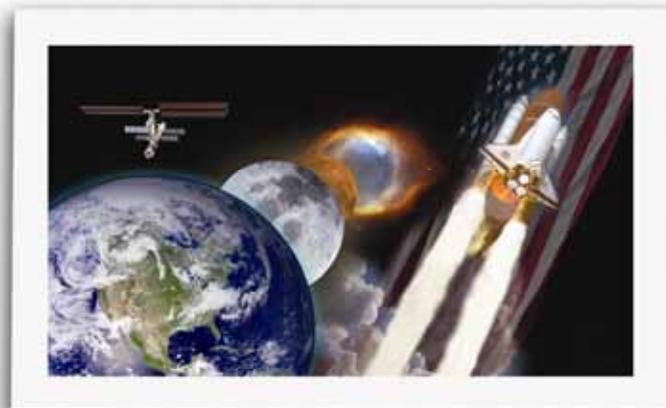
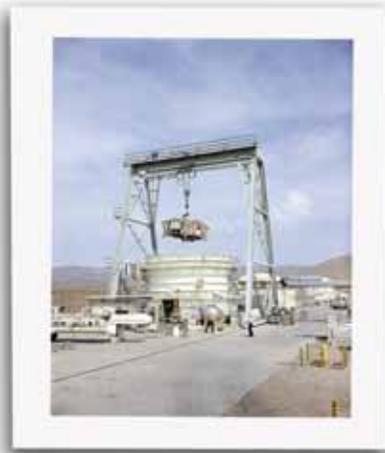


National Aeronautics and Space Administration

LYNDON B. JOHNSON SPACE CENTER

WHITE SANDS TEST FACILITY



WSTF Visitor's Guide



wstf09002039

NASA Road leading to WSTF

## Welcome

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NASA's Lyndon B. Johnson Space Center White Sands Test Facility (WSTF) is nestled in the foothills of the San Andres Mountains, just east of Las Cruces, New Mexico. This open-range, high altitude desert is a kaleidoscope of natural wonders and serves as habitat for the 90 square-mile San Andres National Wildlife Refuge. The U.S. Army's White Sands Missile Range also adjoins the mountain range, creating a federally protected corridor of public safety and limited access. The controlled remote property and moderate desert climate are an ideal setting for year-round testing.

The extraordinary professionals at WSTF provide the expertise and support necessary to manage cost-effective, timely, and accurate evaluation of spacecraft materials, components, and propulsion systems. WSTF provides a wide variety of research and development, test, and laboratory support to all NASA Centers, the Department of Defense, other government agencies, and private industry. The specialized facilities at WSTF are designed to accommodate highly technical and large-scale testing programs. The site's capability for space-simulated vacuum firings of solid and liquid rocket propulsion systems is among the most extensive in the nation. WSTF's location, facilities, and expertise have fostered a world-class reputation.

For more information, visit the WSTF website at <http://www.wstf.nasa.gov/>.



AS11-40-5880

Astronaut footprint in lunar soil during Apollo 11 Mission

### About WSTF

WSTF has been a part of NASA's Lyndon B. Johnson Space Center, located in Houston, Texas, since its construction in 1963. Originally it was known as the Apollo site, because it was established to support the development and qualification of the Apollo Spacecraft propulsion and power systems, as well as associated subsystems. In 1967, the laboratories were expanded to enable extensive testing of the materials and components related to emerging spacecraft propulsion and power technology and crew safety.

WSTF has supported every U.S. human space flight from Apollo to the Shuttle Program and is preparing to support propulsion systems and materials and components testing for the Constellation Program. WSTF also operates a Shuttle landing training facility, White Sands Space Harbor, where laser-leveled runways help prepare Shuttle astronauts for final approaches and landings. The site's runways, navigational aids, and control facilities continuously stand ready as a backup Shuttle landing site. March 30, 1982, Space Shuttle Columbia landed at White Sands Space Harbor as it returned from its third orbital test flight.

WSTF was again prepared in 2003, when NASA requested immediate testing in support of NASA's monumental Return to Flight effort. Within weeks, WSTF engineered a Low Velocity Test Facility to begin testing the effects of ice impacts on Shuttle thermal tiles. WSTF provided additional Return to Flight support by resolving fuel valve seal extrusion concerns, evaluating the impact penetration sensor system, processing Shuttle reaction control subsystem thrusters, and testing other flight essential materials.

