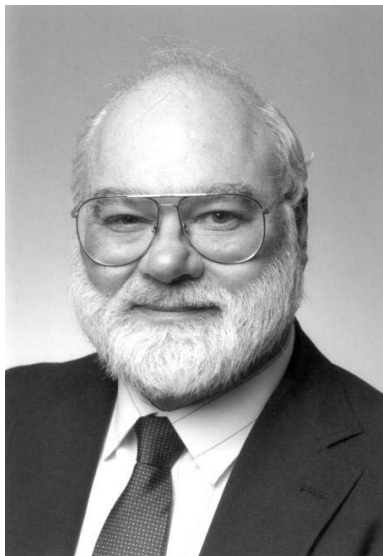


# Charles W. Peck 1934–2016



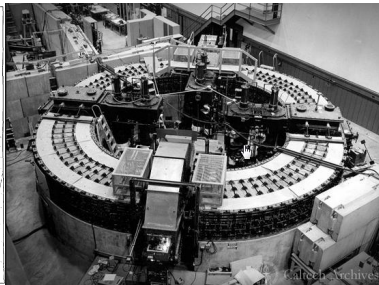
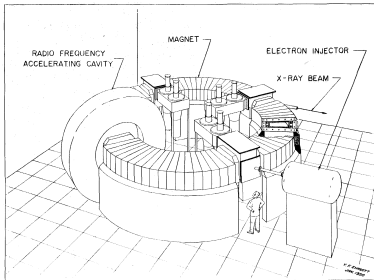
Charles W. Peck

*Credit: Courtesy of the Caltech Archives*

Educator  
Scientist  
Accelerator physicist  
Instrument builder  
Administrator

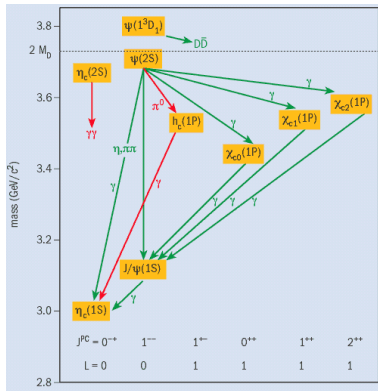
# Hero of the Caltech Synchrotron

- ▶ Many prominent physicists received their Ph.D. at the **Caltech Synchrotron** in the 1960's
- ▶ I believe they all heartily acknowledge fellow graduate student **Charlie** as the one who kept it working and improved it
- ▶ at the probable sacrifice of taking longer to graduate himself. . .

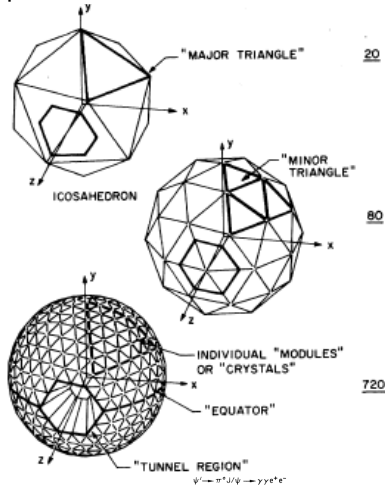


# Crystal Ball Inventor

Important to measure photons to study charmonium spectroscopy

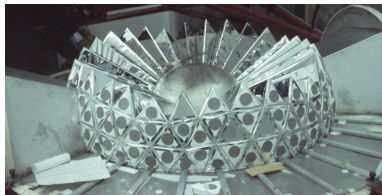


Brainstorming sessions with Elliott Bloom lead to the Crystal Ball concept for a NaI(Tl) photon detector

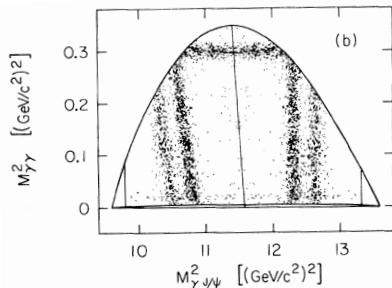


# Crystal Ball Inventor

The real Crystal Ball – stacking the crystals at Harshaw



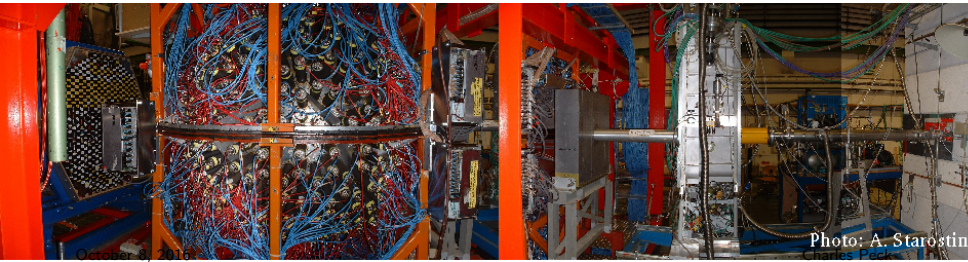
Works like a charm(onium?) –  
The  $\gamma\gamma J/\psi$  Dalitz plot



