Why Space?

Jim Crocker
Vice President & General Manager
Lockheed Martin
Space Systems Company International

January 29, 2015

"The richest major economy in the world"…

THE TIMES

January 15, 2015

British economy can lead world, Osborne predicts

Sam Coates Deputy Political Editor
Philip Aldrick Economics Editor

Britain could be "the richest major economy in the world" by the 2030s but still has a low-skilled economy which is holding back growth, George Osborne declared last night.

Speaking at the Bank of England, he suggested that the skills shortage and lack of people attending university put Britain at a disadvantage compared with countries such as the United States and South Korea. He pledged to make greater investment in skills an urgent priority in a future Conservative government.

Giving the Royal Economic Society's annual lecture, Mr Osborne said: "Even though standards in our schools are rising, Britain still suffers from an endemic problem of low skills. That is one of the causes of our persistently weak productivity."

He added: "I have now abolished the artificial cap imposed by the Treasury on the number of students, but I believe that the number going to university in Britain is still too low. If you look around the world at the economies leading the pack on skills and productivity, like South Korea and the US, they are sending far more of their young people to university."

The chancellor used the address to reveal that a future Tory government would pass new laws to ensure that the government always ran a surplus "in normal times".

Under the "good housekeeping" blueprint, the Office for Budget Responsibility would be given a trigger to define when the country was outside of normal times, such as recession. At that point, the government would have to set out a strategy and a timescale for returning public finances to surplus.

Mr Osborne indicated that his wider aim was to surpass countries such as the US, Canada and Germany to become the wealthiest G7 member by GDP per capita in the 2030s. "There is no reason why Britain cannot be the richest major economy in the world," he said. That prosperity would also need to be "widely shared across our country".

"It is within the power of my generation to achieve this, if we have the discipline and the ambition," he said.

