MAS CALIBRATION SUPPORT

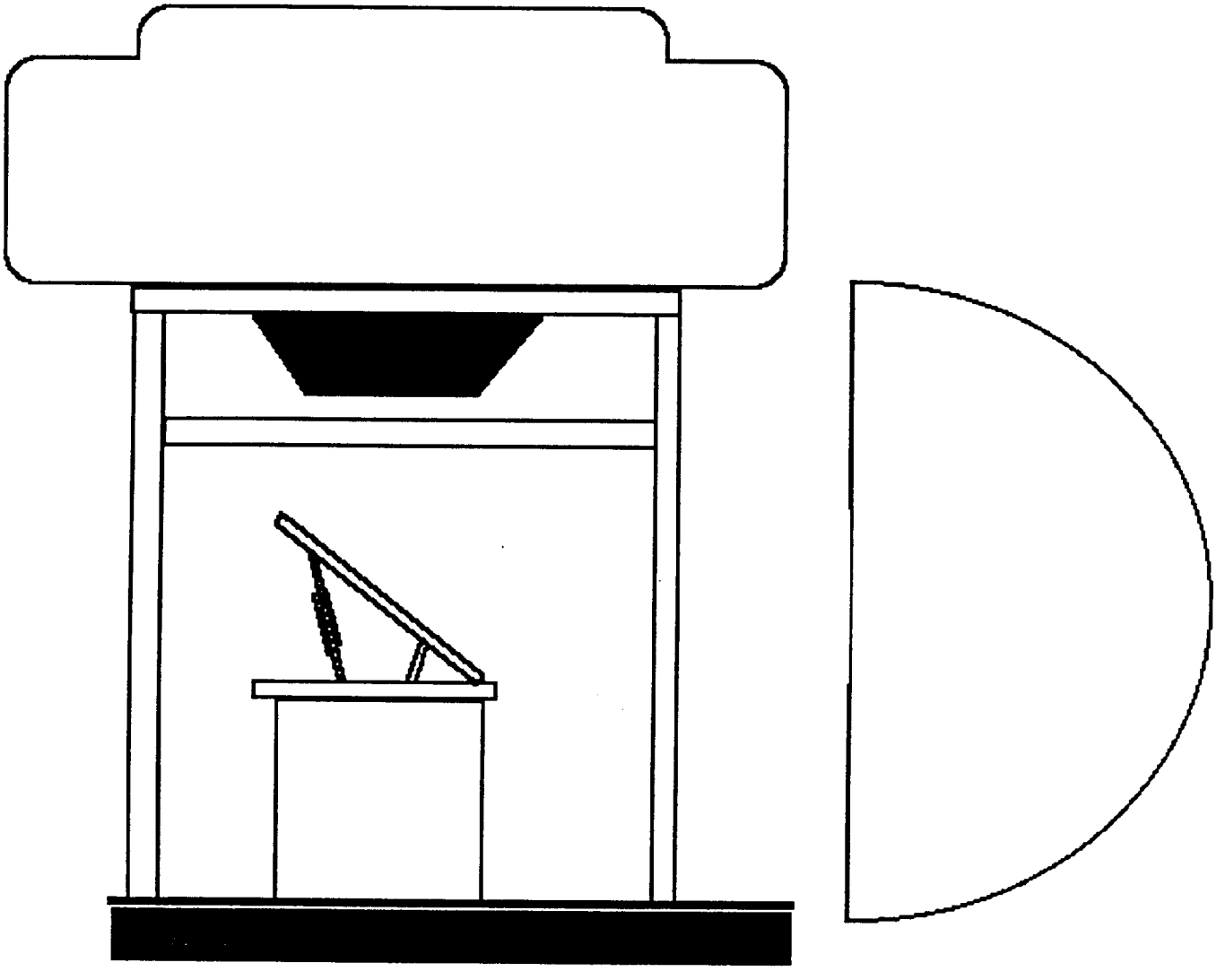
I. HEMISPHERE/MAS SETUP
   A. MAS is downward looking, hemisphere has horizontal view.
   B. Front surface angling mirror from Ames is used.
   C. Hemisphere is aligned with MAS using optical rail and laser.
   D. MAS scans hemisphere from 12 lamps operating stepping down to 0.