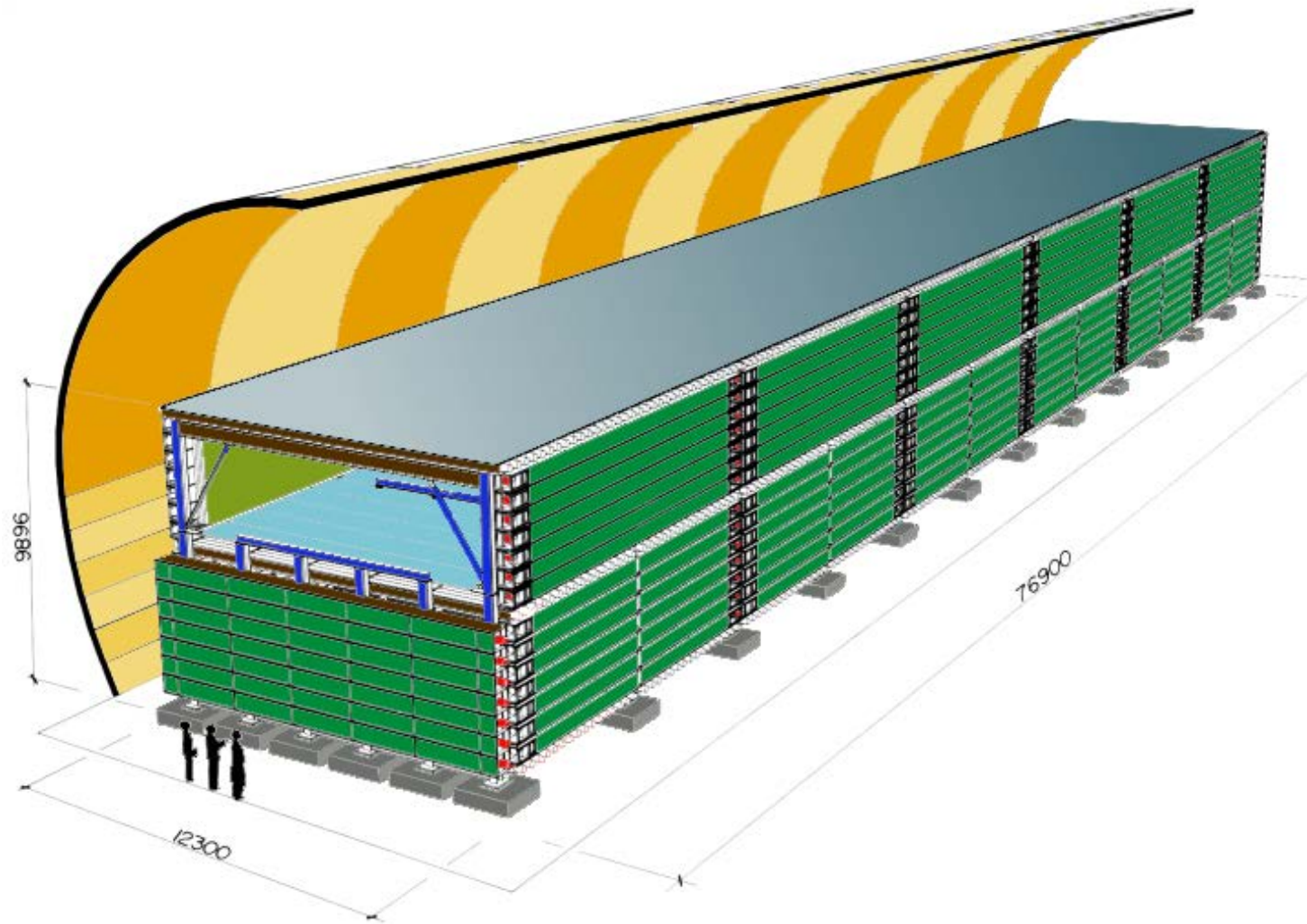
# The peripatetic Crystal Ball

One of the longest, most well-traveled lives in the business...

