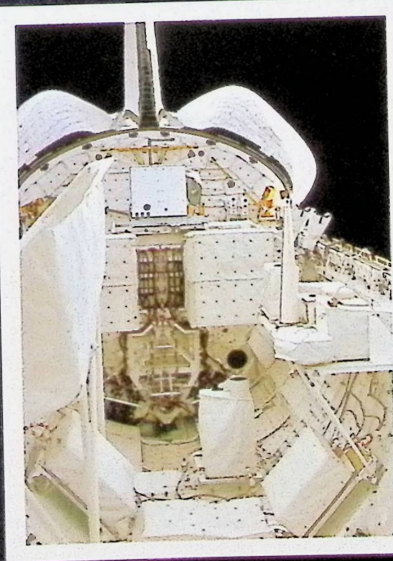
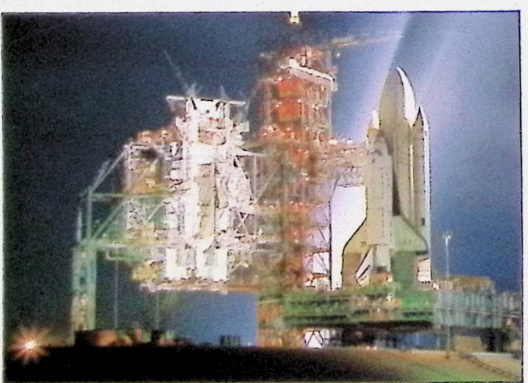
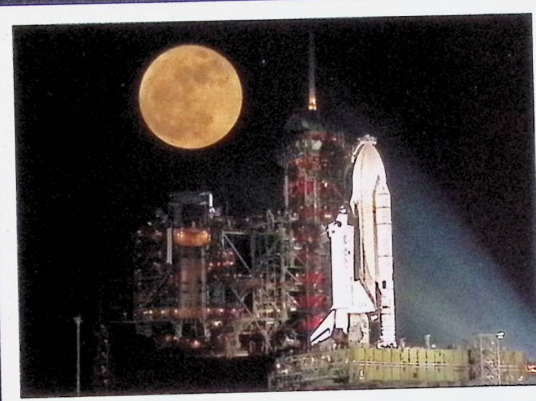
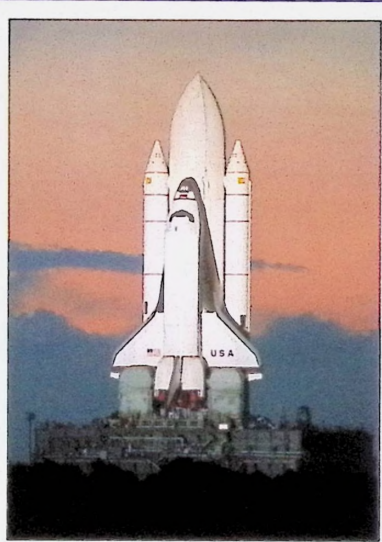
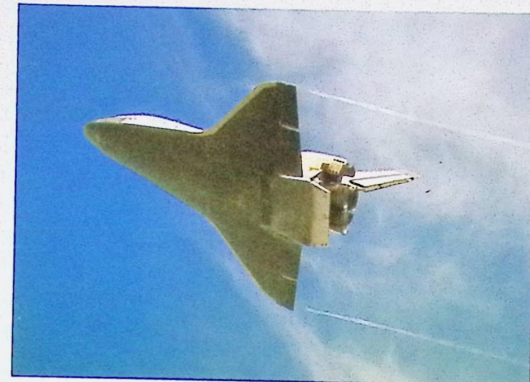
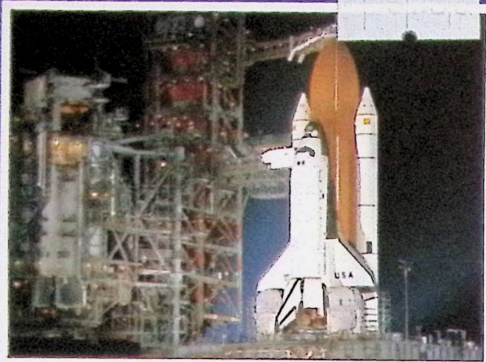


COLUMBIA SPACE SHUTTLE





12 MINI PICTURES ENCLOSED

KENNEDY SPACE CENTER FLA — AERIAL PARADE: THIS UNIQUE FORMATION PHOTOGRAPH WAS TAKEN DURING THE DELIVERY OF THE SPACE SHUTTLE ORBITER COLUMBIA RIDING PIGGYBACK ON NASA'S 747 SHUTTLE CARRIER AIRCRAFT TO THE KENNEDY SPACE CENTER. THE COLUMBIA WAS DELIVERED HERE TODAY AFTER A 2,400-MILE FERRY FLIGHT FROM NASA'S DRYDEN FLIGHT RESEARCH CENTER, EDWARDS, CALIFORNIA.
PHOTO CREDIT—NASA.