II. **HEMISPHERE CALIBRATION WITH OPTRONICS 746 SPECTRORADIOMETER**
   A. Optronics lamp calibrated to NIST standard is used.
   B. 746 scans lamp for system response.
   C. then rotates on platform 90 degrees to scan hemisphere.
   D. Typical scan is from 400nm to 2400nm @ 50nm steps

III. ARC ANGLING MIRROR CHARACTERIZATION
   A. Lamp is put on rotation stand, scanned by 746.
   B. Stand is turned 90 degrees.
   C. Mirror face is placed at axis of rotation.
   D. 746 scans lamp reflected off mirror.

IV. RESULTS
   A. Hemisphere radiance.
   B. ARC angling mirror transmittance.
   C. Lamp level ratios.

V. PROBLEMS TO WORK ON FOR ASTEX MISSION
   A. HUMIDITY - Pat Grant has discussed using a tent and dehumidifier.
   B. ZEROING PROBLEMS - with the Ge detector. Solutions:
      1. Start detector/grating combination at 1100nm.
      2. Turn off Ge pre-amp so it doesn't get overworked.
   C. DAMAGE - to power supplies and hemisphere affected calibration.
      1. Extra packing material and check nuts and bolts.
      2. More "fragile" signs?
   D. MIRROR - no idea of polarization effects, etc.
      1. No room for tilted hemisphere under ER-2 pod.
      2. Can a larger rack be built for the MAS?
      3. Characteristics of hemisphere may change when tilted.



