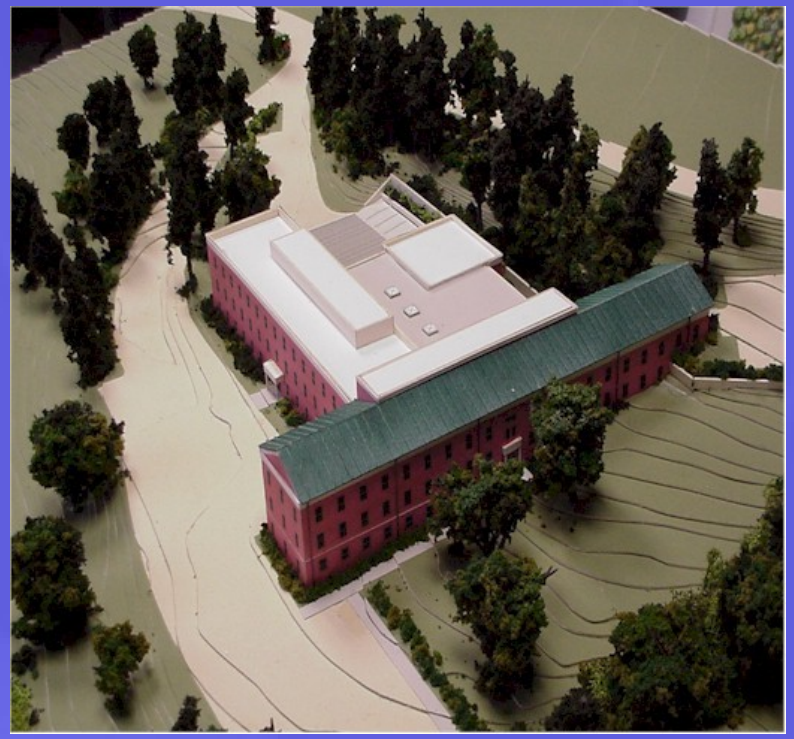
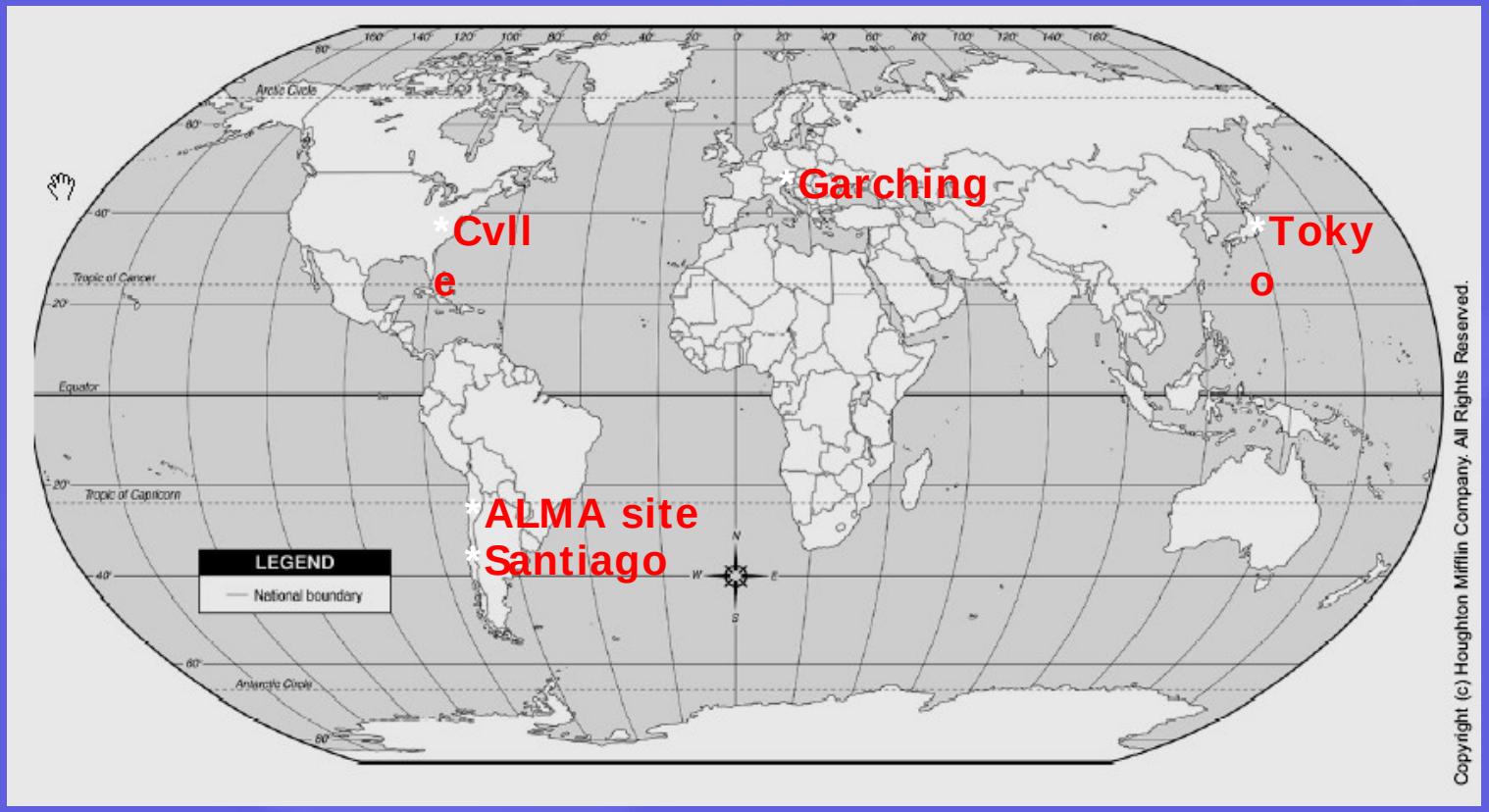
The North American ALMA Science Center