RBS shares may be sold at a loss, page 41

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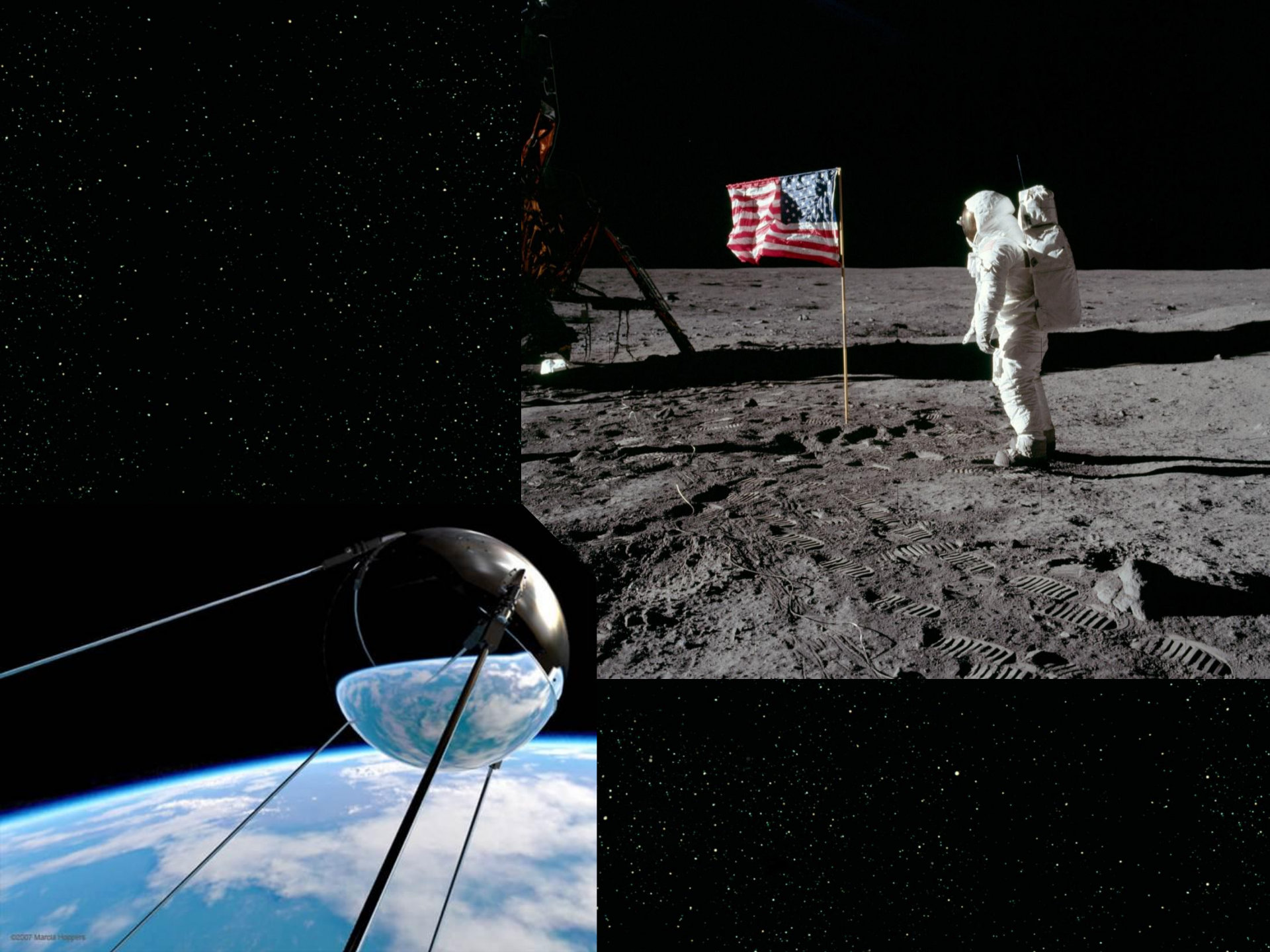
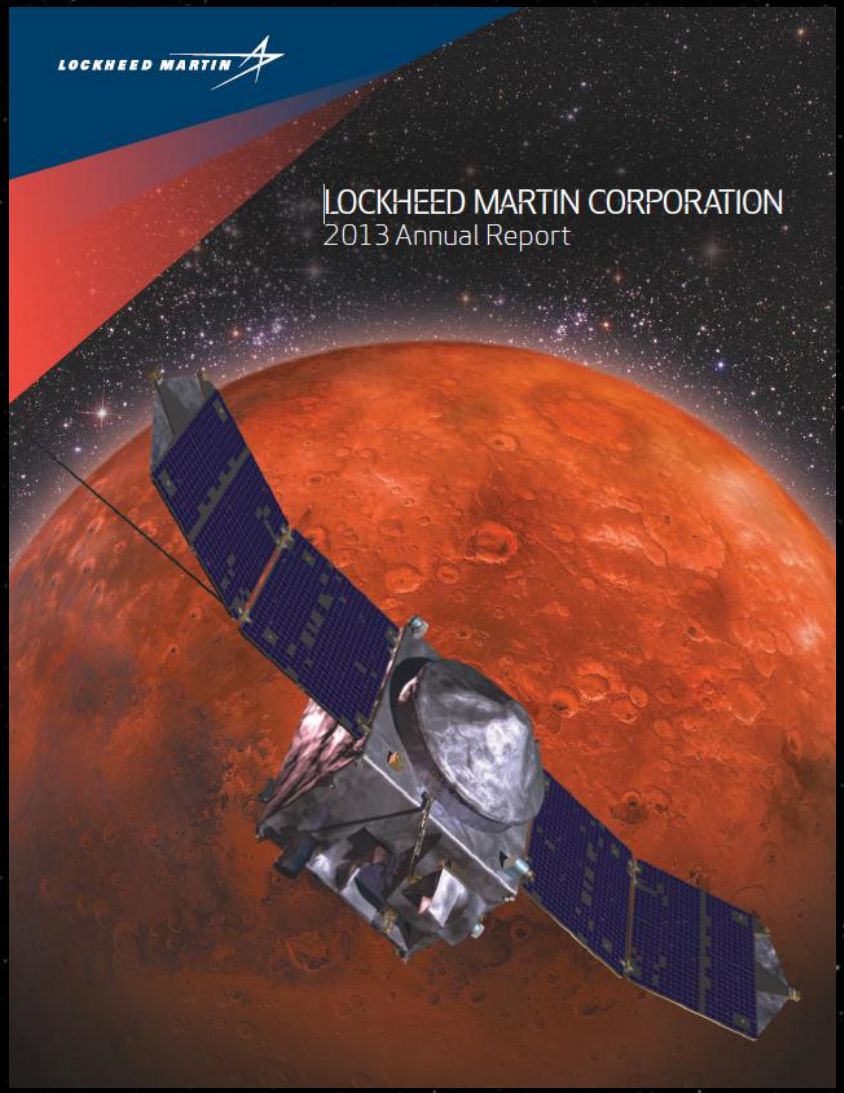
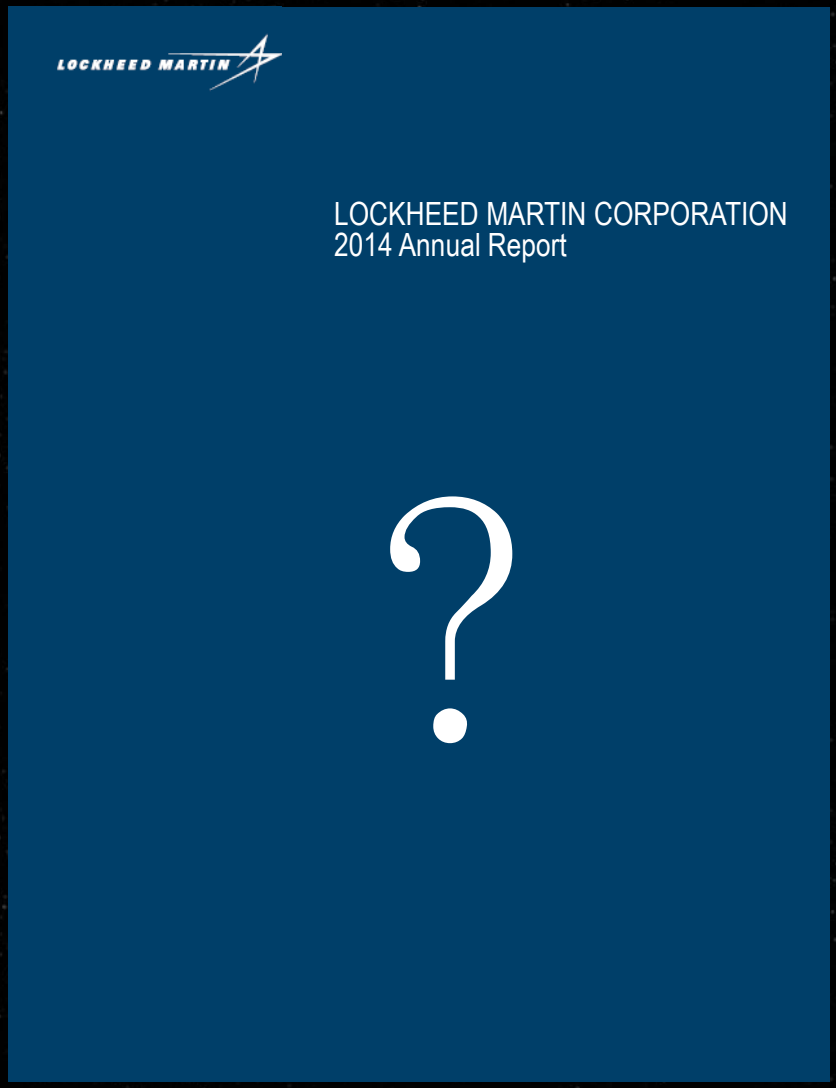