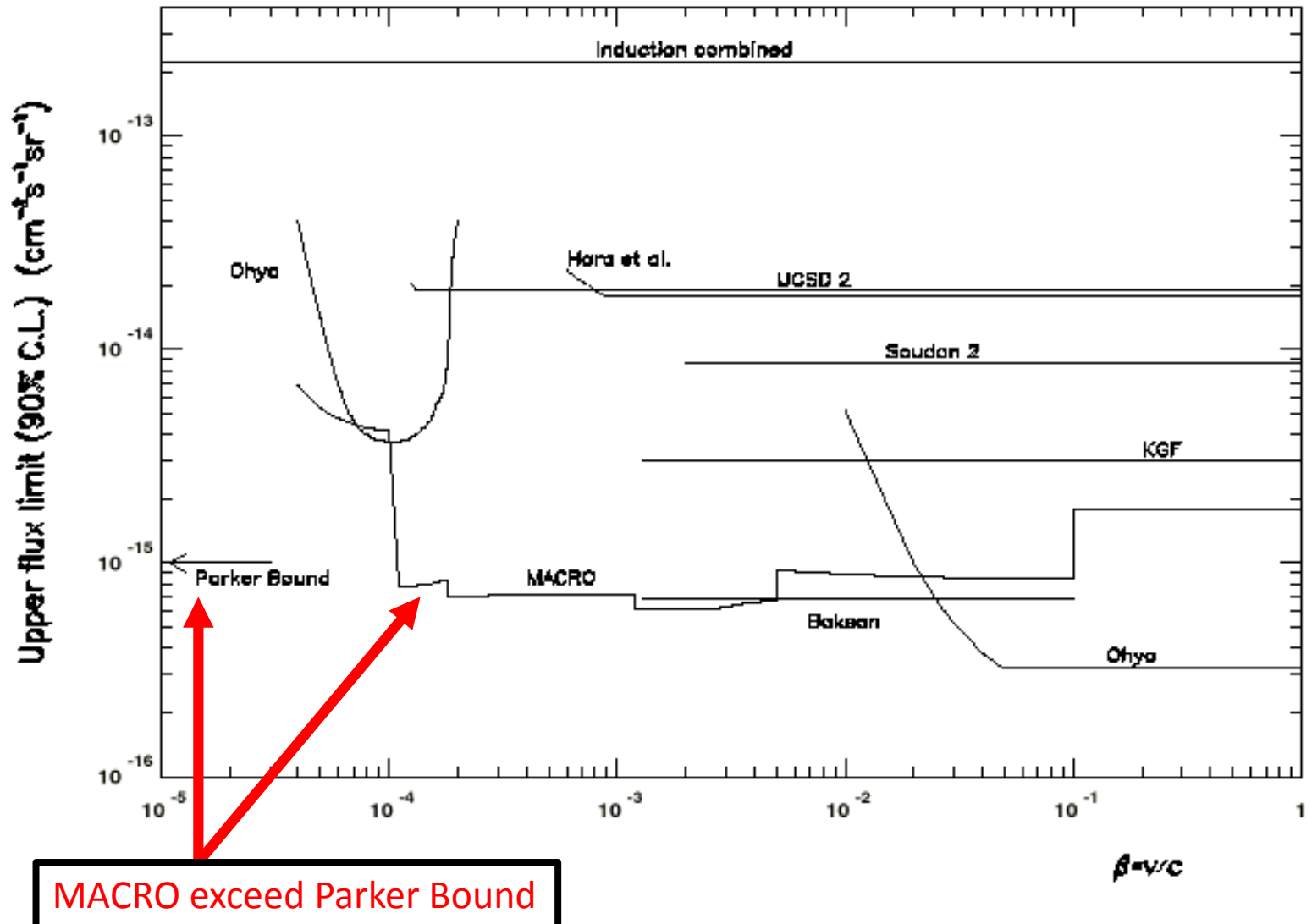
- ▶ Crystal array assembly at Harshaw Chemical Company in Cleveland
- ▶ 1978-1981 SLAC – SPEAR
  - ▶ work on possible move to PEP
  - ▶ 1982 proposal to be first/second detector at SLC
- ▶ 1982-1987 DESY – DORIS II
- ▶ 1987-1996 SLAC ESB (mothballed)
- ▶ 1996-2002 BNL AGS
- ▶ 2002-present Mainz Microtron (A2 Collaboration)



