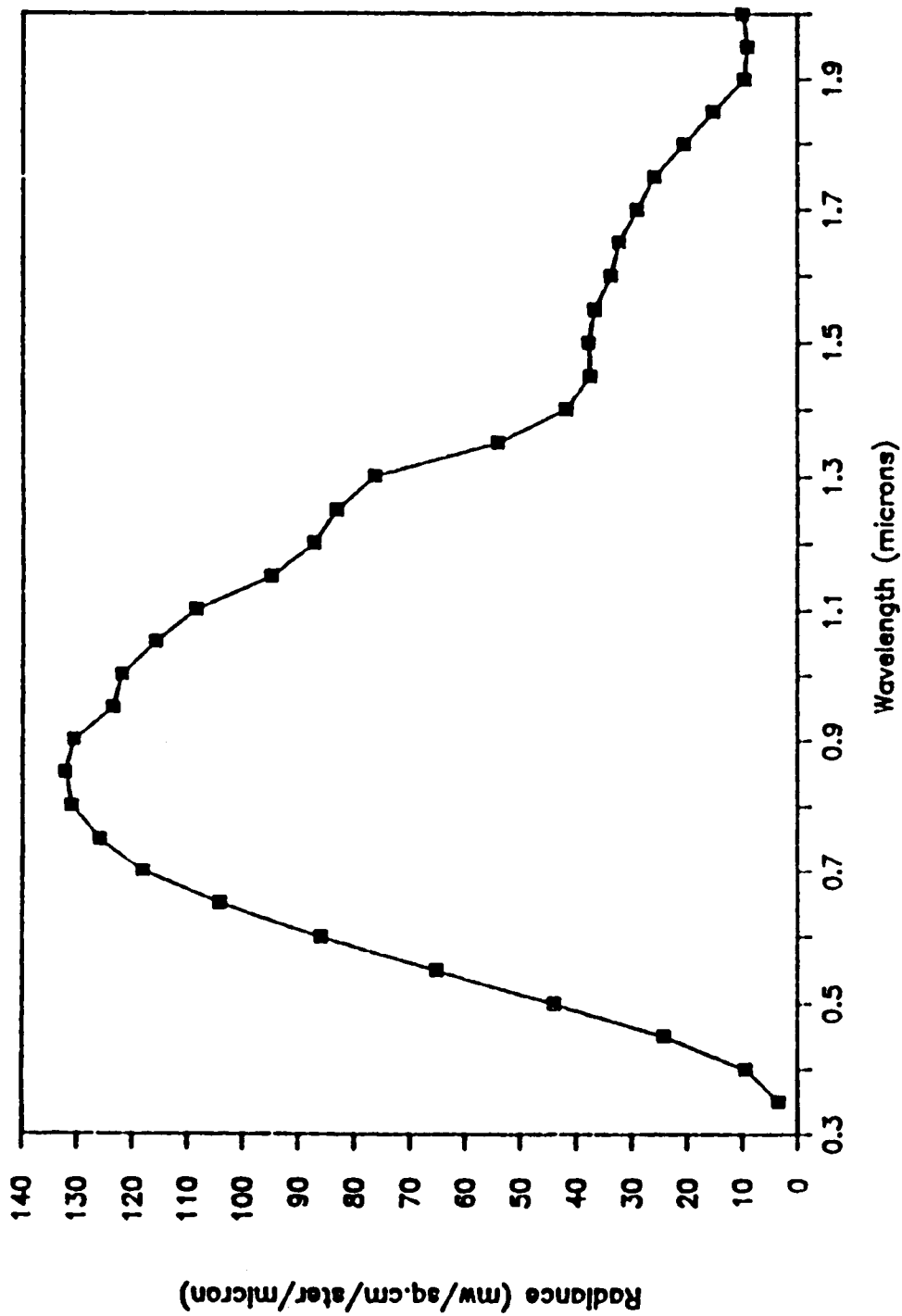


Figure 1. GSFC Six Foot Sphere Data
Ave. Data/JM/DL/2/88