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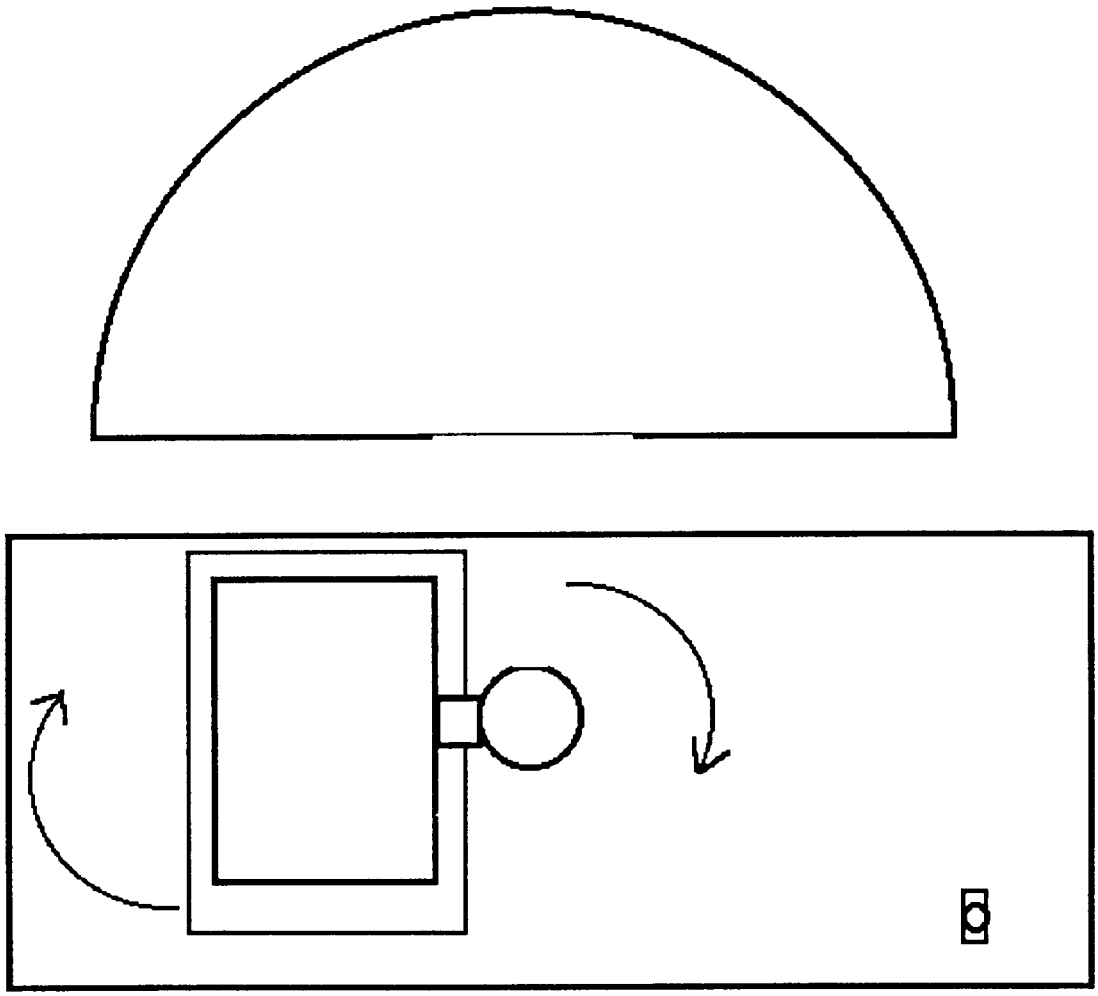
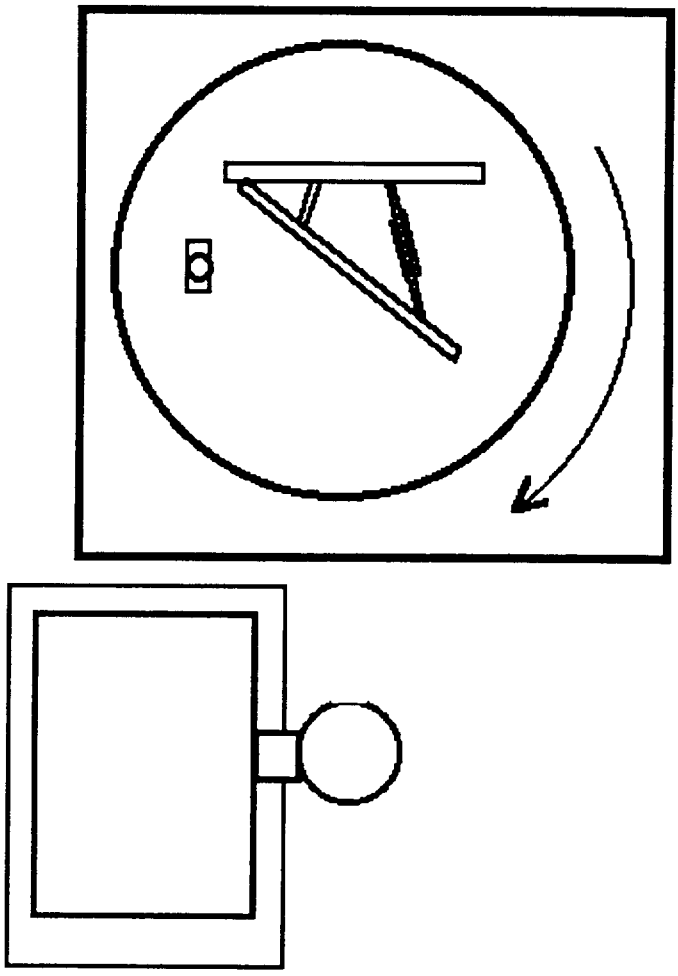
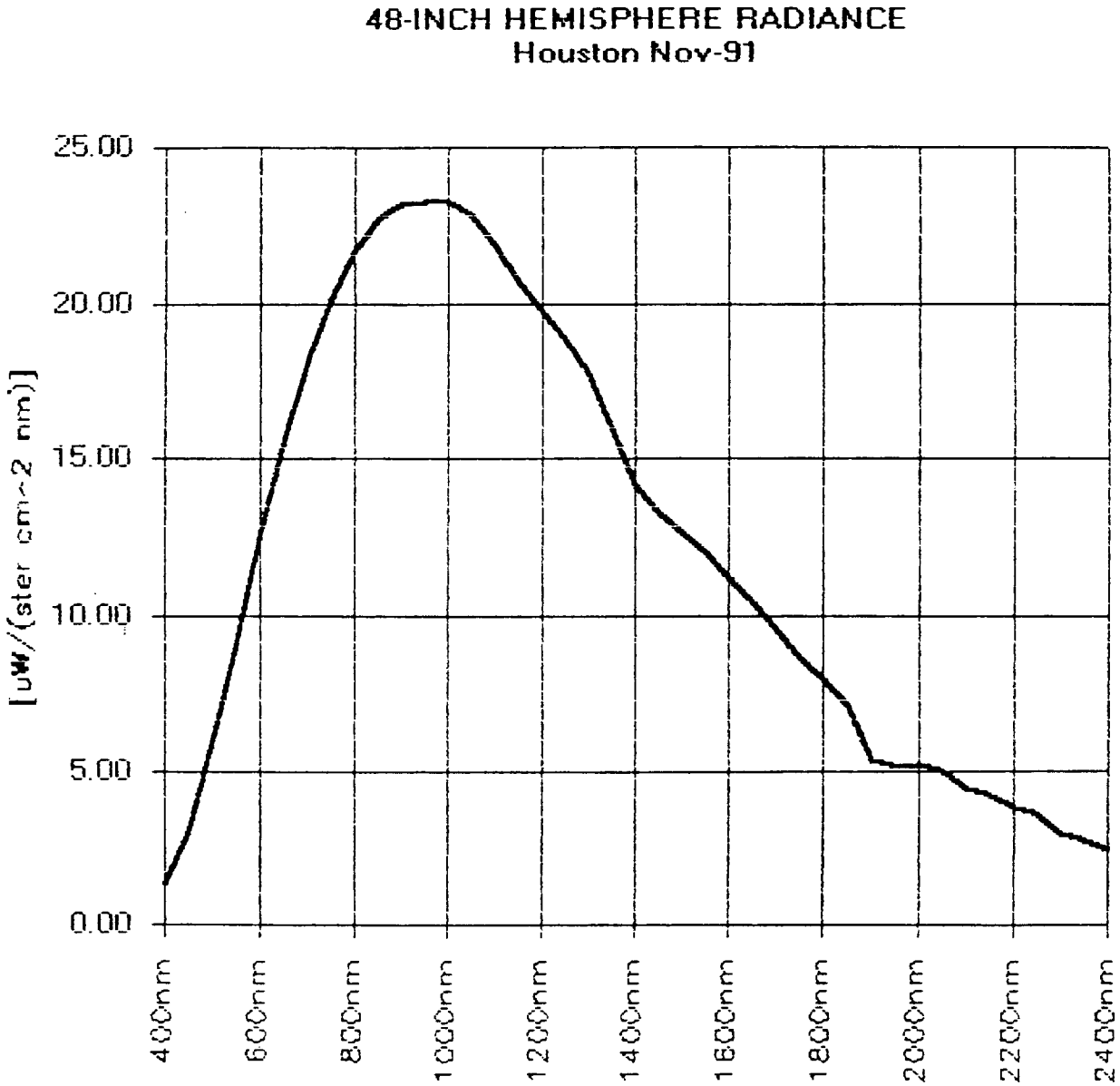
