UC San Diego

UCSD Jacobs School of Engineering

Center for
Energy Research

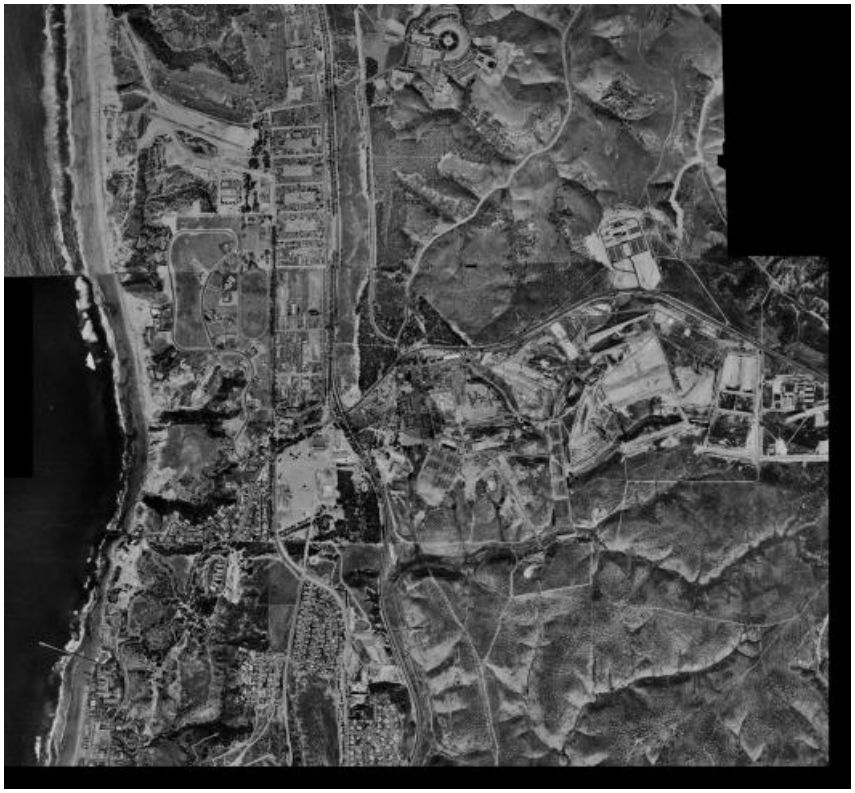
Welcome to San Diego

US-Japan Reactor workshop is a long-standing activity

1st 1989 (JAERI,May29-39):ARIES-I, SSTR, ---
2nd 1990 (UCLA,Oct.15-17):ARIES-I, SSTR, CFAR
3rd 1992 (JAERI,Mar.9-11): ARIES-II/IV,SSTR-2, ST(TARTRs)
4th 1993 (UCLA,Sep.17) : in conjunction with IAEA-TCM
5th 1995 (Kyoto U.,Mar.13-16): STARLITE,SEAFP, FFHR, Pulsar, IDLT

?th 1999 (Kyoto U.,Mar.24-26): CREST, ARIES-ST, DREAM,FFHR
?th 2000 (UCSD,Mar.16-17): ARIES-AT, A-SSTR2,FFHR,CREST,ESE
?th 2001 (U. Tokyo,ARIES-AT, A-SSTR2,CREST,FFHR,ESE
?th 2002 (UCSD,Apr.6-7): FFHR, Laser, ESE
?th 2003 (UCSD,Oct.9-11): ARIES-IFE, ARIES-CH,FFHR, ESE
?th 2005 (JAERI/UT,Jan.11-13): FFHR, ARIES-CH, VECTOR
?th 2006 (UCSD, Jan.24-25): FFHR, ARIES-CS, EUPPS, VECTOR,…

UCSD is the Youngest Top 10 Universities in the US



La Jolla Campus in 1964

La Jolla Campus in 2002

Jacobs School of Engineering

Faculty	**170**
Undergraduate Student	**4,270**
Gradate Students	**1,165**
Research Expenditure (2004)*	**$138M**

*** 3rd largest among universities in the US.**

	Enrolled	Application
Freshmen	**771**	**6,627**
New graduate student	**319**	**4,629**

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Fusion Activities in Center for Energy Research

