

N89-10029

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION RESEARCH AND TECHNOLOGY RESUME	
TITLE	LONG-TERM CHANGES IN REFLECTIVITY AND LARGE SCALE MOTIONS IN THE ATMOSPHERE OF JUPITER AND SATURN
PERFORMING ORGANIZATION	NEW MEXICO STATE UNIVERSITY
INVESTIGATOR'S NAME	RETA BEEBE
DESCRIPTION (a. Brief statement on strategy of investigation; b. Progress and accomplishments of prior year; c. What will be accomplished this year, as well as how and why; and d. Summary bibliography)	
<p>A. STRATEGY: A SYSTEMATIC PHOTOGRAPHIC PROGRAM, UTILIZING BROAD-BAND UV, BLUE, GREEN, RED AND NEAR IR PASS-BANDS HAS BEEN CARRIED OUT AT THE 60 CM. TORTUGAS MOUNTAIN TELESCOPE. THIS IS PART OF AN ONGOING PROGRAM THAT SPANS TWO JOVIAN YEARS (25 YRS.) THE PURPOSE OF THIS PROGRAM IS TO PROVIDE AN ONGOING DATABASE TO CHARACTERIZE HIGH RESOLUTION DATA FROM SPACECRAFT AND EARTH-ORBITING OBSERVATORIES.</p> <p>B. ACCOMPLISHMENTS. THE STANDARD OBSERVING PROGRAM HAS BEEN MAINTAINED AND SUPPORT HAS BEEN GIVEN TO OTHER INVESTIGATORS WHO ARE CARRYING OUT COMPLEMENTARY OBSERVING PROGRAMS. THE GENERAL ASPECT OF THE CLOUD DECKS HAVE BEEN MONITORED, AND REVEAL AN INTERVAL THAT SHOWS LITTLE VARIATION IN THE GENERAL ASPECT OF THE CLOUDDECK OF JUPITER SINCE 1981, WHEN THE NORTH TEMPERATUE BELT DARKENED. A CCD CAMERA HAS BEEN ADAPTED FOR LOW COST OPERATION, UTILIZING AN IBM-AT CLONE FOR DATA ACQUISITION. AN RCA FRAME GRABBER HAS BEEN MODIFIED FOR ENCODING THE ARCHIVAL IMAGES.</p> <p>C. ANTICIPATED ACCOMPLISHMENTS. WORK HAS BEGUN ON ENCODING, LIMB DARKENING REMOVAL AND MAP PROJECTION TO PRODUCE A SERIES OF CYLINDRICAL MORPHOLOGY MAPS THAT SPAN A PERIOD OF 25 YEARS. THIS SET WILL CHARACTERIZE LONGTERM CHANGES IN THE JOVIAN ATMOSPHERE.</p>	

d. Publications:

"Time-Variable Nature of the Jovian Cloud Properties and Thermal Structure: An Observational Perspective" R. F. Beebe, G. S. Orton, and R.A. West. NASA Special Report, Edited by Michael Belton, In Press.

Public Education.

"The Smithsonian Library of the Solar System - Jupiter", R. F. Beebe , Nearing Completion.