



[Visit Suncam.com for more courses](http://Suncam.com)

Continuing Education Course #309
Spacecraft Payloads

1. In order to get a clearer view of space than earth-bound telescopes, higher than natural (e.g. clouds, weather) or manmade (e.g. light) blockages within our atmosphere, the _____ was/were launched in April 1990 on the space shuttle Discovery.
 - a. Hubble Space Telescope
 - b. Van Allen probes
 - c. Tracking and Data Relay Satellite
 - d. Cassini-Huygens spacecraft
2. Because of its orbital type, which spacecraft's payload has been serviced after becoming operational, prolonging its mission life?
 - a. Hubble Space Telescope
 - b. Van Allen probes
 - c. Tracking and Data Relay Satellite
 - d. Cassini-Huygens
3. Which part of the optical electromagnetic spectrum does HST's payload instrumentation capture?
 - a. infrared(IR)
 - b. visible
 - c. ultraviolet(UV)
 - d. all of the above
4. Which of HST's payload instruments also doubles as star sensors for its attitude control subsystem?
 - a. Fine Guidance Sensor
 - b. Advanced Camera for Surveys
 - c. Wide Field Camera 3
 - d. Cosmic Origins Spectrograph
5. To further explore the two radiation belts within the earth's magnetosphere, the _____ was/were launched on August 30, 2012.
 - a. Hubble Space Telescope
 - b. Van Allen probes
 - c. Tracking and Data Relay Satellite
 - d. Cassini-Huygens spacecraft
6. True/False: Ideal for their mission, the two Van Allen probes operate at low earth orbit (LEO), less than 1,000 miles in altitude?
 - a. True
 - b. False

7. Which of Van Allen probe's payload instruments captures energy signatures of charged particles, electrons and protons?

- a. Relativistic Proton Spectrometer
- b. Electric Field and Waves suite
- c. ECT Relativistic Electron Proton Telescope
- d. ECT Helium Oxygen Proton Electron

8. True/False: The concept of operations for the tracking and data relay satellites have not changed over the years, where its goal is to provide continuous communications coverage for its LEO satellite customers.

- a. True
- b. False

9. The _____ payload subsystem consists of three antennae communications suites: single access, multiple access, and space-to-ground.

- a. Hubble Space Telescope's
- b. Van Allen probes'
- c. Tracking and Data Relay Satellite's
- d. Cassini-Huygens spacecraft's

10. Which of TDRS's communications payload subsystem components provides direct communications to the White Sands Complex in New Mexico or the Guam Remote Ground Terminal?

- a. single access communications (space-to-space)
- b. multiple access communications (space-to-space)
- c. space-to-ground link
- d. all of the above

11. Between 1992 and 2018, other than the increased number of satellites, the major TDRS constellation improvement has been that the _____ ocean gap has been filled which previously caused a short communications outage for its LEO customers due to having no TDRS satellites to cover that region.

- a. Indian
- b. Atlantic
- c. Pacific
- d. none of the above

12. The _____ (1997-2017) payload was loaded with 27 science investigations that used 18 different instruments to obtain many unique measurements and images of the Saturn system.

- a. Hubble Space Telescope's
- b. Van Allen probes'
- c. Tracking and Data Relay Satellite's
- d. Cassini-Huygens spacecraft's

13. Which of Cassini's payload instruments produced the famous image on July 19, 2013.

- a. Composite Infrared Spectrometer
- b. Imaging Science Subsystem
- c. Cassini Plasma Spectrometer
- d. Visible and Infrared Mapping Spectrometer

14. Which of Cassini's payload instruments included NASA's Deep Space Network, consisting of massive parabolic antennae on earth?

- a. Ion and Neutral Mass Spectrometer
- b. Visible and Infrared Mapping Spectrometer

- c. Composite Infrared Spectrometer
- d. Radio Science Subsystem

15. Which of the Huygens Probe's payload instruments employed high altitude samplers to measure and identify the chemical composition of Titan's atmosphere, then also its surface composition by vaporizing it just prior to landing?

- a. Gas Chromatograph Mass Spectrometer
- b. Doppler Wind Experiment
- c. Descent Imager/Spectral Radiometer
- d. Aerosol Collector and Pyrolyser

[Purchase this course on Suncam.com](http://Suncam.com)