Although WSTF is primarily responsible for supporting NASA programs, in recent years, however, the facility has taken on the additional mission of helping industrial firms to design, test, and operate hazardous systems. A variety of test and laboratory research and development is requested each year by all NASA Centers, the Department of Defense, other government agencies, and private industry.

## Visitor Processing Information

[NASA Visitors](#)

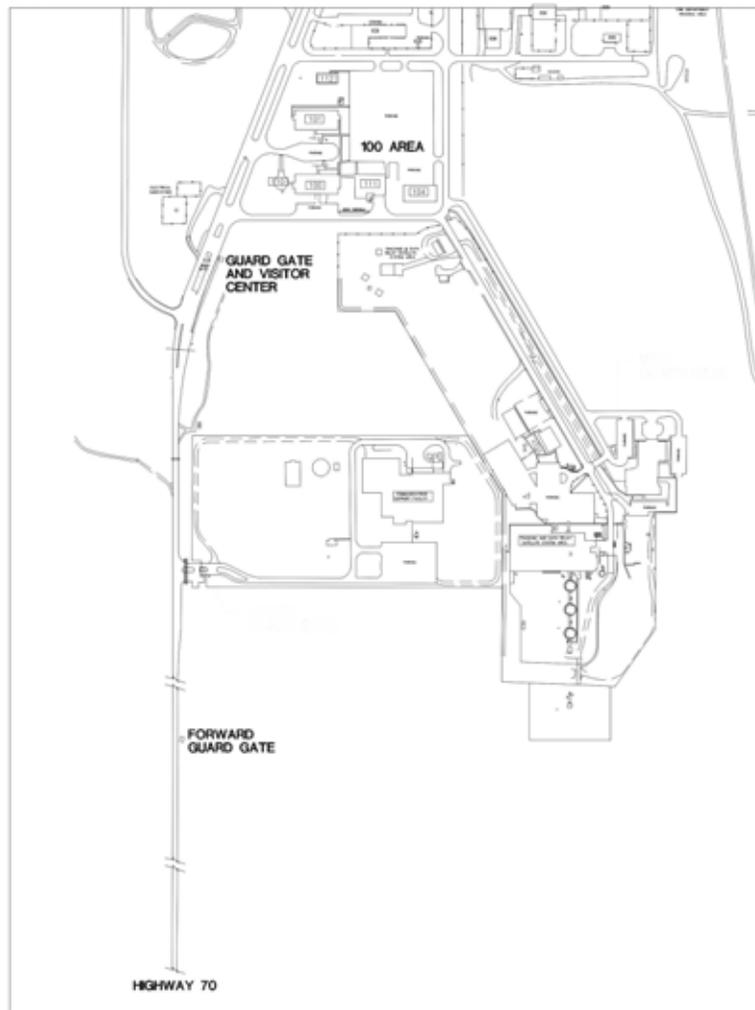
[Non-NASA Visitors](#)

[Non-U.S. Citizen  
Visitors](#)

[Personal Cameras](#)

Because WSTF is a protected and hazardous testing facility, visitor processing is necessary to ensure personal safety and compliance with security measures. Local WSTF contacts are responsible for submitting a Badge Request (JSC Form 473A) to WSTF Security located in building 101, please contact at 505.525.7501.

Before approaching WSTF's main gate, visitors will encounter a preliminary checkpoint where they must show an appropriate badge or other photo-identification. Guards can give directions to specific areas and will inform visitors of specific entry requirements. The WSTF Visitor Center is located in building 116b, which is to the right of the Main Gate. Upon arrival, visitors will view a 15-minute video presentation and a temporary badge will be issued along with a safety information sheet and site map. A visitor who is authorized to be unescorted on site must attend a 2-hour safety briefing held regularly on Monday mornings from 9 a.m. to 11 a.m. Special requests to view the video or schedule a safety briefing can be made by calling 505.524.5230.



Map of WSTF Guard Gates and Visitor Center

Visitors are required to wear badges above the waist in a visible manner and carry their safety information sheets, which list the appropriate responses to various alerts and other pertinent subject matter. Because of the hazardous nature of many tests, it is vital all persons on the premises respond quickly and properly to signs, barriers, signal lights, and alarms.

