

(NASA-News-Release-77-222) EARLY SHUTTLE
FLIGHT TO CARRY MATERIALS PROCESSING
EXPERIMENTS (National Aeronautics and Space
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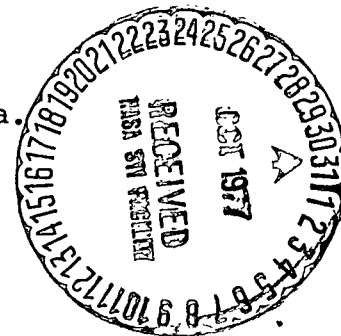
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For Release.

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EARLY SHUTTLE FLIGHT TO CARRY MATERIALS PROCESSING EXPERIMENTS

NASA has selected five materials processing experiments to be packaged and flown on the Space Shuttle during one of its six Orbital Flight Tests (OFT), providing scientists an interim opportunity to conduct investigations prior to Spacelab missions.

The experiment package, called the Materials Experiment Assembly (MEA), will be first flown on one of the early orbital flight tests that are scheduled to begin in 1979. The MEA will be in regular use in later Shuttle flights on a space-available basis.

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Mailed:
October 17, 1977

Experiments for the first MFA package were chosen because they could easily adapt to hardware available from the Space Processing Applications Rocket (SPAR) program and could be fitted into a compact assembly that requires no interface with the Shuttle except for one command from the cockpit to start the experiment processes.

Occupying a relatively small place, the MEA package will be automated and unattended. In addition to the experiment equipment, the package will contain its own power source and a mini-computer to collect data.

Tommy C. Bannister, management coordinator for the MFA project at NASA's Marshall Space Flight Center, Huntsville, Ala., said that besides the tremendous interest by scientists throughout the world in this early opportunity, this will be the first chance to try out a new low cost packaging concept that omits extensive ground testing prior to flight.

"To design and assemble the MEA package so that we get good results from the experiments, using available hardware and omitting extensive ground flight tests, presents a challenge that we are excited about," Bannister said. "If we are successful in keeping costs down in this way and still get the data we want from the experiments, we will have reached an important milestone on the road to processing materials in space."

The space processing program began with five science demonstrations on Apollo missions 14, 16 and 17, and continued on Skylab and the Apollo Soyuz Test Project. The SPAR project, with sounding rockets, is now providing continued flight opportunities until the Shuttle and Spacelab become available. Each SPAR flight provides about five minutes of low-gravity time for experiments during the rocket's coast phase.

The Shuttle orbital flight test will provide scientists with an interim opportunity for longer duration experiment time, allowing them to obtain additional technical and scientific information about their experiments prior to Spacelab missions.

Principal investigators and experiments selected for the MEA project are:

Dr. J. Bruce Wagner, Jr., Arizona State University,
Tempe -- Solid Electrolytes Containing Dispersed Particles.

Ralph A. Happe, Rockwell International, Downey, Calif.
-- Containerless Preparation of Advanced Optical Glasses.

Dr. Herbert Wiedemeier, Rensselaer Polytechnic Institute,
Troy, N.Y. -- Vapor Growth of Alloy-Type Semiconductor
Crystals.

Dr. John W. Vanderhoff, Sinclair Laboratories at Lehigh
University, Bethlehem, Pa. -- Large-Particle-Size-
Monodisperse Latexes.

Dr. S. H. Gelles, Gelles Associates, Columbus, Ohio --
Liquid Miscibility Gap Materials.

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