Faculty and Senior Researchers	**13**
Researchers & Engineers	**21**
Students	**19**
Research Expenditure (2004)	**$ 6M**

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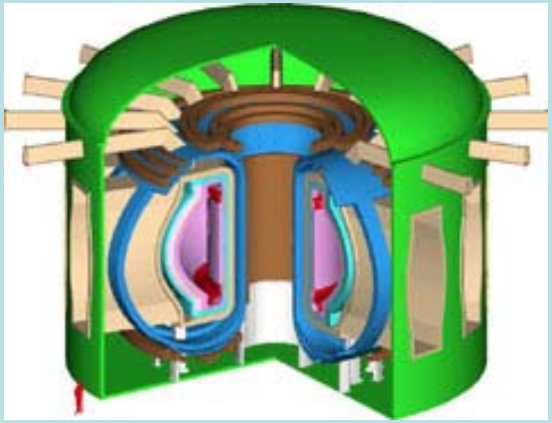
Fusion Activities in Center for Energy Research

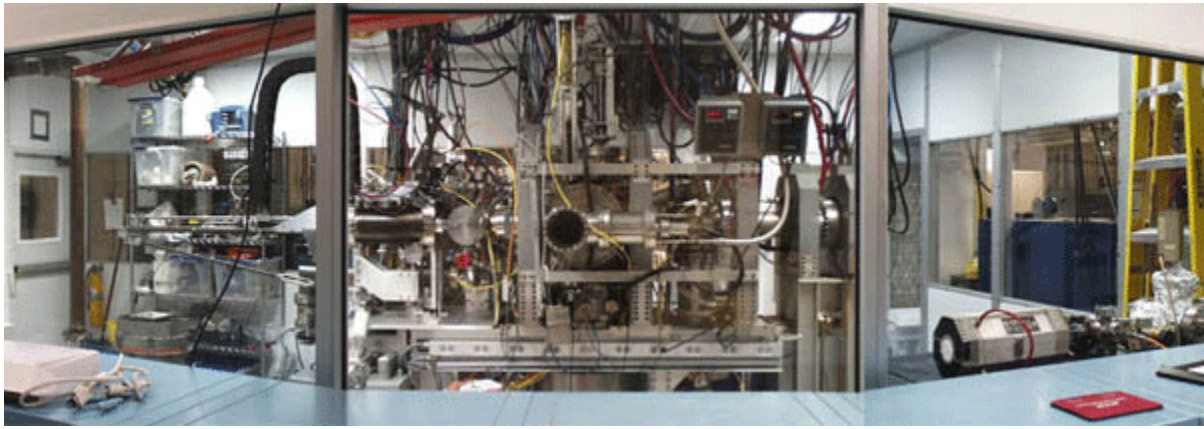
National Fusion Power Plant Studies Program, ARIES



Edge Diagnostics and Turbulence on Major Confinement Experiments

DIII-D
NSTX
Textor

PISCES-B Facility



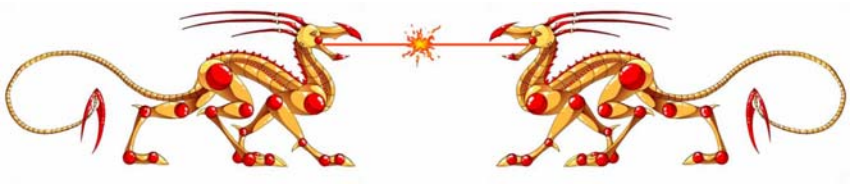
Plasma-Material Interaction:
Steady-State plasma source
Density ~ 2.5 x 10^{19} m^{-3}
Temperature ~ 5-100 eV

Fully-qualified Safety enclosure for Be testing

UC San Diego Laser Plasma and Laser-Matter Interactions Laboratory

Facilities:

- Nd:YAG lasers with harmonics
- Multigas excimer laser
- 50-cm visible spectrometer, 2-ns gated camera, PMT
- EUV spectrometer, camera, energy monitor



Sub-ablation threshold research:

- High cycle fatigue of metals
- Final optic damage
- Chamber armor thermomechanics

Laser plasma research:

- Ablation plume dynamics, B-fields
- EUV/XUV emissions
- Cluster formation