### **NASA Visitors**

A NASA civil servant badge will allow limited access to the facility when shown at security checkpoints. If an escort is required, the guard will call a WSTF point of contact from the Visitor Center at the Main Gate. Therefore, NASA visitors should have the name and number of a WSTF point of contact available.

### **Non-NASA Visitors**

Non-NASA visitors must park in the Visitor Center lot to the right of the Main Gate, enter building 116b, and provide a photo-identification along with vehicle insurance and registration. Guards will issue safety information and a temporary badge. A WSTF point of contact will be called to verify further instructions. Visitors will not be allowed through the gate without an escort. As visitors exit the gate, badges are deposited in the provided mailbox. Members of tour groups will not normally require badges.

### **Non-U.S. Citizen Visitors**

Non-U.S. citizens require special processing to enter WSTF. Site sponsors must complete the applicable sections of Badge Request Form (JSC Form 473A) and submit the request at least 30 days before the visit. Sponsors should contact the WSTF Security Office at 505.524.5216 or the NASA Security Office at 505.524.5434 to begin foreign national visitor processing. Non-U.S. citizen visitors must have their passports and any other appropriate travel documents with them upon arrival.

### **Personal Cameras**

Visitors may use personal cameras at WSTF with verbal approval from a point of contact or tour guide. Escorts are responsible for ensuring that classified subjects are not photographed. Photography on the access road is prohibited.



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WSTF Administration Buildings

## Safety Information

[Sirens and Alarms](#)

[Traffic Lights](#)

[Warning Lights](#)

[Barriers and Signs](#)

[Traffic Control and Natural Hazards](#)

[Weather](#)

Because management and employees are dedicated to safety, WSTF has been recognized as a five-star Occupational Safety and Health Administration (OSHA) Voluntary Protection Program (VPP) site and has received certifications in ISO 9001 and 14001. These awards are maintained by cultivating a positive safety culture among all WSTF personnel and visitors. The environment can become hazardous if people are not aware of their surroundings at all times. Therefore, everyone on site must carry safety instructions or badge safety placards with them. This guarantees an appropriate and uniform response to safety or emergency measures and alarms.

In addition, multi-colored “rainbow” booklets that offer complete safety and emergency information are available next to all facility telephones. WSTF maintains local dispensary, fire, and emergency services with personnel trained to address the facility’s unique environmental and operational dangers.

**5-911** may be dialed from any WSTF telephone to access local emergency services.

### Sirens and Alarms

Announcements over a loudspeaker will accompany any warning sirens or alarms. The emergency messages will be read twice and provide the appropriate instructions for responding to a particular situation.



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Chemist safely handling materials while testing

## Traffic Lights

Controlled or restricted area traffic lights are located at the entry of each hazardous area and must be followed. Red, amber, and green traffic lights display the current entry status of the 270, 300, 400, 700, and 800 test areas. One of the three lights must be illuminated at all times. A phone number is provided on adjacent signs to call for information or report a light malfunction.

-  DO NOT ENTER. A dangerous condition exists. Please retreat from the area and obtain further instructions.
-  Read and follow the instructions on the sign near the light. A potentially hazardous condition exists and you may endanger yourself and others if you do not follow instructions.
-  You are allowed to enter the area.

## Warning Lights

Controlled or restricted area warning lights are rotating signal lights that are mounted on specific test stands or other areas and must be obeyed. Red, amber, and green warning lights display the operational status of a particular facility controlled by individual Test Conductors.

-  DO NOT ENTER. A hazardous condition exists. Entry is prohibited except for properly equipped emergency and rescue crews.
-  A potentially hazardous condition exists. Access is authorized only by the Test Conductor, Operations Director, or designated alternate.
-  No hazardous condition or operation exists but access is still authorized only by the Test Conductor, Operations Director, or designated alternate.

## Barriers and Signs

All posted signs are to be strictly observed, as are yellow chains and other constructed barriers throughout the site. Restrictive chains and barriers are not to be stepped over or negotiated in any way, even if the apparent hazard seems neutral or harmless. The successful safety culture that all WSTF employees proudly promote ultimately depends on a healthy respect for these safety measures and controls.