©2007 Marcus Hoppins

Lockheed Martin Annual Report





Working For Lockheed Martin

BusinessWeek

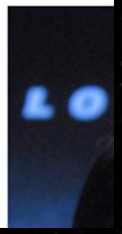
BEST PLACES TO LAUNCH A CAREER

2 Lockheed Martin

Walt Disney was #1!

Manufacturing

2005 Entry Level Hires: 3,983



universum

U.S. TOP100 Ideal Employer

Among students in 2014

2014 U.S. Top 100 Ideal Employer Ranking – Engineering

Employer	Rank
Boeing	1
NASA	2
Google	3
Lockheed Martin Corporation	4
General Electric	5
ExxonMobil	6

Philadelphia

Philadelphia

NEWS RESTAURANTS HEALTH ARTS & EVENTS SHOPPING

Features: Best Places To Work: The 20 Best Companies

BY PHILLYMAG | NOVEMBER 5, 2007

The Career-Starters: Lockheed Martin

Location: Various Locations

Industry: Aerospace and defense

Local employees: 12,000

Revenue: $39.6 billion

In a recent survey, college engineering students their "ideal employer." Little wonder; the comp to the moon is the perfect place to launch a car

Washington Technology

CONTRACTS M&A PEOPLE COMPANIES RANKINGS OPINION

2014 Washington Technology Top 100

COMPANIES BY RANKING

2014	Company
1	Lockheed Martin
2	Northrop Grumman Corp.
3	Raytheon Company

"Lockheed Martin, a world class company "

Former Employee - Intelligence Analyst in San Diego, CA

I worked at Lockheed Martin full-time (more than 3 years)

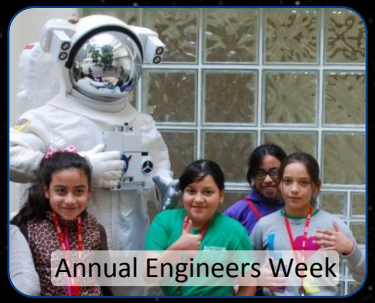
glassdoor

If Only More Companies Were Like Lockheed Martin...The world would be a better place.