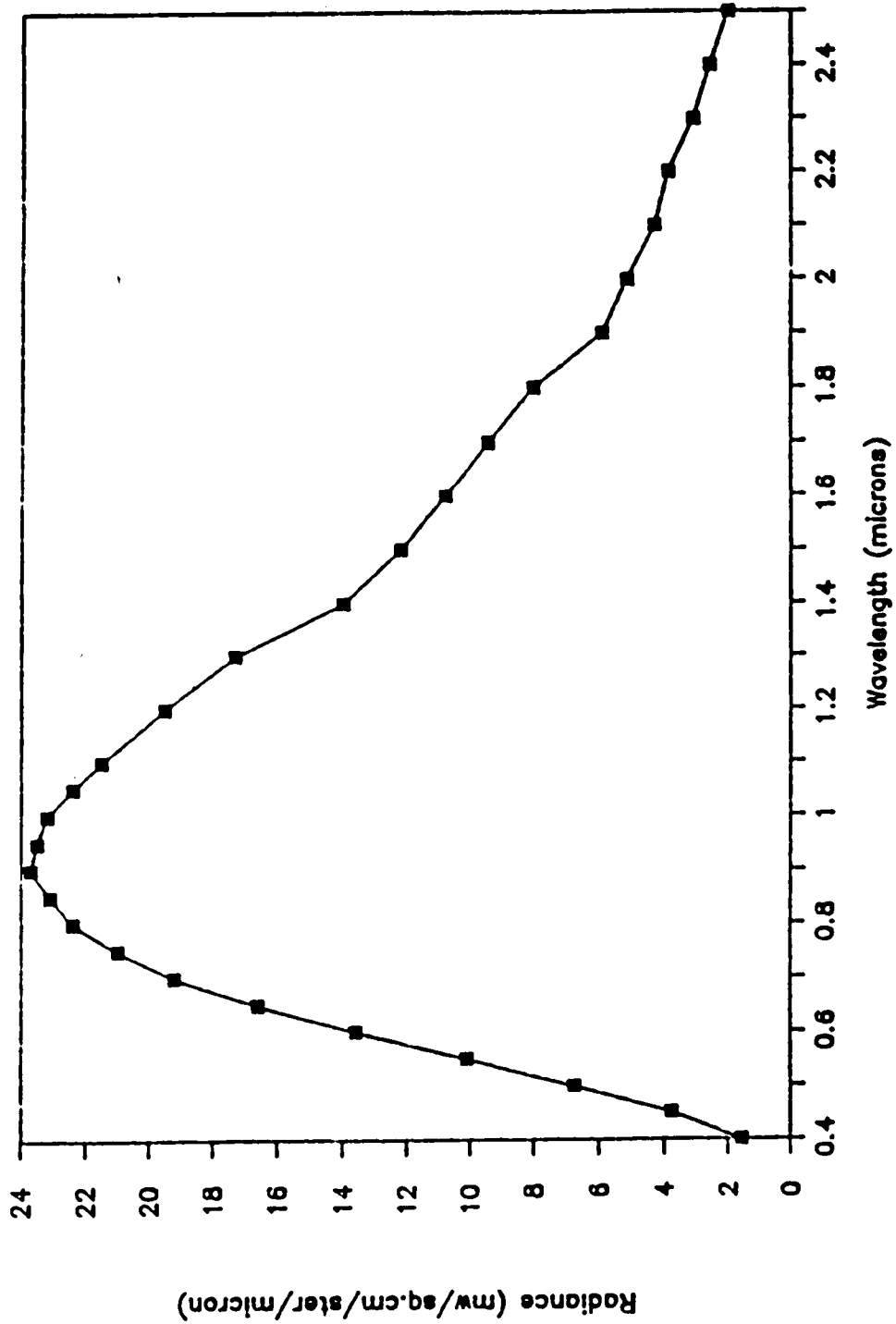


Figure 2. GSFC Hemisphere Data
GSFC/DL/1/8w12/86