Interim Director, Paul A. van den Bout

ALMA is a world array



What's where in ALMA

The array is on a 16,500 ft elevation site, on the Array Operations Site (AOS).

How can I find the ALMA Site?

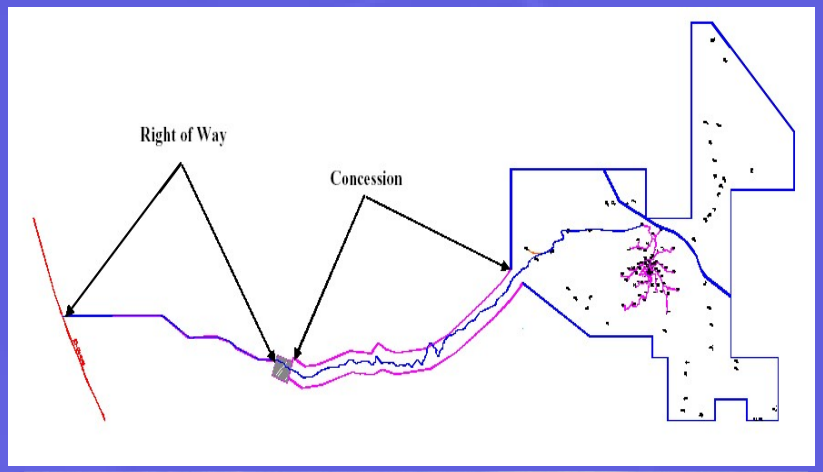
Paranal

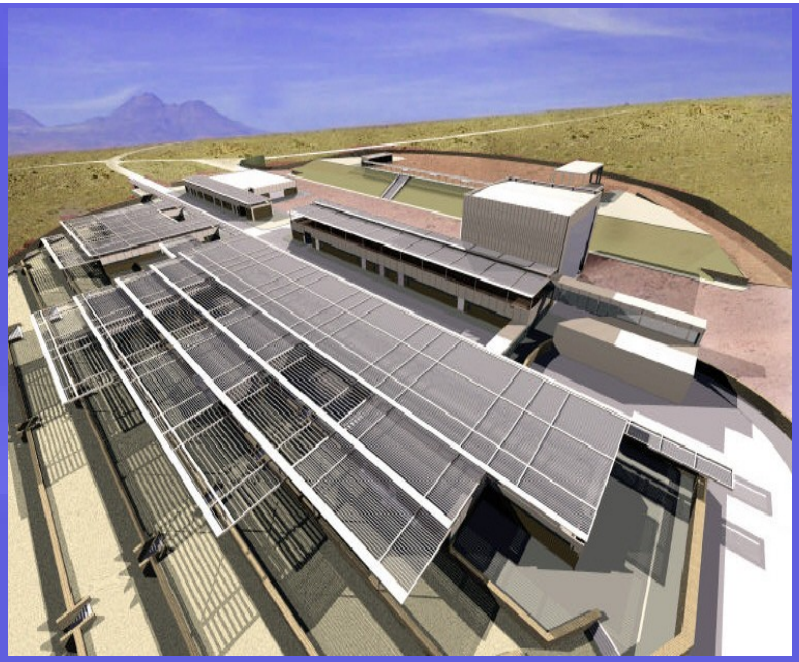
La Serena

Santiago

Where would I work?

Most staff are to work at the operations support facility ("OSF") at an elevation of ~9000 ft, on a new road connecting the high site with the San Pedro/ Tocanao highway. Astronomers will not normally visit the OSF.





The OSF is about a 45 minute drive from metropolitan San Pedro.

Joint ALMA Observatory

The Joint ALMA Observatory (JAO) headquarters will be in Santiago.

The JAO headquarters is currently in rented space in a new office tower in central Los Condes.

Staff will live in Santiago and work at the OSF on the “turno system”.