## Unpermitted Items

Firearms, gambling, alcohol, and drugs are absolutely NOT permitted at WSTF. The only personnel allowed to carry firearms are uniformed security personnel in performance of their duties.



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Desert wildlife

### **Traffic Control and Natural Hazards**

It is imperative that all persons on WSTF observe traffic regulations, speed limits, and signs. WSTF Security Guards will issue traffic citations to employees or visitors, and are authorized to suspend driving privileges. NASA Road (also known as the access road) can be quite perilous due its dips and lack of shoulders or center divide. Passing on NASA Road is prohibited. During inclement weather, the road's low spots can fill with running water or debris. So, it is especially important to reduce driving speed during and after a rainfall.

People must also be aware of wildlife, such as coyotes, deer, oryx, and other large animals, within the facility or on the roads. Smaller animals like scorpions, snakes, and spiders can make their way into less conspicuous or indoor spaces. Particularly dangerous are Brown Recluse spiders, also known as "fiddle backs" because of fiddle shaped markings, and rattlesnakes. Only Fire Department personnel should engage any animal. They are notified at 505.524.5641.

### **Weather**

Las Cruces has been consistently named by national groups and magazines as a top place to live or retire, largely because of the warm dry weather. Even through a cloudy monsoon season at the end of summer, the sun shines nearly every day of the year. Temperatures can reach over 100 °F at the height of summer but generally hover in the late nineties with little noticeable humidity. Summer lows are usually in the 60s. Spring blossoms and autumn leaves reveal seasonal transitions that are much more subtle on a thermometer. Temperatures gradually transition to and from winter highs in the 60s and lows in the 30s.

As in any desert climate, visitors should be prepared for a broad temperature variation between night and day (approximately 30 °F in the case of Las Cruces). While the area is largely isolated from natural disaster, flash floods and sudden high winds do occur. The availability of drinking water and protection from the sun should always be considered.



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A view of Las Cruces' Organ Mountains

## Las Cruces, New Mexico

[White Sands  
Missile Range](#)

[Holloman Air  
Force Base](#)

[Physical Science  
Laboratory](#)

[X-Prize](#)

[Lodging and  
Dining](#)

[Tourism](#)

Most WSTF employees live in Las Cruces, the second largest city in New Mexico. Las Cruces has a population of about 75,000 within its 46 mi<sup>2</sup> (120 km<sup>2</sup>) land area. With a population growth rate of 8.2 percent per year, it is the eighth fastest growing city in the nation. In addition to WSTF, two military bases greatly contribute to the Las Cruces community. White Sands Missile Range, 35-mi (56-km) east of Las Cruces, is one of the largest overland missile ranges in the world. Holloman Air Force Base, 60-mi (97-km) northeast of Las Cruces is headquarters to the F-117A Stealth Fighters. Las Cruces is also home to New Mexico State University's Physical Science Laboratory and supported the 2005 X-Prize Space Competition. WSTF continues to build strong relationships with the area's aerospace technology leaders.

### **White Sands Missile Range**

The U.S. Army's White Sands Missile Range, located on the opposite side of the San Andres Mountains, is the largest overland test range in the U.S. Like WSTF, it attracts numerous military, government, and private industry professionals to its testing facilities. White Sands Missile Range features an array of sophisticated data collection and analysis equipment that evaluates test items exposed to virtually any climate or electromagnetic conditions in both indoor and outdoor laboratories.

<http://www.wsmr.army.mil/>



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Stealth Fighter on a fly-by over WSTF

**Holloman Air Force Base**

Holloman Air Force Base was established in 1942 west of Alamogordo, New Mexico. Holloman is currently operated by the 49<sup>th</sup> Fighter Wing and houses the F-117A Nighthawk, T-38 Talon, QF-4 drone, and German Air Force Tornado. Holloman continues to serve at the forefront of military operations with the F117A stealth aircraft, the Air Force's most technological fighter. Holloman personnel also assist in supporting the White Sands Space Harbor as an alternate runway for NASA Space Shuttle mission. Fourteen hundred Holloman personnel supported the Space Shuttle Columbia landing at White Sands Space Harbor on March 30, 1982.

