FINDINGS OF THE NASA SOUNDING ROCKET WORKING GROUP

April 26-27, 1993

1. We suggest that the Wallops Flight Facility (WFF) provide a column or article in the Suborbital Program newsletter outlining its new capabilities in the area of payload qualification and integration. Such timely information will enable experimenters to become acquainted with these new facilities while planning the qualification and integration phases of their programs.

2. We commend the staff of the WFF for its efforts in expediting the process of payload qualification and integration for experimenters. We understand that the project is now procuring equipment to provide three upgraded telemetry stations. We urge that the first of these be made operational as soon as possible as it will appreciably expedite payload checkout procedures.

3. We ask that a description, including format, of new media (e.g., CD Rom, optical disk, EXABITE tape) by which flight data can be supplied be distributed to current users and be discussed with the experimenter during the early phases of each mission.

4. We are concerned over the potential lack or scarcity of star trackers in the future and urge that steps be taken to improve or at least maintain the current capability. We request that WFF provide us with a status report on its long-range plans in this field. If replacements or upgraded units are contemplated, we urge that they incorporate current (but possibly new to NASA) technology where applicable to upgrade performance and reduce cost. We also suggest that new gyro technology be evaluated and exploited for any new units required in the future.

5. We anticipate greater use of 22-inch diameter experiment sections launched by Black Brant V upper stages. We ask that WFF evaluate means of minimizing the need for forward ballast for such configurations. We expect that such an effort would result in increased flight apogee and therefore observing time. While any changes would probably not encounter limitations on flight apogees due to range safety at the White Sands Missile Range, it would be useful to inform experimenters of weight vs. apogee (time above altitude) and potential range safety implications that they could use in designing their experiments.

6. We identify increased observing time as the single highest priority need for fine-pointed payloads in the UV/visible astronomy, high energy astrophysics, and solar physics disciplines. We urge that WFF become cognizant of current or new (to NASA) technologies (e.g., the "light-sat" technologies) that might be incorporated into future payload support systems (such as attitude control, command, and telemetry systems) to reduce payload weights, thereby increasing suborbital flight times. A response, at whatever level of detail WFF considers appropriate, is requested at the next working group meeting.

7. Rockwell International's "Leap" Program (and possibly others that we have not

heard from) offers possible opportunities for suborbital experimenters. However, the current technology does not appear to offer adequate weight-carrying capability for most existing payloads which include telemetry and recovery systems. Furthermore, the propulsion products released during hover maneuvers may limit viable in situ plasma and neutral particle measurements. There may however be other possibilities, such as station-keeping of mother-daughter payloads, with such a system. We encourage WFF to examine whether or not any aspects or components of Leap's maneuvering technology can be adopted to enhance the performance of current payloads or their maneuvering capabilities. If any potential were identified, it might eventually be useful to alert experimenters to this new technology so they may exploit it in future scientific programs.