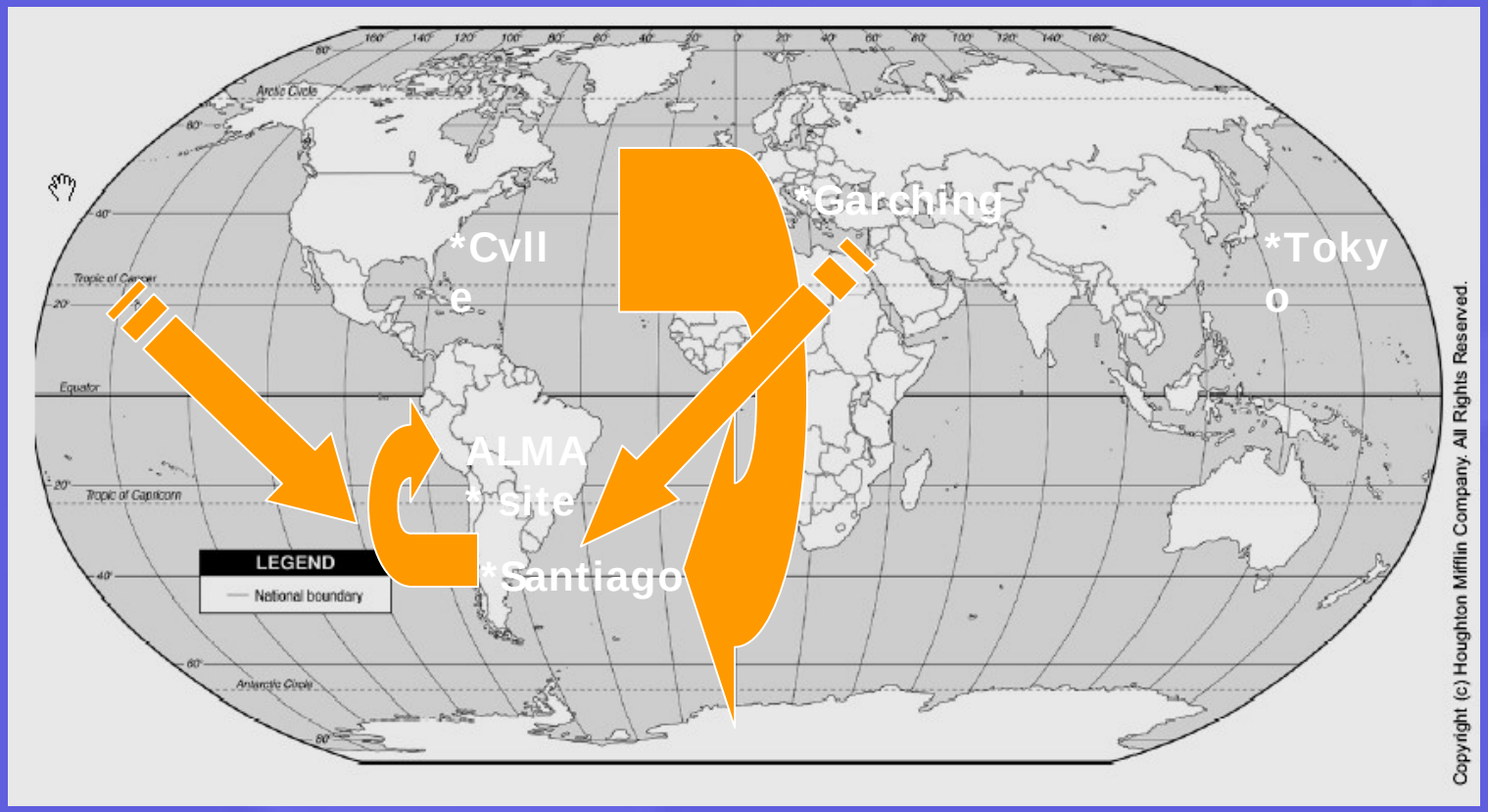
ALMA Regional Centers

The JAO will have user interfaces known as "ARCs" in each of the three partner regions: North America, Europe, & Japan.