<http://www.holloman.af.mil/>

**Physical Science Laboratory**

The New Mexico State University Physical Science Laboratory was established in 1946 to provide engineering and scientific support to the White Sands Missile Range. It has since broadened its influence to assist the region in economic growth by developing new and critical technologies. The Physical Science Laboratory has gained an impeccable reputation among its many aerospace and defense customers and is a resource for any technical development interests. The organization consists of four laboratories, each with unique capabilities: The Information Operations Laboratory, The Aerospace and Autonomous Systems Laboratory, The Telemetry and Missile Systems Laboratory, and The Emerging Technologies Laboratory.

<http://www.psl.nmsu.edu/>

**X-Prize Foundation**

The X-Prize is the vision of private industry researchers and developers promoting space exploration by an annual competition, the X-Prize Cup. Initial X-Prize events prompted imaginative and cost effective proof that space exploration and "space tourism" can be affordable and practical. Supporters are also motivated by the incredible contributions that space technology development has brought to humanity. The intention of the X-Prize foundation is to make space flight fun for the whole family and inspire the next

generation of space pioneers. The widely promoted 2005 X-Prize Cup was held in Las Cruces, after the city beat competing bids in Florida, California, and Oklahoma. The State of New Mexico allocated \$9 million to build the necessary facilities and compliment the local Southwest Regional Spaceport. The Spaceport is designed for industrial space launches and passenger carrying rockets that support both orbital and suborbital flights. The foundation has contributed immensely to making commercial and experimental launches more routine, inviting private innovation and renewed public interest in the final frontier.

<http://www.xpcup.com/index.cfm>

### **Lodging and Dining**

Las Cruces is located at the junction of Interstates 25 and 10, which is 45-miles west of El Paso, Texas. The drive from Las Cruces to the El Paso International Airport takes a little over an hour, which would typically be an hour and a half from WSTF. The White Sands Missile Range, White Sands National Monument, Holloman Air Force Base, and city of Alamogordo are all directly east of WSTF on U.S. Highway 70, which branches off of Interstate 25 just north of Las Cruces. Albuquerque is a three-hour drive north and Tucson, Arizona is a four-hour drive west.

Las Cruces offers a broad range of accommodations and culinary delights from quaint and historic settings to contemporary lodging and fine dining. Please visit the websites below to explore Southern New Mexico's many enticing options, or contact the Las Cruces Convention and Visitor's Bureau at 505.541.2444.

[http://www.lascrucescvb.org/html/las\\_cruces\\_hotels\\_and\\_motels.html](http://www.lascrucescvb.org/html/las_cruces_hotels_and_motels.html)

[http://www.lascrucescvb.org/html/las\\_cruces\\_new\\_mexico\\_dining.html](http://www.lascrucescvb.org/html/las_cruces_new_mexico_dining.html)

### **Tourism**

Las Cruces certainly serves as the crossroads for many geologic and cultural dynamics, bolstering New Mexico's reputation as the "Land of Enchantment." The city affords a truly unique community of lifestyles, traditions, vegetation, and wildlife. The Mesilla Valley's impressive farms and orchards invite shopping and driving tours in every direction. Historical and geographical attractions abound and provide further insight into New Mexico's unique cultural heritage.

For more information on New Mexico's spectacular and extensive tourist activities, please contact the New Mexico Tourism Department.