STS-2 APPROACH FOR LANDING — THIS VIEW OF THE SPACE SHUTTLE COLUMBIA WAS MADE WITH A HAND-HELD 70MM CAMERA IN THE REAR STATION OF A T-38 CHASE PLANE. MISSION SPECIALIST/ASTRONAUT KATHRYN D. SULLIVAN EXPOSED THIS FRAME AS ASTRONAUTS JOE H. ENGLE AND RICHARD H. TRULY ABOARD THE COLUMBIA GUIDED THE VEHICLE TO AN UNPOWERED BUT SMOOTH LANDING ON THE DESERT AREA OF EDWARDS AIR FORCE BASE IN CALIFORNIA. THE VIEW PROVIDES A GOOD STUDY OF THE HIGH TEMPERATURE PROTECTION MATERIAL ON THE UNDERSIDE OF THE SPACECRAFT WHICH IS EXPOSED TO THE FRICTION OF ATMOSPHERIC ENTRY ON THE RETURN TO EARTH. ALSO NOTE TRAILS OF VAPOR FROM THE WING TIPS.
PHOTO CREDIT—NASA.

KENNEDY SPACE CENTER FLORIDA—STS-3 ARRIVES AT LAUNCH PAD 39A, COMPLETING THE 3.5-MILE JOURNEY FROM THE VAB.
PHOTO CREDIT—NASA.

KENNEDY SPACE CENTER FLA — A GRADUALLY BRIGHTENING MORNING SKY PROVIDES A BACKDROP AS STS-2 IS PICTURED ON ITS JOURNEY FROM THE VEHICLE ASSEMBLY BUILDING TO LAUNCH PAD 39A. ROLLOUT FOR THE SPACE SHUTTLE SCHEDULED TO FLY THE SECOND EARTH ORBITAL MISSION IN THE SPACE TRANSPORTATION SYSTEM PROGRAM NO EARLIER THAN OCTOBER 9, BEGAN AT 4:44 A.M. ON AUGUST 31. THE POWERFUL CRAWLER TRANSPORTER CARRIED THE 1,255,000-KILOGRAM (2,766,000-POUND) SHUTTLE AND THE 3,735,000-KG (8,234,000-LB) MOBILE LAUNCHER PLATFORM ON THEIR 3.5-MILE JOURNEY AT AN AVERAGE SPEED OF LESS THAN ONE MILE PER HOUR.
PHOTO CREDIT—NASA.

KENNEDY SPACE CENTER FLA — AN INTENTIONAL DOUBLE EXPOSURE PROVIDES THIS DRAMATIC SPACE-AGE COMPOSITION OF SPACE SHUTTLE AND MOON. ONE SATELLITE AGELESS AND NATURAL, THE OTHER RECENT AND BORN OF MAN'S DESIRE TO BREAK THE BONDS CONFINING HIM TO EARTH. HERE, STS-2 IS POISED FOR ITS NOVEMBER 12 LAUNCH.
PHOTO CREDIT—NASA.

KENNEDY SPACE CENTER FLA — COLUMBIA CLIMBS TOWARD SPACE FOR A RETURN VISIT AFTER ITS 10:10 A.M. LIFTOFF FROM COMPLEX 39S PAD A. ABOARD THE SPACE SHUTTLE, ASTRONAUTS JOE ENGLE AND DICK TRULY MAN THE COLUMBIA'S COCKPIT ON THE SHIP'S SECOND JOURNEY INTO ORBIT. ON ITS SECOND MISSION, THE COLUMBIA IS CARRYING A PAYLOAD OF SCIENCE AND APPLICATIONS EXPERIMENTS AND A REMOTE MANIPULATOR ARM—A MECHANICAL ARM DESIGNED TO HANDLE CARGO IN ORBIT.
PHOTO CREDIT—NASA.