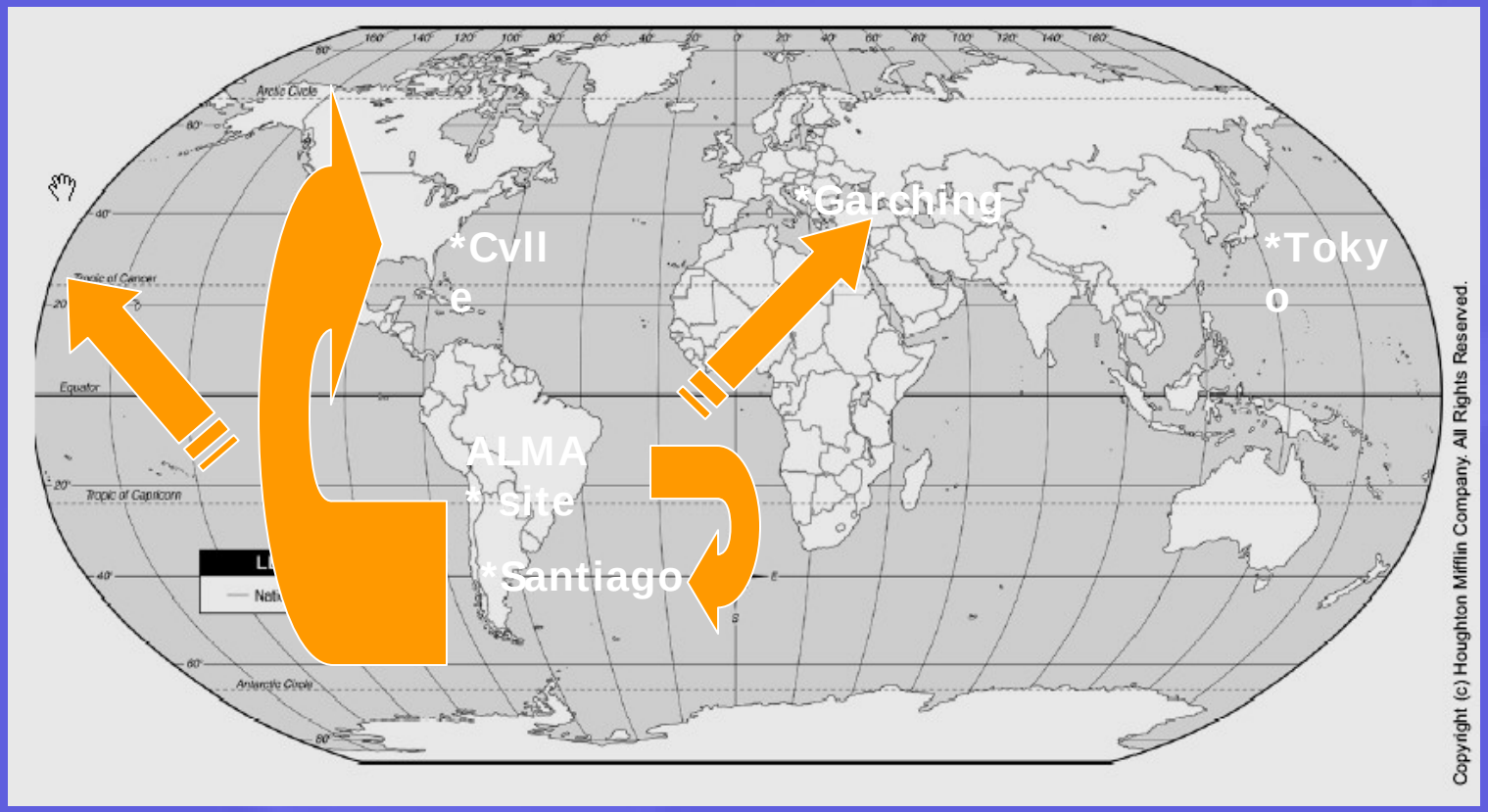
The ARCs will conduct activities needed to receive and process proposals from observers and return data to users, all archive based and organized.

