CALTECH RELIES ON NEXSAN RELIABILITY AND POWER EFFICIENCY TO STORE TWO PETABYTES OF CRITICAL NASA DATA

CUSTOMER OVERVIEW
The California Institute of Technology, “CalTech,” is the operational home for the Spitzer Science Center which performs research and data collection for the NASA Spitzer Space Telescope mission. The Spitzer Space Telescope (formerly SIRTF, the Space Infrared Telescope Facility) was launched into space by a Delta rocket from Cape Canaveral, FL on August 25, 2003. NASA’s Spitzer Space Telescope has resulted in improved measurements of temperature and wind on remote planets and other important scientific discoveries.

With every new Spitzer research activity, CalTech collects 100 TB of new infrared image data. Researchers rely on these retained images to evaluate new information. Reliably storing this data is absolutely business critical for CalTech.

BUSINESS SITUATION
To reliably store the Spitzer images and associated research, CalTech turned to Nexsan storage solutions in 2002. Over the past seven years, CalTech has deployed a combination of Nexsan SATABeast, SATABoy, and now E-Series storage systems to retain, what is today, over 2 PB of Spitzer Space Telescope images on 2,000 drives, 130 controllers and 65 chassis. The storage infrastructure supports the IBM Informix database and Sun ZFS file system to manage extensive infrared image catalogs.

As Spitzer mission data continues to grow, CalTech is increasingly focused on the cost efficiency, reliability and simplified operation of its storage environment. And to drive down the operating expense that comes with over 2 PB of storage, power efficiency is a must. It is for these reasons that CalTech continues to work with its IT solution provider, ESS Direct, to utilize Nexsan E-Series storage systems.

“In choosing a system, we wanted to reduce storage costs, but we also required very reliable technology to reduce IT resource drain,” said Eugean Hacopians, senior systems engineer, CalTech. “We have estimated Nexsan’s hardware reliability to be more than 99.9% over the past seven years.”

NEXSAN DISK-BASED STORAGE SYSTEMS WITH AUTOMAID®
The high-capacity E-Series systems have been designed from the ground up to set a new standard in reliability. They provide CalTech with the industry’s best performance and cost-effectiveness in a scalable disk solution. E-Series systems offer CalTech the exceptional performance and faster response times required for mission critical research applications.
One of the keys to lowering overall operational costs for CalTech is the revolutionary AutoMAID® (Automatic Massive Array of Independent Disks) energy saving technology. AutoMAID enables CalTech to determine the level of access speed and energy savings they desire to meet computing objectives while maintaining a more efficient datacenter environment. Today, CalTech uses AutoMAID on 50% of its Nexsan systems and saves up to 70% in power requirements without impacting performance.

“At Caltech we use Nexsan AutoMAID spin-down capabilities in our archive to manage energy use and reduce storage system wear and tear,” noted Hacopians. “Nexsan offers three levels of disk drive spin-down modes, and we use two of the three to keep the drives available for quick access. This has worked very well for us as we have seen significant energy savings combined with outstanding performance and reliability.”

RESULTS
CalTech continues to see Nexsan as its preferred storage vendor because they receive the performance, reliability and operational efficiency the Spitzer mission requires with an overall lower total cost of ownership. This has equated to significant long term investment protection as compared to other leading vendors.

ABOUT THE SPITZER SPACE TELESCOPE
JPL manages the Spitzer mission for NASA’s Science Mission Directorate, Washington. Science operations are conducted at the Spitzer Science Center at the California Institute of Technology in Pasadena. Caltech manages JPL for NASA. For more information see www.spitzer.caltech.edu.

ABOUT NEXSAN
Nexsan® is a global enterprise storage leader since 1999 delivering the most reliable, cost-effective and highly efficient storage solutions. Nexsan’s solution portfolio empowers enterprises to securely store, protect and manage valuable business data with a broad product line of unified storage, block storage, and secure archiving. www.nexsan.com.

“"At Caltech we use Nexsan AutoMAID spin-down capabilities in our archive to manage energy use and reduce storage system wear and tear.”

ALBERT FULLER
IT MANAGER AT CPUC