KENNEDY SPACE CENTER FLA — A TIMED EXPOSURE OF THE SPACE SHUTTLE AT LAUNCH PAD A COMPLEX 39, TURNING THE SPACE VEHICLE AND SUPPORT FACILITIES INTO A NIGHT-TIME FANTASY OF LIGHT STRUCTURES. TO THE LEFT OF THE SHUTTLE ARE THE FIXED AND THE ROTATING SERVICE STRUCTURES.
PHOTO CREDIT—NASA.

KENNEDY SPACE CENTER FLA — COLUMBIA CLIMBS TOWARD SPACE FOR A RETURN VISIT AFTER ITS 10:10 A.M. LIFTOFF FROM COMPLEX 39S PAD A. ABOARD THE SPACE SHUTTLE, ASTRONAUTS JOE ENGLE AND DICK TRULY MAN THE COLUMBIA'S COCKPIT ON THE SHIP'S SECOND JOURNEY INTO ORBIT. ON ITS SECOND MISSION, THE COLUMBIA IS CARRYING A PAYLOAD OF SCIENCE AND APPLICATIONS EXPERIMENTS AND A REMOTE MANIPULATOR ARM—A MECHANICAL ARM DESIGNED TO HANDLE CARGO IN ORBIT.
PHOTO CREDIT—NASA.

KENNEDY SPACE CENTER FLA—THE THIRD SPACE SHUTTLE VEHICLE (STS-3) THUNDERS ALOFT ON TWIN CLOUDS OF FIRE, BEGINNING A PLANNED WEEK-LONG MISSION FOR COMMANDER JACK LOUSMA AND PILOT GORDON FULLERTON. THE REUSABLE SPACESHIP COLUMBIA BEGAN ITS THIRD TRIP INTO ORBIT AT A FRACTION OF A SECOND BEFORE 11:00 A.M. 1ST ON MARCH 22, CARRYING AN OSS-1 PALLET OF EXPERIMENTS TO SENSE THE ORBITER'S ENVIRONMENT AND OBSERVE THE SUN. TWO EXPERIMENTS FOR MATERIALS PROCESSING AND TWO FOR STUDYING PLANT-GROWTH IN ZERO-GRAVITY. GETAWAY SPECIAL TEST CANISTER AND THE REMOTE MANIPULATOR SYSTEM.
PHOTO CREDIT—NASA.

STS-2 ONBOARD PHOTO — THIS PHOTOGRAPH OF THE CARGO BAY OF NASA'S SPACE SHUTTLE COLUMBIA WAS TAKEN BY THE STS-2 CREWMEN FROM INSIDE THE SHUTTLE'S CABIN. IN THE FOREGROUND IS THE PALLET OF EXPERIMENTS DEVELOPED BY NASA'S OFFICE OF SPACE AND TERRESTRIAL APPLICATIONS (OSTA). THE ORBITAL MANEUVERING SYSTEM (OMS) PODS AND VERTICAL STABILIZER OF THE COLUMBIA ARE IN UPPER LEFT CORNER. THE WINDOW THROUGH WHICH THIS 70MM FRAME WAS EXPOSED IS ONE OF TWO ON THE AFT SIDE OF THE FLIGHT DECK. ASTRONAUTS JOE H. ENGLE, COMMANDER, AND RICHARD H. TRULY, PILOT, WERE ABOARD THE COLUMBIA ON ITS SECOND TRIP FOR 2-DAYS, SIX HOURS, 13 MINUTES AND 10 SECONDS PRIOR TO LANDING AT EDWARDS AIR FORCE BASE.
PHOTO CREDIT—NASA.

NASA DRYDEN FLIGHT RESEARCH CENTER, EDWARDS, CA — ASTRONAUTS JOE H. ENGLE AND RICHARD H. TRULY FLEW THE ORBITER COLUMBIA TO A PICTURE-PERFECT LANDING AT ABOUT 3:25 P.M. SATURDAY, NOVEMBER 14, 1981, AT EDWARDS AIR FORCE BASE, CALIFORNIA. ASTRONAUT KATHRYN D. SULLIVAN, PH.D., SHOT THE PHOTO FROM A T-38 CHASE PLANE. PHOTO BY LT. COL. ROBERT GIBSON (USA).
PHOTO CREDIT—NASA.

EARTH AS SEEN FROM OUTER SPACE, KENNEDY SPACE CENTER FLA.
PHOTO CREDIT—NASA.