U.S. Department
of Transportation
**Federal Aviation
Administration**

Northwest Mountain Region
Colorado, Idaho, Montana, Oregon
Utah, Washington, Wyoming

1601 Lind Avenue S.W.
Renton, Washington 98057-4056

FEB 28 2007

Dr. Antonin Bouchez
Caltech Optical Observatories
Palomar Observatory
35899 Canfield Road
Palomar Mountain, CA 92060

Dear Dr. Bouchez:

The Western Service Area, System Support Branch has performed an aeronautical study regarding your request for operation of the Laser Guide Star system at the Caltech Optical Observatories in Palomar Mountain, California on the dates and times indicated below. Limitations on laser operations are required to ensure that laser light beams are not propagated into navigable airspace and illuminate aircraft.

We have no objection to your laser operation, provided the operator complies with the following conditions:

- Operations will be conducted at the following location, date, and times:

Caltech Optical Observatories
Palomar Observatory
35899 Canfield Road
Palomar Mountain, CA 92060
Latitude 33° 21' 22.3"N/ Longitude 116° 51' 52.7"W
Planned laser projection schedule:

February 26, 2007 18:40-5:20 PST
February 27, 2007 18:40-5:20 PST
February 28, 2007 18:40-5:20 PST

April 2, 2007 20:10-05:30 PDT
April 3, 2007 20:10-05:30 PDT
April 4, 2007 20:10-05:30 PDT
April 5, 2007 20:10-05:30 PDT
April 6, 2007 20:10-05:30 PDT

April 23, 2007 20:25-05:05 PDT
April 24, 2007 20:25-05:05 PDT

April 25, 2007 20:25-05:05 PDT
April 26, 2007 20:25-05:05 PDT
April 27, 2007 20:25-05:05 PDT

May 23, 20:55-04:35 PDT
May 24, 20:55-04:35 PDT
May 25, 20:55-04:35 PDT
May 26, 20:55-04:35 PDT

July 23, 20:55-04:50 PDT
July 24, 20:55-04:50 PDT
July 25, 20:55-04:50 PDT
July 26, 20:55-04:50 PDT
July 27, 20:55-04:50 PDT
July 28, 20:55-04:50 PDT
July 29, 20:55-04:50 PDT

- The laser beam angel will not exceed 45 degrees.

- Five certified aircraft spotters (observers) will operate at or in the vicinity of the laser beam, two outside, two inside and one on standby.

- Observers are to be equipped with instantaneous means of communications with the laser operator to terminate laser emission if aircraft appear to be approaching the outer limits of adverse laser effects.

- Laser beams are to be terminated or directed away from any aircraft that could be adversely affected by the laser beams. This means, within the full distance of any adverse affects to pilots or passengers on aircraft. This stoppage can be at the discretion of the operator, or as the result of directions from the responsible air traffic control facility, which is the Los Angeles Air Route Control Center (ZLA ARTCC).

- It is understood that the onsite person responsible for safety and operating the laser equipment can be instantly accessible during the laser operation at phone numbers 760-742-2106 or 760-742-2108.

- The operator will use additional airspace safety monitoring systems consisting of a Visual All Sky Camera with a range of 100 to 100,000 feet and a boresighted thermal IR camera with a range of 100 to 60,000 feet and a narrow-beam RADAR.

- The operator will provide notification of any cancellation of laser tests to ZLA ARTCC at 661-265-8205.

- The operator will advise San Diego Automated Flight Service Station (AFSS) at 858-277-0503 in the event the laser test is canceled. San Diego AFSS will coordinate these

changes with the notice to airmen (NOTAM) section of the U. S. NOTAM Office (USNOF) at (888) 876-6826 in accordance with FAA Order 7930.2.

This Letter of Determination is only applicable to FAA requirements. Any other necessary approvals must be obtained from the appropriate authorities. This determination does not relieve the sponsor/operator of compliance responsibilities related to laws, ordinances, or regulation of any federal, state, or local government agency.

For further information concerning this matter, please contact Richard Roberts, Western Service Center, Airspace Systems Specialist at (425) 917-6728.

Sincerely,

for

Clark Desing
Manager, System Support Group
Western Service Center

cc: ATA-400
ANM-520
ZLA ARTCC
SCT