

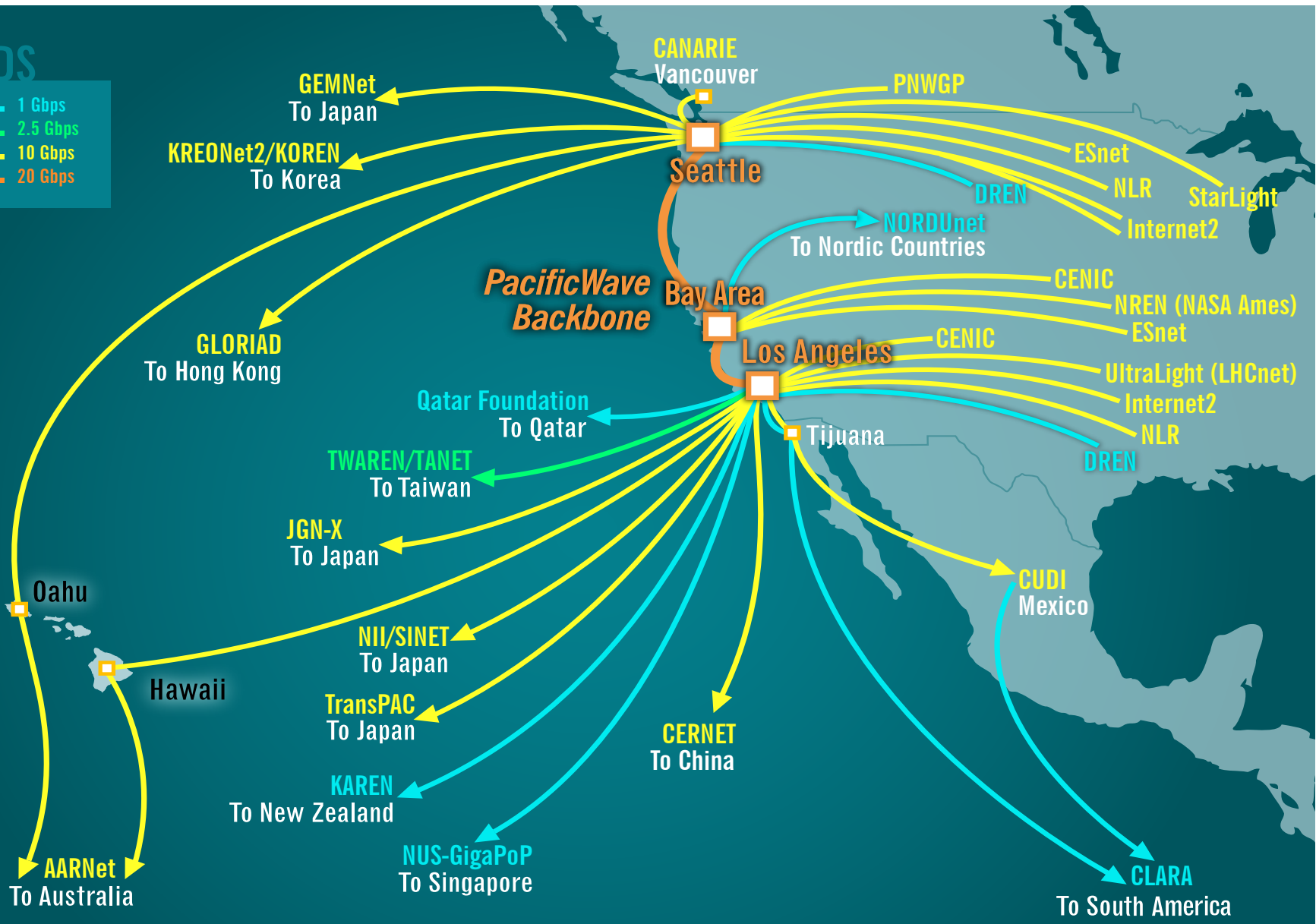
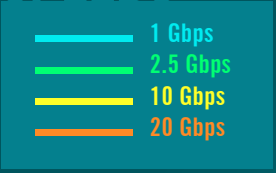
TransLight / Pacific Wave