<http://www.newmexico.org/index2.php>

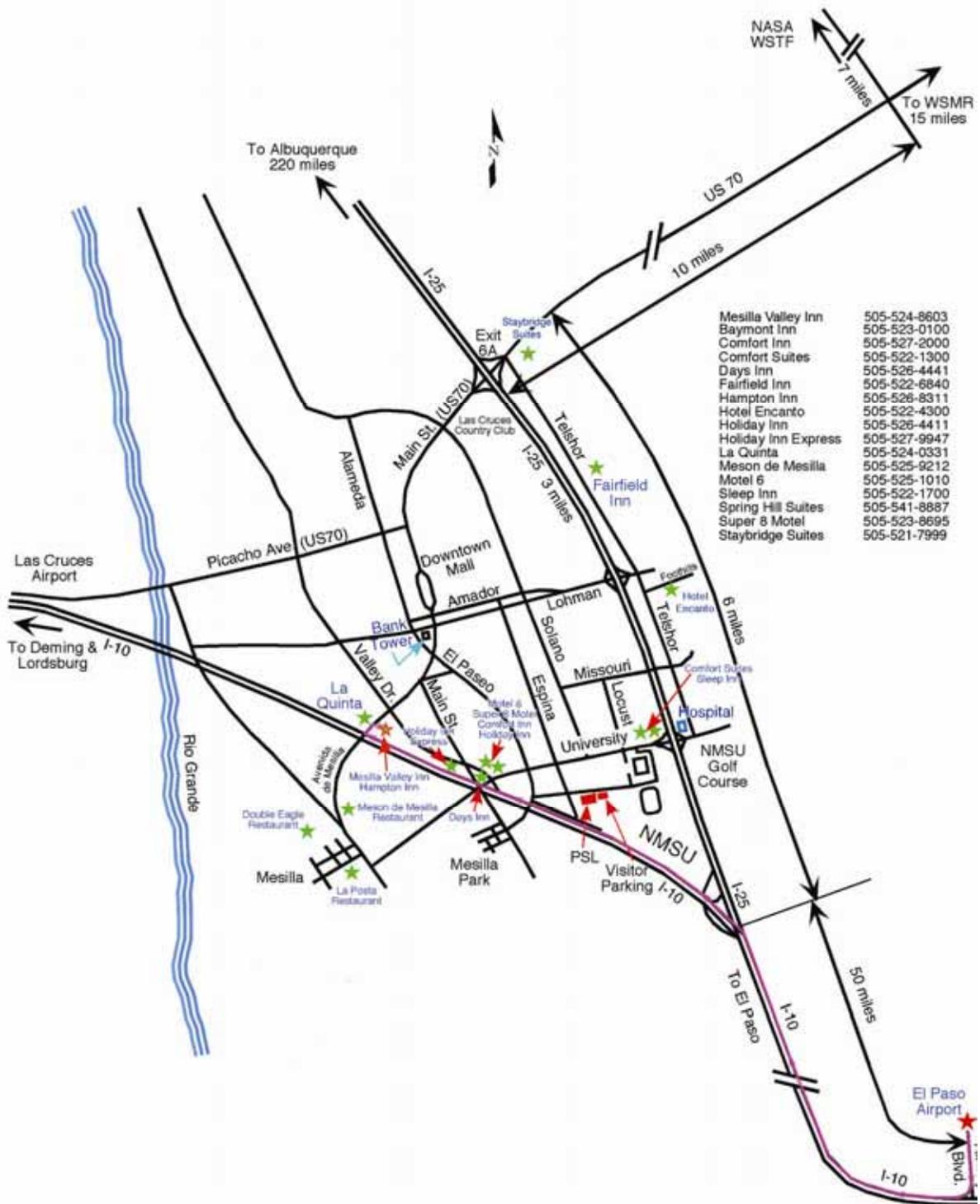
## Map from El Paso Airport



### Driving Directions

1. Exit El Paso International Airport, going south on **Airway Blvd.**
2. Merge onto **I-10 W/US-180 W** (~ 1 mile).
3. Merge onto **I-25 N** toward Las Cruces/Albuquerque (~ 43 miles).
4. Merge onto **US-70 E/US-82 E** via **Exit 6** toward Alamogordo.
5. Take the **NASA/Baylor Canyon Road Exit** (~ 15 miles).
6. Bear left onto **NASA Road**, going under the overpass.
7. Follow **NASA Road** to the Forward Gate (~ 5 miles).

# Las Cruces to WSTF Map



Mesilla Valley Inn	505-524-8603
Baymont Inn	505-523-0100
Comfort Inn	505-527-2000
Comfort Suites	505-522-1300
Days Inn	505-526-4441
Fairfield Inn	505-522-6840
Hampton Inn	505-526-8311
Hotel Encanto	505-522-4300
Holiday Inn	505-526-4411
Holiday Inn Express	505-527-9947
La Quinta	505-524-0331
Meson de Mesilla	505-525-9212
Motel 6	505-525-1010
Sleep Inn	505-522-1700
Spring Hill Suites	505-541-8887
Super 8 Motel	505-523-8695
Staybridge Suites	505-521-7999

