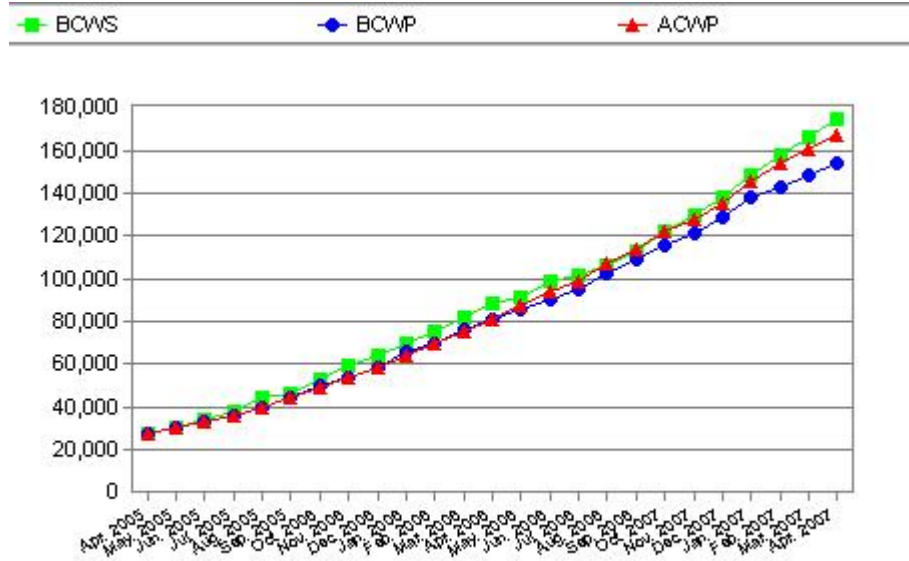


Linac Coherent Light Source, 03-SC-002, SC

MISSION. The purpose of the LCLS Project is to provide laser-like radiation in the x-ray region of the spectrum that is 10 billion times greater in peak brightness than any existing coherent x-ray light source. This advance in brightness is similar to that of a synchrotron over a 1960's laboratory x-ray tube. Synchrotrons revolutionized science across disciplines ranging from atomic physics to structural biology. Advances from the LCLS are expected to be equally dramatic. The characteristics of the light from the LCLS will open new realms of scientific applications in the chemical, material, and biological sciences including fundamental studies of the interaction of intense x-ray pulses with simple atomic systems, structural studies on single nanoscale particles and biomolecules, ultrafast dynamics in chemistry and solid-state physics, studies of nanoscale structure and dynamics in condensed matter, and use of the LCLS to create plasmas.

DESCRIPTION. The LCLS project leverages capital investments in the existing SLAC linear accelerator (linac) as well as technologies developed for linear colliders and for the production of intense electron beams with radio-frequency photocathode guns. The LCLS requires an injector to be built at Sector 20 of the 30-sector SLAC linac to create the electron beam required for the x-ray Free Electron Laser. The last one-third of the linac will be modified and most of the linac and its infrastructure will remain unchanged. The existing components in the Final Focus Test Beam tunnel will be removed and replaced by a new undulator and associated equipment. Two new experimental buildings, the Near Hall and the Far Hall, will be constructed and connected by the beam line tunnel. A Central Laboratory Office Building will be constructed to provide laboratory and office space for LCLS users and serve as a center of excellence for basic research in x-ray physics and ultrafast science.



Cum. Earned Value (thru Apr. FY07; \$K)

BCWS	BCWP	ACWP	CV	SV
\$175,067	\$154,552	\$167,093	-\$12,541	-\$20,515

Cum.		Current Month		Prior Month	
CPI	SPI	CPI	SPI	CPI	SPI
0.92	0.88	0.99	0.72	0.74	0.61

CRITICAL DECISION MILESTONES

Project Start Date	Project Completion Date
06/13/2001	03/31/2009

FUNDING PROFILE

Fiscal Year	TPC (\$K)	TEC (\$K)
2005	379,000	315,000

	Name	Planned Date	Actual Date	Approval
1.	CD - 0	06/30/2001	06/13/2001	
2.	CD - 1	10/30/2002	10/16/2002	
3.	CD - 2	05/31/2003	07/01/2003	
4.	CD - 2	10/31/2004	04/11/2005	
5.	CD - 3	12/31/2004	12/10/2004	
6.	CD - 3	02/28/2006	03/10/2006	
7.	CD - 4	03/31/2009		

Year	Funding Plan (\$K)	Appropriations (\$K)
2002	1,500	1,500
2003	5,925	5,925
2004	9,456	9,456
2005	53,674	53,674
2006	89,044	
2007	121,901	
2008	66,000	
2009	31,500	

PROJECT CONTACTS

Acquisition Executive		
Program Manager	Tom Brown	(301) 903-6827
DOE Project Manager	Hanley Lee	(650) 926-3207

PROJECT ATTACHMENTS