

**ACTS Propagation Terminals
Tracking ACTS in Inclined Orbit**

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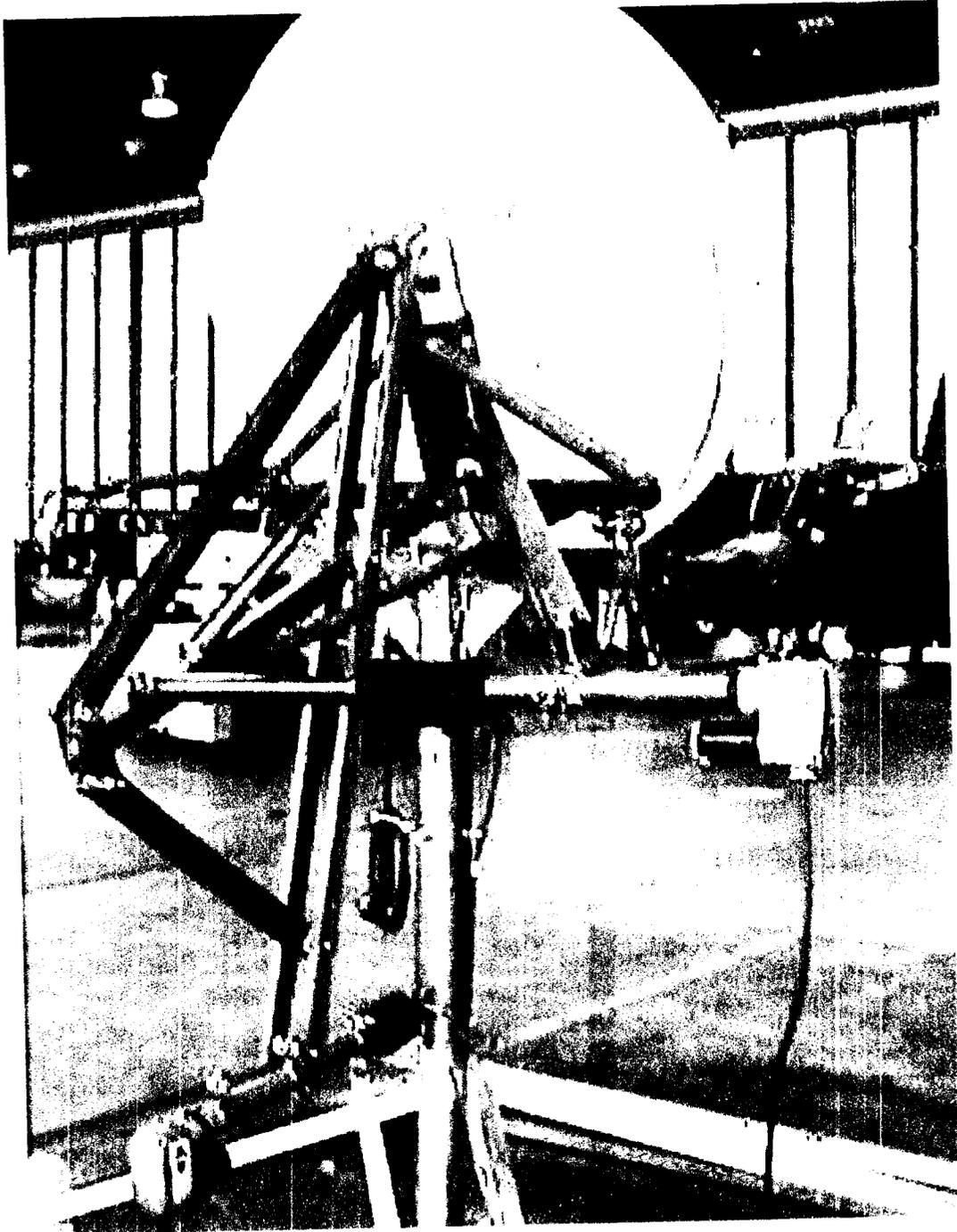
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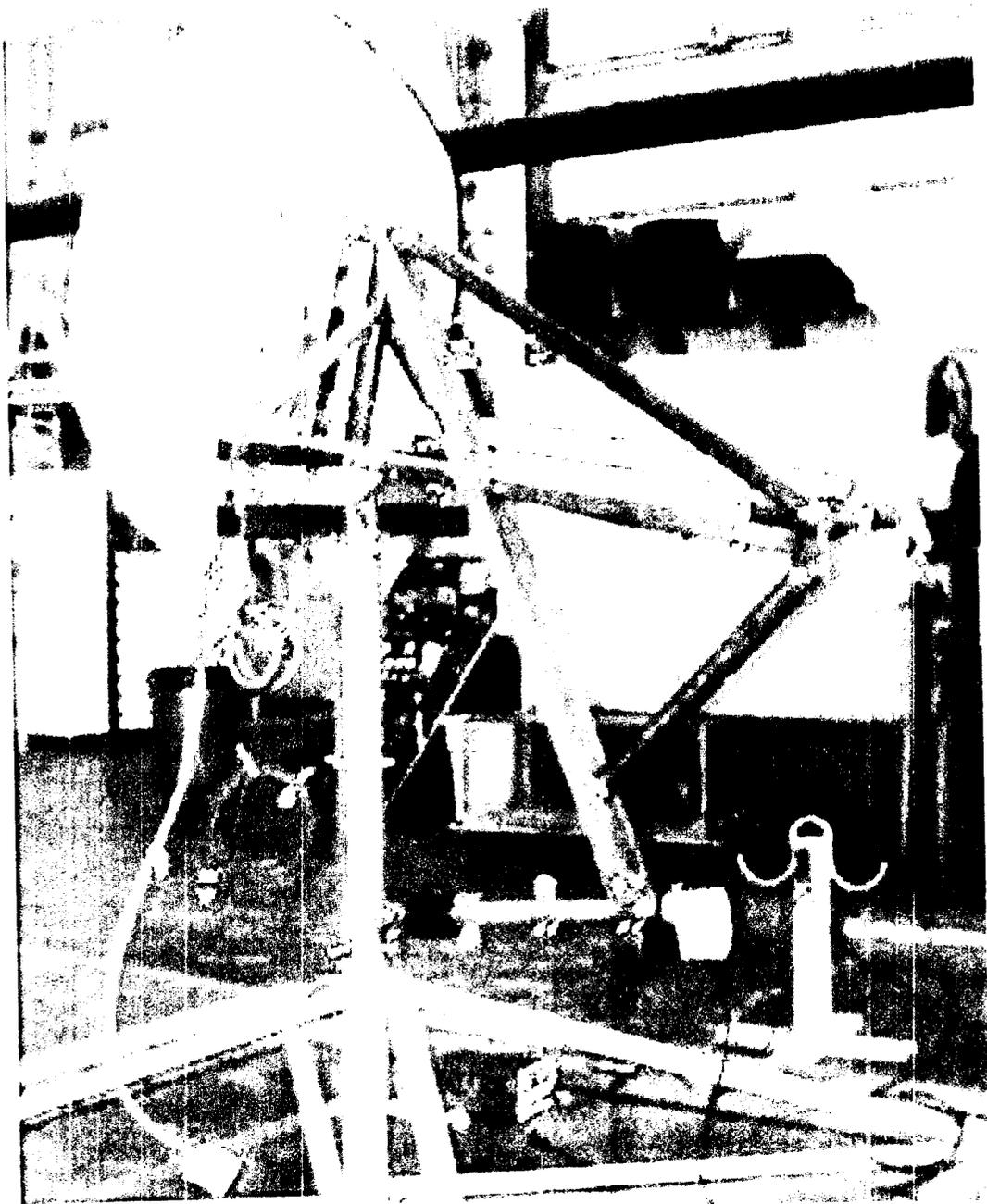
ACTS Propagation Terminals Tracking ACTS in Inclined Orbit requirements.

