The Center of the Universe *(right in your backyard)*

*a presentation to*

Members of the California State Government

March 12, 2013

Lt. Gen. Eugene Tattini (USAF, Ret.) Deputy Director

NASA Jet Propulsion Laboratory
California Institute of Technology
NASA’s Mission

• To understand and protect our home planet

• To explore the universe and search for life

• To inspire the next generation of explorers
Space Exploration
Sponsored by U.S. Government

NASA

$17.7 Billion in FY12

Science 28%
Human exploration 45%
Aeronautics 3%
NASA ‘Firsts’

Dryden’s X-1: First supersonic flight at Dryden (formerly Muroc Army Airfield) December 9, 1946

JPL’s Explorer 1: First US Spacecraft launched January 31, 1958

Ames: World’s Largest Wind Tunnel (showing MSL parachute test)
NASA CENTERS

JPL is a division of Caltech but is also a federally funded research and development center (FFRDC). JPL is the only NASA Center that is managed by a university.

1. (HQ) NASA Headquarters: Washington, DC
2. (ARC) Ames Research Center: Moffett Field, CA
3. (DFRC) Dryden Flight Research Center: Edwards, CA
4. (GRC) Glenn Research Center: Cleveland, OH
5. (GSFC) Goddard Space Flight Center: Greenbelt, MD
6. (JPL) Jet Propulsion Laboratory: Pasadena, CA
7. (JSC) Johnson Space Center: Houston, TX
8. (KSC) Kennedy Space Center: Cape Canaveral, FL
9. (LARC) Langley Research Center: Hampton, VA
10. (MSFC) Marshall Space Flight Center: Huntsville, AL
11. (SSC) Stennis Space Center: Bay St. Louis, MS
12. (WFF) Wallops Flight Facility: Wallops Island, VA
What is JPL?

- Division of Caltech
- NASA sponsored Federally Funded Research and Development Center (FFRDC)
- $1.5 Billion Budget
- 5000 Employees
  - 1000 Ph.Ds
- Positive economic impact on Southern California
JPL History
We put rovers on Mars
CURIOSITY
500 MILLION

Half-billion impressions in US top 50 newspapers & top 25 TV markets week of landing
13 million unique web visitors on landing night (combined NASA/JPL web sites)
TIMES SQUARE

Landing events held across the country, including 65 events at museums/science centers/planetariums.
In Pasadena JPL hosted 10,000 guests at the lab, on campus, and at the Pasadena Convention Center.
LEARNING

81,000 students | 30,000 teachers | 38,000 Open House visitors | 26,000 tour visitors | 3+ million visitors to JPL exhibits across the country
Jul 2011 – Jun 2012
SATURN
JUPITER
KEPLER
EARTH
SINCE 1936
“The greatest risk to man is not that he aims too high and misses but that he aims too low and hits.”
— Michelangelo
Relative Size of the Center Budget to their State’s Gross Product

Source: U.S. Department of Commerce for State Domestic Products
# State Support to NASA

**1993 Roemer Amendment to kill the Space Station was defeated 216-215**

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**Observation:** Texas had only 30 votes yet they provided almost twice the support than that of California which had 51 votes.

**Notes:**
- In 1993, California got more funds for Space Station than Texas given contractor participation.
- It was not a question of political party since Texas had 13 Republicans and 17 Democrats while California had 25 Republicans and 27 Democrats in 1993.
Proud?
Yes But……Will Not Rest On Our Laurels

First flyby of Mars: Mariner 4
First planetary rover: Mars Pathfinder
First interplanetary spacecraft: Mariner 2
First to orbit of two different solar bodies: Dawn
First comet impact: Deep Impact
First to orbit Sun’s poles: Ulysses
First to orbit Jupiter: Galileo
First twin “formation-flying” at the Moon: GRAIL
First tour of the gas giants: Voyager 2
First soft-landing on the Moon: Surveyor 1
First successful probe launched at Moon: Ranger 7
First sample return from a comet: Stardust
First interstellar mission: Voyager
First orbit change using aerobraking: Magellan
First escape from Earth gravity: Pioneer 4
First Sample Return Beyond Lunar Orbit: Genesis