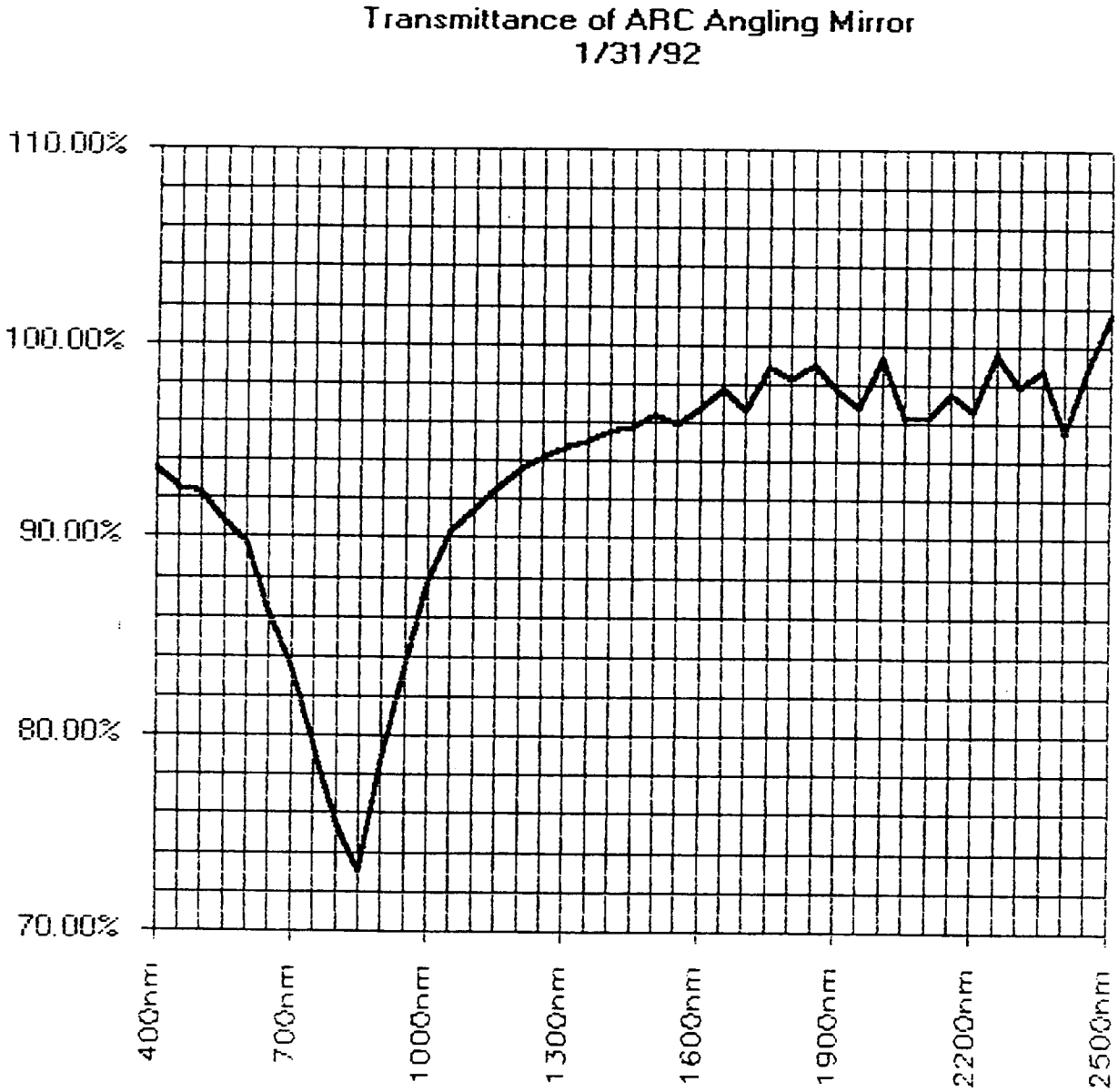





48-INCH HEMISPHERE RADIANCE
Houston Nov-91
[uW/(ster cm^2 nm)]
25.00
20.00
15.00
10.00
5.00
0.00
400nm
600nm
800nm
1000nm
1200nm
1400nm
1600nm
1800nm
2000nm
2200nm
2400nm


Transmittance of ARC Angling Mirror
1/31/92
110.00%
100.00%
90.00%
80.00%
70.00%
400nm
700nm
1000nm
1300nm
1600nm
1900nm
2200nm
2500nm

48-INCH HEMISPHERE
LAMP LEVEL RATIOS