Primary Objectives

- Provide full domestic support for AARNET's two 10Gbps circuits from Australia to Hawaii (including Mauna Kea) to the West Coast
- Support Pacific Wave, the open distributed exchange that interconnects all international R&E circuits that terminate at U.S. West Coast locations
- Coordinate with partners to ensure network availability and availability of new services as needed and funded, including standardized network monitoring infrastructure and dynamic circuit services
- Install and maintain new international links, including emerging links from Pacific Islands, and bandwidth upgrades to existing links as funding and feasibility permit

David Lassner <david@hawaii.edu>

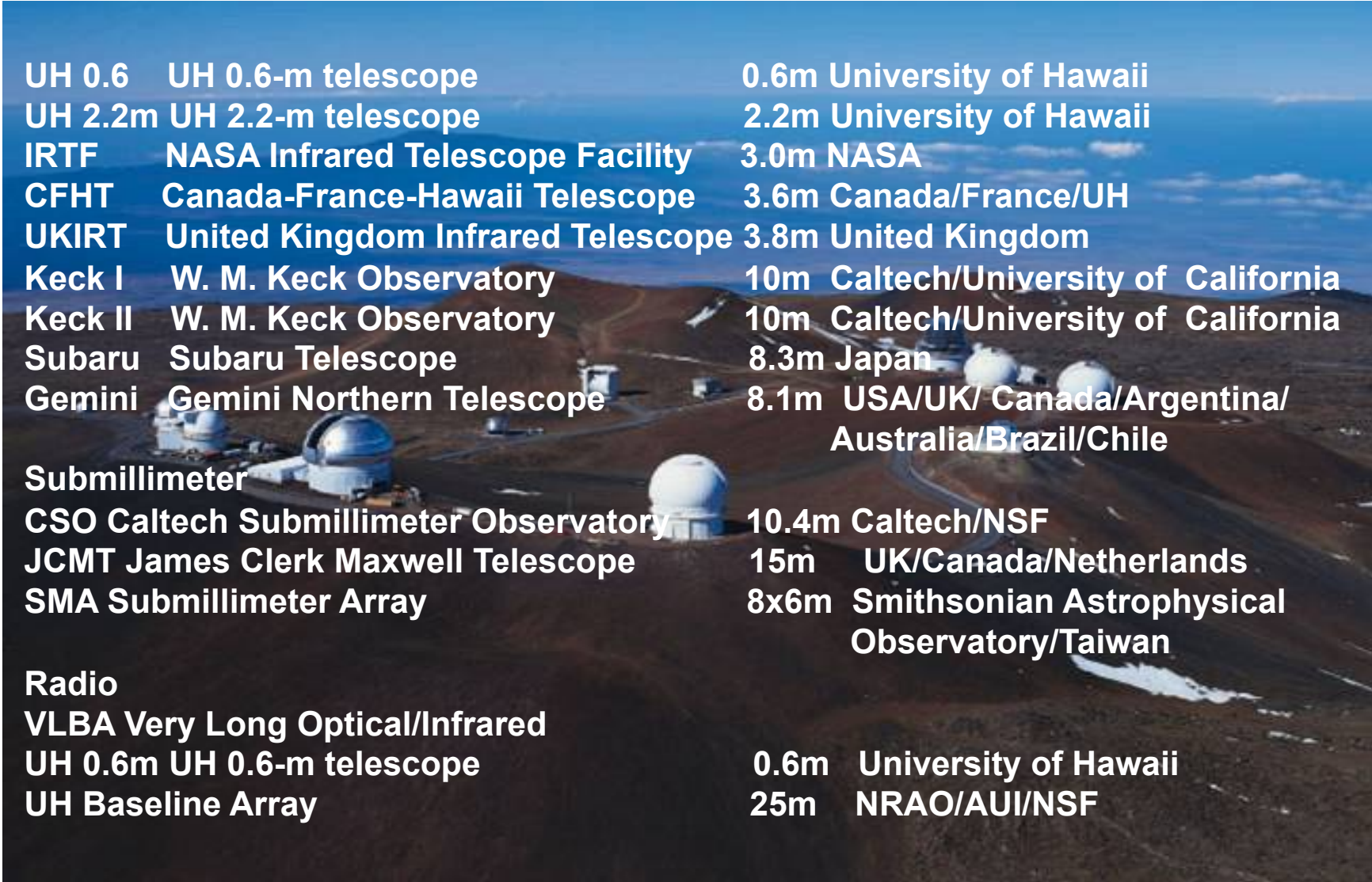
SPEEDS



TRANS LIGHT PACIFIC WAVE: NETWORK CONNECTIONS

JULY 2012

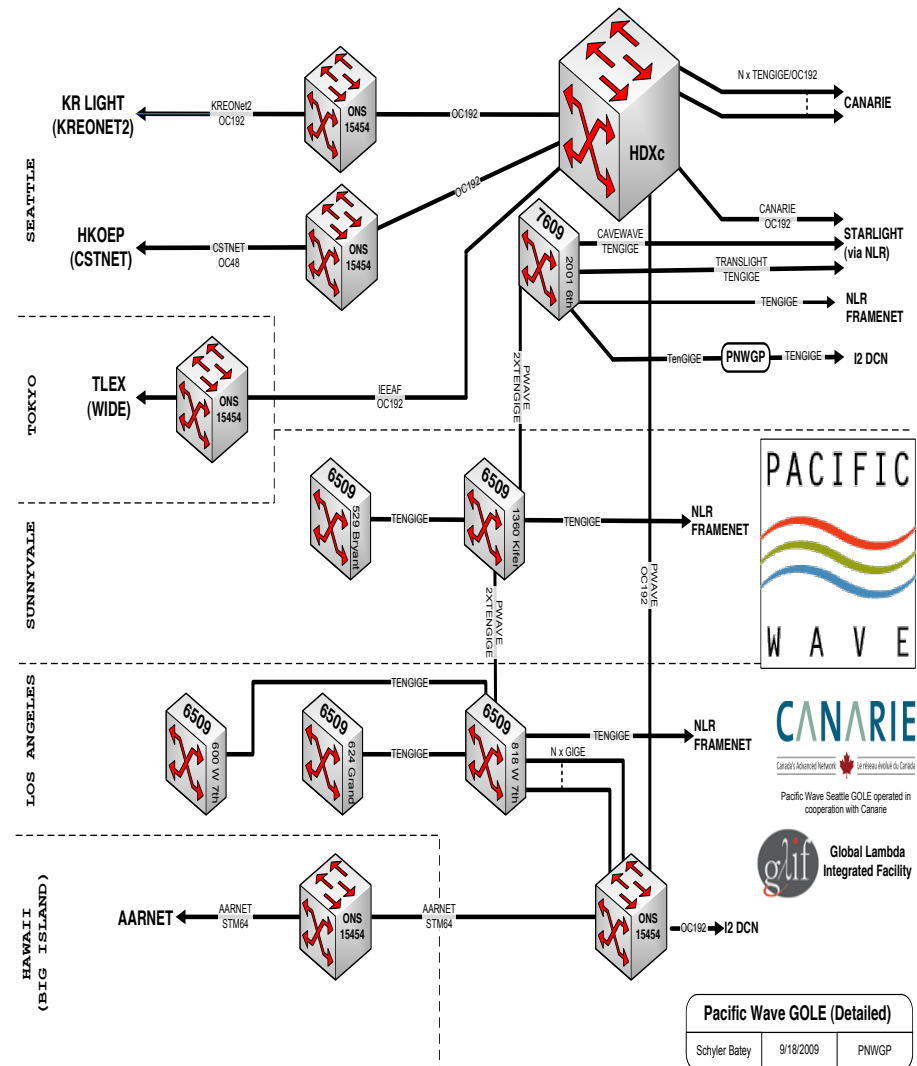
Mauna Kea Observatories



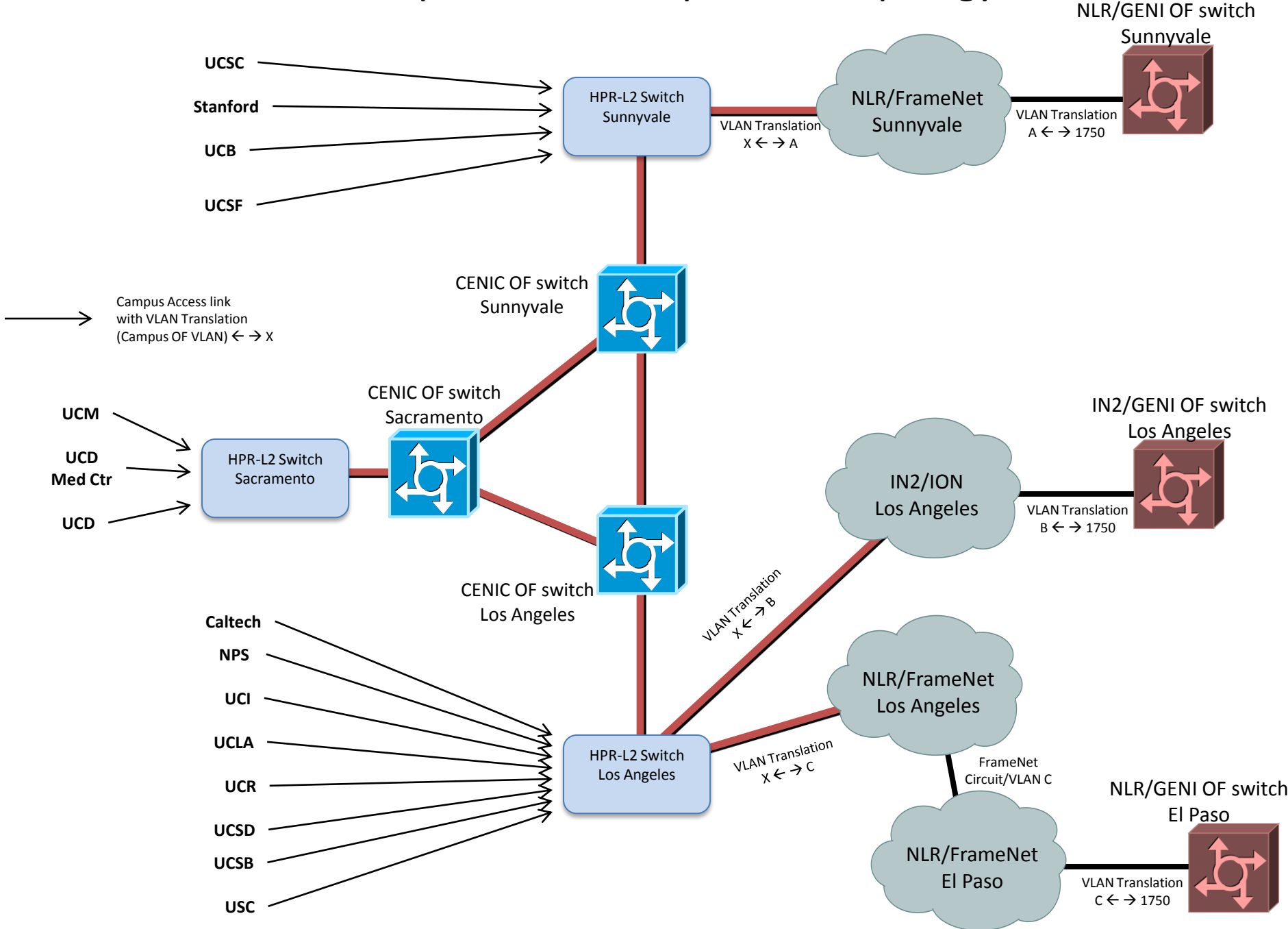
UH 0.6	UH 0.6-m telescope	0.6m	University of Hawaii
UH 2.2m	UH 2.2-m telescope	2.2m	University of Hawaii
IRTF	NASA Infrared Telescope Facility	3.0m	NASA
CFHT	Canada-France-Hawaii Telescope	3.6m	Canada/France/UH
UKIRT	United Kingdom Infrared Telescope	3.8m	United Kingdom
Keck I	W. M. Keck Observatory	10m	Caltech/University of California
Keck II	W. M. Keck Observatory	10m	Caltech/University of California
Subaru	Subaru Telescope	8.3m	Japan
Gemini	Gemini Northern Telescope	8.1m	USA/UK/ Canada/Argentina/ Australia/Brazil/Chile
Submillimeter			
CSO	Caltech Submillimeter Observatory	10.4m	Caltech/NSF
JCMT	James Clerk Maxwell Telescope	15m	UK/Canada/Netherlands
SMA	Submillimeter Array	8x6m	Smithsonian Astrophysical Observatory/Taiwan
Radio			
VLBA	Very Long Optical/Infrared		
UH 0.6m	UH 0.6-m telescope	0.6m	University of Hawaii
UH Baseline Array		25m	NRAO/AUI/NSF

