

San Jacinto: A Proposed Deep Lab with Vertical Access (1983)

**In the early 1980s interest grew in a “National
Underground Science Laboratory”**

- **Grand Unification (SU(5)) and Proton Decay were the driving forces**
 - **IMB, SUDAN, HPW, Kamioka**
- **Overburden of about 4000 ft of dense rock was goal**
 - **Power of the water Cherenkov technique not then fully understood**
- **1982 Los Alamos meeting**

- **Sharp steep escarpments exist in California**
 - ◆ **Implies vertical access with relatively short tunnels**
 - San Jacinto
 - Eastern Sierra
 - White Mountains
 - ◆ **Possible to have of a “low cost”, deep facility**
 - ◆ **Report prepared by Lindvall, Richter & Associates:**
 - **Selected San Jacinto**
 - Many HEP institutions nearby
 - Satisfied site selection requirements
 - **Vertical access for personnel and equipment**
 - \$1400/ft (1983 dollars) with TBM (Turn-key ready)
 - 6000 ft overburden possible (3 mile tunnel)
 - 2000 ft overburden at about 1 mile.
 - **“Big rooms” costed**
 - 12 by 14 meters by 40 meters long ~\$3M (1983)
 - **A joke? (1999 INPAC email) ... perhaps not in the 1980s:**
 - 1934 water tunnel
 - ↳ 13 miles (21 km)
 - ↳ 6.5 years
 - ↳ known to LR&A
 - 1983 proposed NUSA tunnel
 - modern tunneling techniques (TBMs)
 - 3 miles (4.8 km)
 - 9 to 12 months