- The APT tracking is much more stringent than a VSAT system.
- Keep the APT antenna pointed at the ACTS at all times via “Program Tracking”.
- All antenna tracking motion to result in less than 0.4 dB signal change with a goal of less than 0.1 dB.
- Antenna mount position and motion time tagged in the raw data files.
- Use “Step-Tracking” peaking algorithm only for “Zeroing” operations.

Mechanical Positioning system requirements.

- Stiff mechanical support.
- Long lever arms for jack screws.
- Motorized jack screws with incremental motor position indicators.
- Limit switches.





Motion Motor Controller requirements:

- Move the mount small angles in a slow controlled predictable manner.
- Accept and perform position commands via RS-232 interface.
- Report selectable and detailed status via RS-232 interface.
- Hold position under wind loading conditions.
- Provide high speed motion for zeroing incremental position counters.
- Retain detailed incremental and initial setup information during power cycling.

Integration with current DACS Collection System requirements.

- Connect Motor controller to DACS at Antenna.
- Add Software to DACS & TSR for the control and motion logging.
- Develop a method to read the ACTS Ephemeris from pointing angle file.
- Retain detailed incremental and initial setup information during power cycling.

Operational Support Issues.

- Develop program to convert ACTS Ephemeris to pointing angle counts for each site.
- Provide the sites with corrected ACTS Ephemeris weekly.
- Keep it working by resolving all antenna pointing issues.

Remove Wet Antenna Surface Effects of Composite Antenna

- The composite antenna's reflecting surface is an aluminum wire mesh imbedded under a plastic textured surface.
- The surface can be re-manufactured to provide a smooth metallic "front surface" reflector.

SESSION 5. PLENARY

Chairs: R. Crane (Univ. of Oklahoma)

D. Rogers (CRC, Canada)