Pacific Wave Overview

- Pacific Wave is a joint project between CENIC and the Pacific Northwest Gigapop (PNWGP)
- PWave pioneered a novel architecture, an open distributed exchange
- Participants at any PWave connection point (LA, Sunnyvale, Seattle) can interconnect in multiple transparent ways of their own choosing using
- PWave sites support: layer 2 interconnect (private VLANs); layer 3 peering over layer 2 infrastructure (VLANs); layer 2 peering over a layer 1.5 interconnect (SONET/SDH, Internet2/DCN)



Proposed CENIC Openflow Topology



Pacific R&E Network Anyone?

- The Pacific is one of the last regions of the world with no initiative to develop a regional Research & Education Network
- Historically, infrastructure limitations have made serious networking infeasible
- New network infrastructure being implemented over the next two years will provide the Pacific with the first real opportunity to expand connectivity and join the global R&E Network community

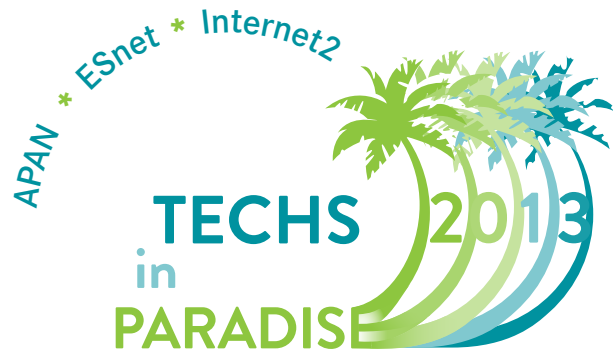


How Can TL/PW Help?

- Let us know if you need help making connections (physical, virtual or human) across TL/PW
 - Example: Slice Around the World
- Let us know if you have ideas about what open exchanges should be doing to support global collaborations – including nothing
- Let us know of GENI-related activities traversing TL/PW:-)

TL/PW Partners

- PI : David Lassner, University of Hawaii
- Co-PIs : Ron Johnson & Ed Lazowska, PNWGP & UW
Jim Dolgonas, CENIC
- AARNet & many international network collaborators
- People who do the real work: Alan Whinery, Celeste Anderson, Brian Court, Schyler Batey, Jan Eveleth, Dave Reese, Bruce Morgan (AARNet)



Techs in Paradise -- TIP2013
13-18 January 2013
Honolulu, Hawaii USA

CFP at

<http://events.internet2.edu/2013/tip/focus-areas.cfm>