Facilities Maintenance (Former Employee), Reston, Virginia – January 18, 2015

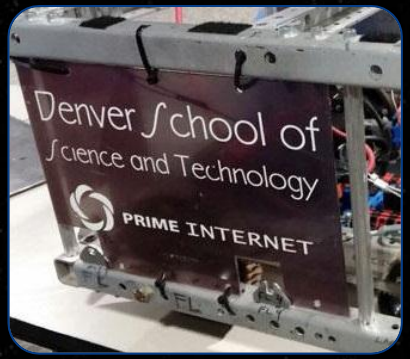
STEM


Young Minds At Work

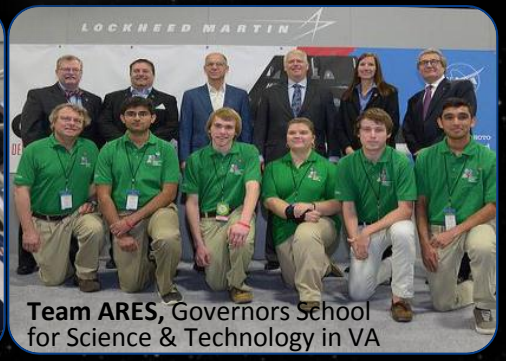

Annual Engineers Week


Denver Museum of Nature & Science


High-School Mentoring



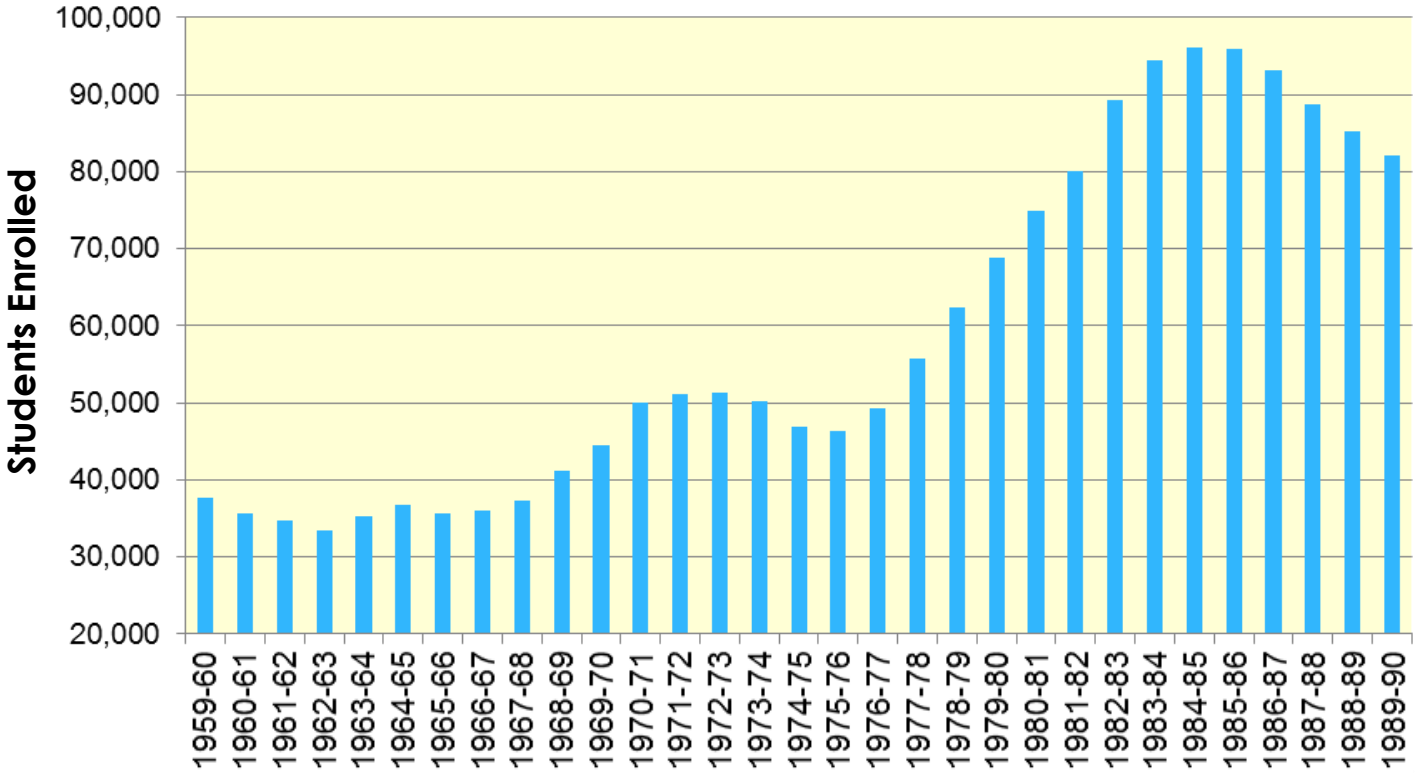

Industry Initiatives for Science and Math Education



Team ARES, Governors School for Science & Technology in VA


Girls Inc. mentors at the Cape

Engineering Graduation Rates (1971-91)



1959–60 [2]	37,679
1960–61	35,698
1961–62	34,735
1962–63	33,458
1963–64	35,226
1964–65	36,795
1965–66	35,615
1966–67	35,954
1967–68	37,368
1968–69	41,248
1969–70	44,479
1970–71	50,046
1971–72	51,164
1972–73	51,265
1973–74	50,286
1974–75	46,852
1975–76	46,331
1976–77	49,283
1977–78	55,654
1978–79	62,375
1979–80	68,893
1980–81	75,000
1981–82	80,005
1982–83	89,270
1983–84	94,444
1984–85	96,105
1985–86	95,953
1986–87	93,074
1987–88	88,706
1988–89	85,225
1989–90	82,110

Economic Impact of Space Programs

"…the **$25 B** in 1958 dollars spent on civilian space R&D during the 1958-1969 period has returned **$52 B** through 1971 – and will continue to produce pay offs through 1987, at which time the total pay off will have been **$181 B**. The discounted rate of return for this investment will have been 33 %."

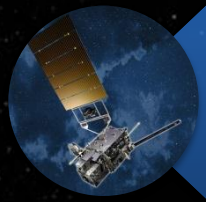
– 1971 study of NASA by MRIGlobal

All Space

- Employment
- Regional economies
- Technology development

Commercial Space-Enabled Industry

- In 2006, generated **$139.3B** and supported **>729,000** jobs in the U.S.



Meteorology

- Cost of natural (weather) disasters in 2010 – 2013: **$70B/** yr
- Impact of routine weather variance on the US economy: **$534B/** yr

Leadership in space is essential for National Security

Nav | Comms | Early Warning | Weather | SSA

LED

Memory foam

Athletic shoes

GPS Example

- Direct economic (U.S.) benefits **>$67.6 B/** yr
- Indirect positive spillover effects (Time & fuel, health and safety)
- **>3.3 M** jobs rely on GPS (GPS manuf. + downstream industries)