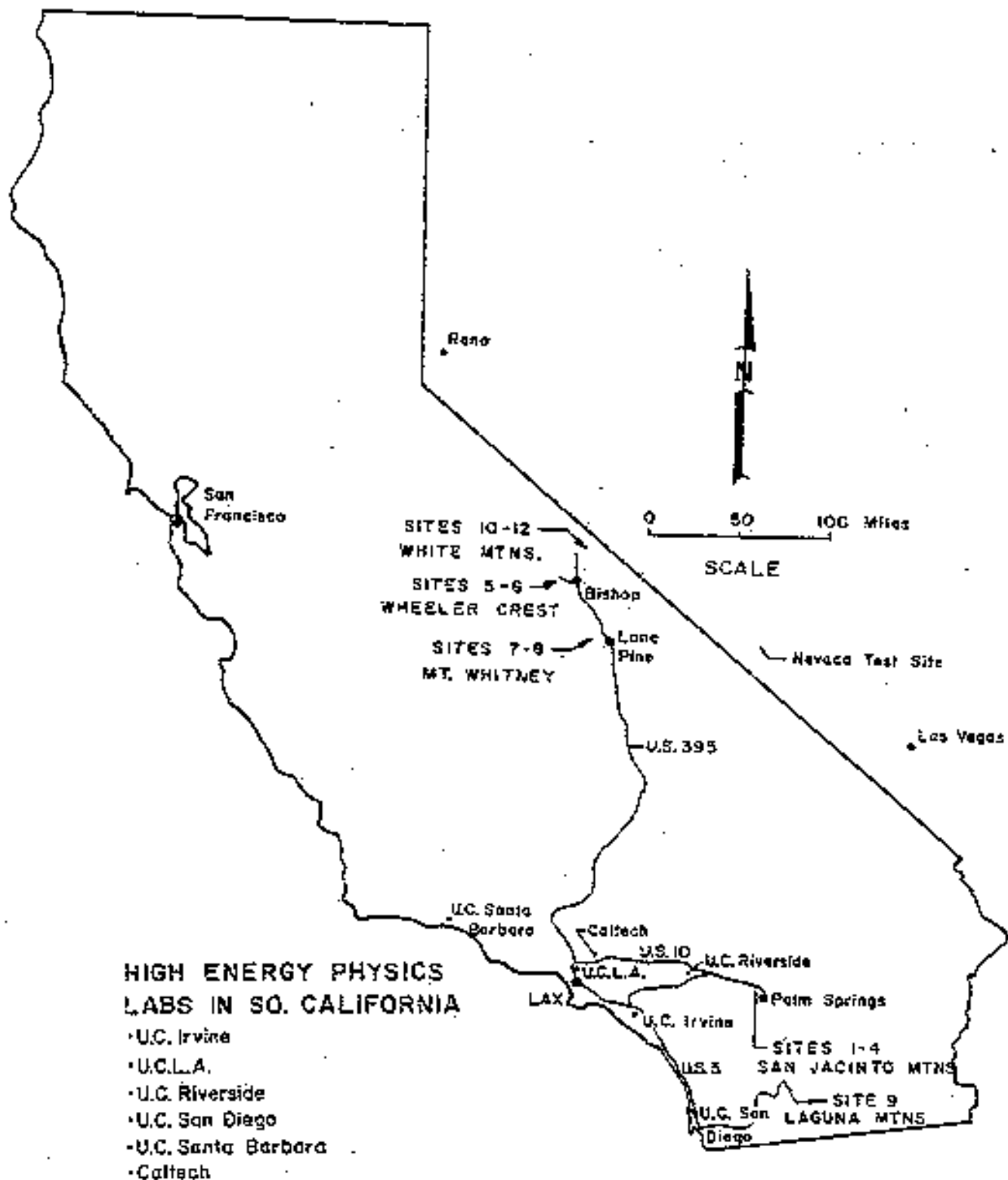
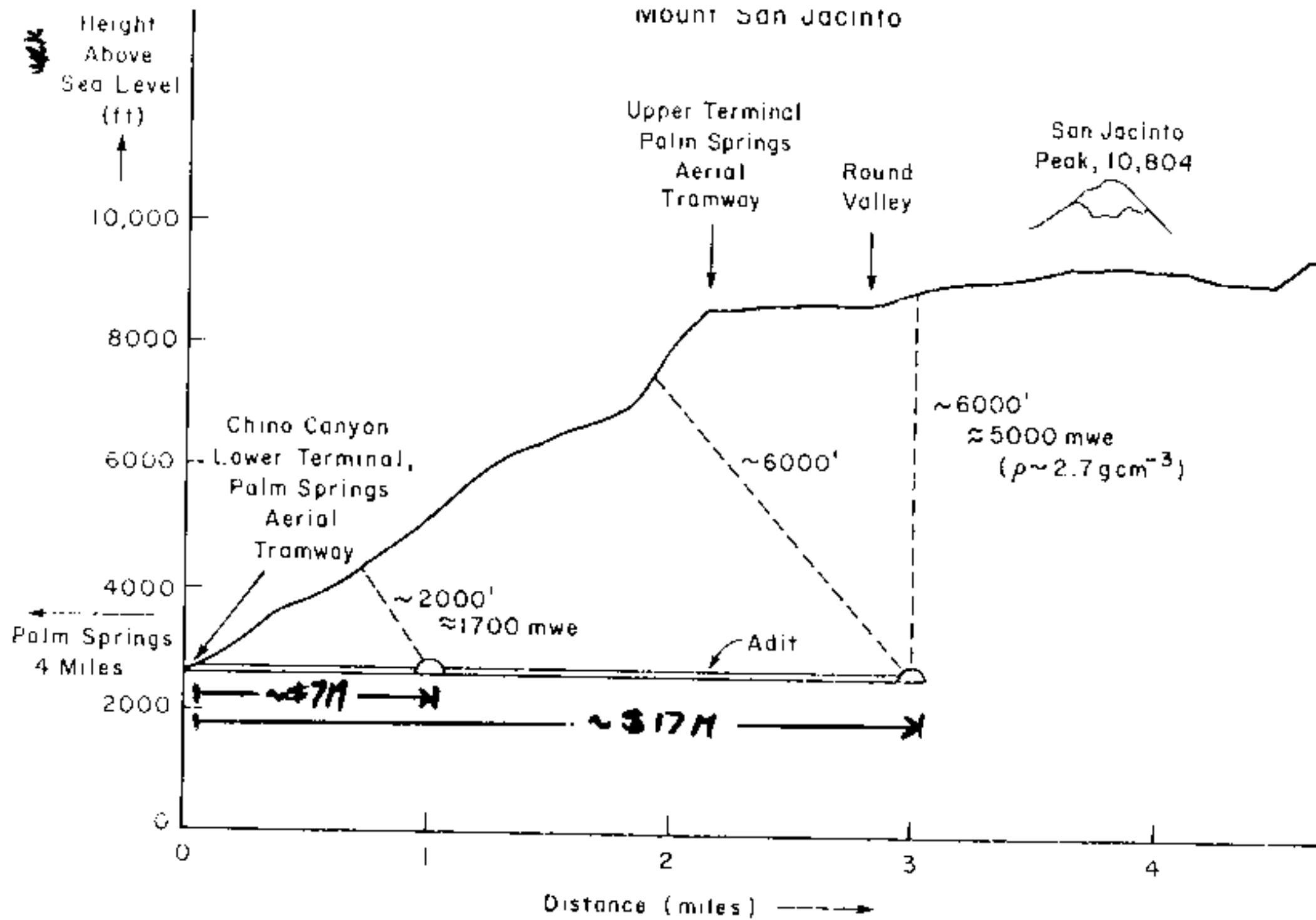


Figure 2. Location map of 12 NUSL sites in California and the Nevada Test Site.

MOUNT SAN JACINTO





This worker varied standard approach to jackscrew techniques to get the job done.



Ever-present seepage was only one obstacle to completing San Jacinto Tunnel.



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Tunnel Boring Machine (TBM) used to excavate the ESF.

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