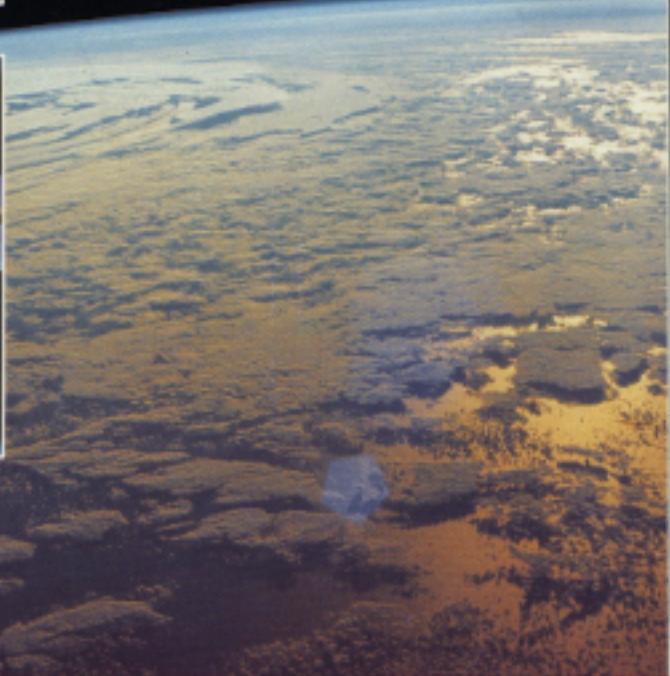
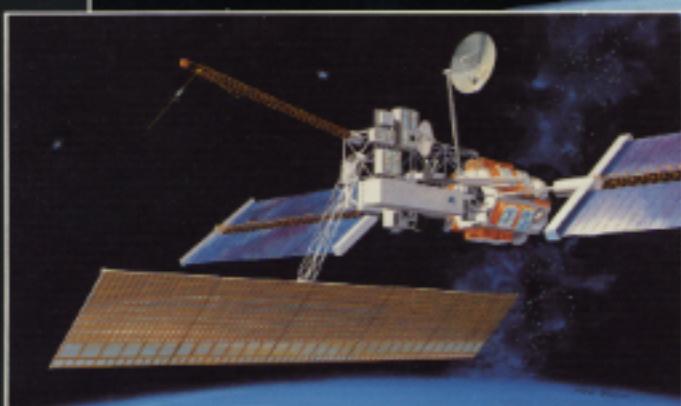




NASA

LEADERSHIP

and America's Future in Space



LEADERSHIP

and America's Future in Space

A Report to the Administrator
By Dr. Sally K. Ride
August 1987

CONTENTS

| | |
|---------------------------------------|--------|
| Preface | Page 5 |
| Introduction | 7 |
| Leadership in Space | 11 |
| Strategic Option Development | 15 |
| Leadership Initiatives | 21 |
| Mission to Planet Earth | 23 |
| Exploration of the Solar System | 26 |
| Outpost on the Moon | 29 |
| Humans to Mars | 32 |
| Programmatic Assessment | 37 |
| Evaluation of Initiatives | 49 |
| Conclusion | 57 |
| Additional Studies | 60 |
| References | 62 |
| Picture Credits | 62 |
| Acknowledgements | 63 |

FIGURES

| | |
|--|-----|
| 1 NASA Strategic/Long-Range Planning Activities | 8-9 |
| 2 Possible Programs to Capture Leadership after 1995 | 17 |
| 3 Leadership Matrix: Representative Achievements, 1957 to 1977 | 19 |
| 4 Leadership Matrix: Representative Achievements, 1978 to 1990 | 19 |
| 5 Mission to Planet Earth | 24 |
| 6 The <i>Comet Rendezvous Asteroid Flyby</i> Mission | 27 |
| 7 The <i>Cassini</i> Mission | 27 |
| 8 The <i>Mars Rover/Sample Return</i> Mission | 28 |
| 9 Return to the Lunar Surface: Piloted Sortie, Expendable Lander | 30 |
| 10 Piloted Mars Sprint Scenario—Split Mission Option: Earth-Orbital Cargo Flight Operations | 33 |
| 11 Piloted Mars Sprint Scenario—Split Mission Option: Earth-Orbital Piloted Flight Operations | 34 |
| 12 Piloted Mars Sprint Scenario—Split Mission Option: Mars-Orbital/Surface Operations | 34 |
| 13 Piloted Mars Sprint Scenario—Split Mission Option: Earth Recovery Operations | 35 |
| 14 Resources Required by Initiatives through 1992 | 46 |
| 15 Resources Required by Initiatives through 2010 | 46 |

TABLES

| | |
|---|----|
| 1 Transportation Requirements for the Initiatives | 42 |
| 2 Orbital Facilities Requirements for the Initiatives | 44 |

BOXES

| | |
|--|----|
| Meeting the Challenge in Aeronautics and Space | 13 |
| Transportation Requirements | 38 |
| Technology | 39 |
| Life Sciences Research | 41 |
| Space Station Evolution | 43 |
| The Office of Exploration | 53 |
| Education | 59 |