The ARC archives are mirror archives of the central archive in Santiago; they all contain the same data, all the data.

Proposals/ Observing Files are sent from ARCs to JAO



Data Flow: array to user



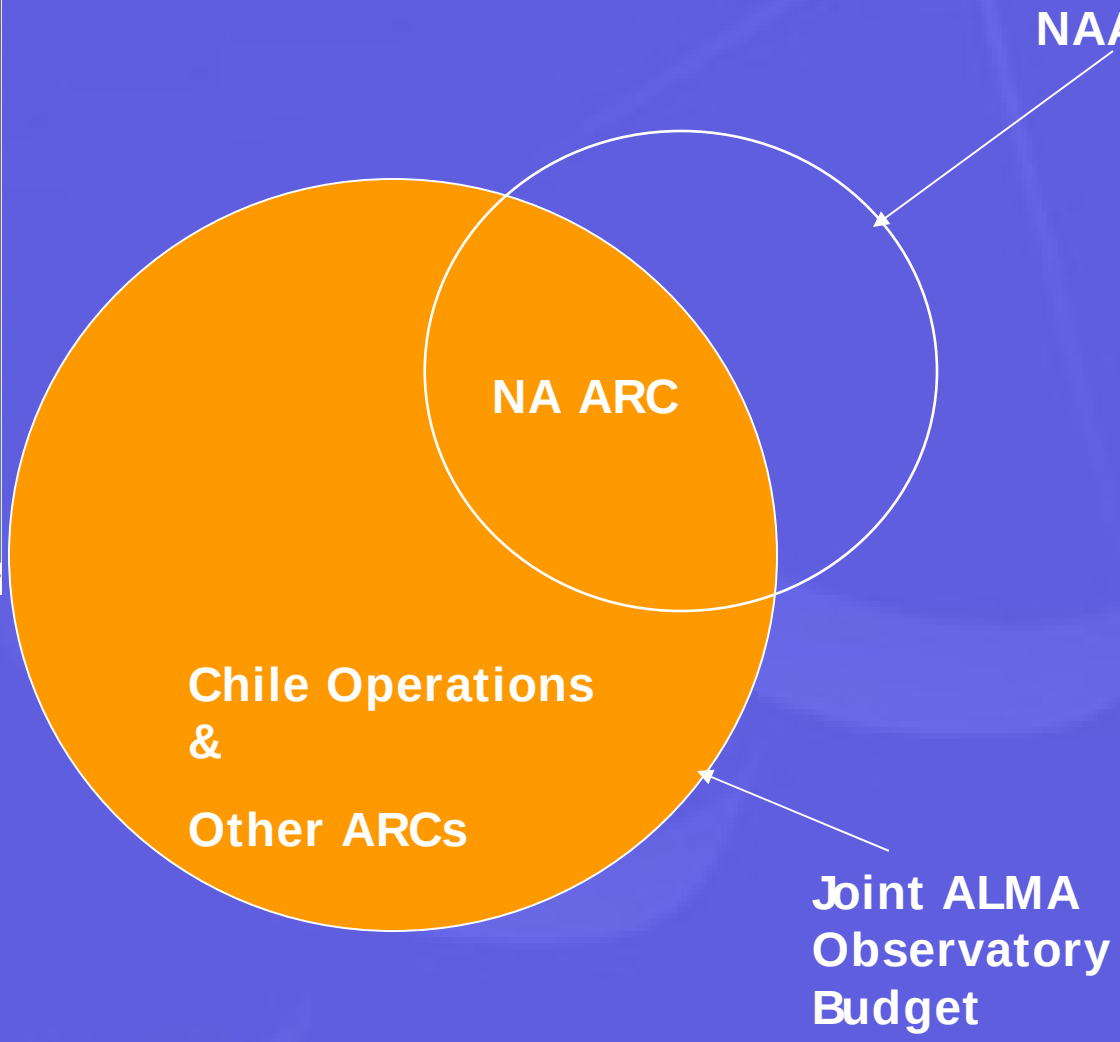
Data Flow is LARGE

During full operation, the estimated flow into archive ~ 100 Tbytes per year. (*Total* flow to date into the HST archive is 20 Tbytes).

Small dataset might be ~ 50 Gbytes; a large dataset might be ~ 1 Tbyte.

Dataset includes proposal, u- v data, a reference image with pipeline processing history, calibration data, . . .

Beyond the ARCs



NA ARC

Head & Admin. Asst.;

Astronomers – proposal functions;

Astronomers – archive functions;

Engineer/ tech – hardware repair;

Programmers – software maint.;

$5,000,000 – development;

M&S, travel, capital; overhead.

NAASC Beyond the NA ARC

Data analysis grants program;
ALMA Fellows;
Pre- doctoral & co- op students;
Astronomers – archive functions;
EPO program;
Systems Admin.;
Business & library services;
Office of Chile Affairs.

European ARC ++

Narrowly defined core functions will be done at ESO – Garching.

Much, especially "hand- holding", will be outsourced by ESO to national facilities, for example, Jodrell Bank, Dwingeloo, IRAM, Onsala, . . . , *to be paid for by national budgets*.

Japanese ARC

The Japanese ARC will almost certainly be part of the National Astronomical Observatory of Japan and located in Mitaka on the NAOJ grounds.

Canada

Contributing 7% of North American share of the JAO budget;

This includes 7% of the NA ARC, but no contribution to NAASC beyond the ARC;

Could choose to contribute, in part, with personnel, to Chile and to the NA ARC.

Could reasonably expect to get 7% of the Development work.

Key NAASC Science Tasks For First Science (2007)

Inform community of science capabilities, observing modes, available resources, via meetings, workshops, webpages; solicit feedback

Proposal preparation/ user support (proposal call mid- 2006)

Proposal review/ scheduling

Testing data reduction scripts/ cookbooks

Develop calibrator & spectral line databases

Post- observation user support: help users with offline data reduction; re- reduce data; submit bugs

Help software developers develop/ test advanced data processing procedures/ tools.

ALMA
ATACAMA LARGE MILLIMETER ARRAY