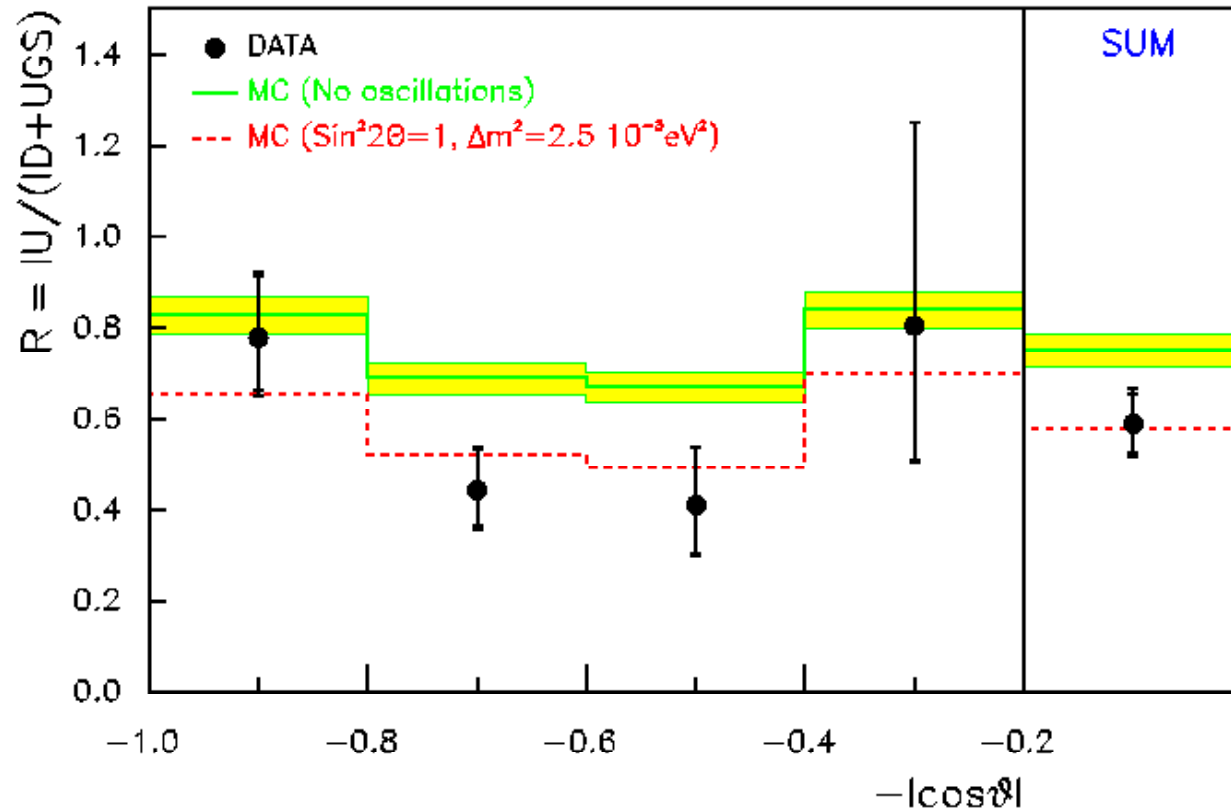
# Charlie Peck -- The heart of MACRO at Gran Sasso



# MACRO – Grand Unified Monopoles



# MACRO – Atmospheric $\nu$ Oscillations



**Data:**

$$R = 0.59 \pm 0.07_{\text{stat}}$$

Expected (No oscillations):

$$R = 0.75 \pm 0.04_{\text{sys}} \pm 0.04_{\text{th}}$$

Expected  $\square \rightarrow \square$  oscillations

$$R = 0.58 \pm 0.03_{\text{sys}} \pm 0.03_{\text{th}}$$



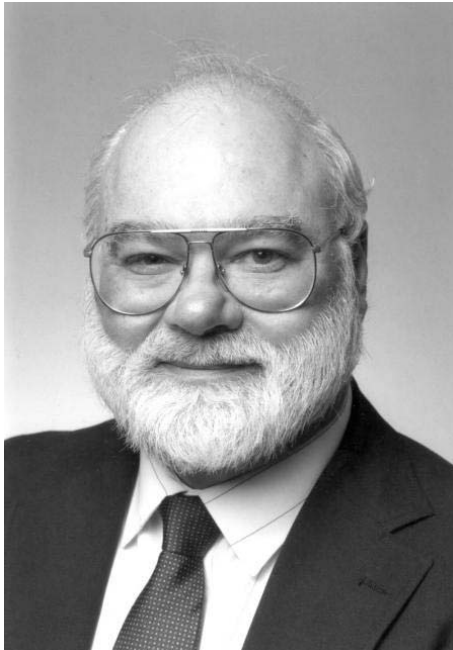
# Administrator

- ▶ Not Charlie's passion(!), nonetheless he leaves an important legacy as Chair of the Physics, Mathematics, and Astronomy Division at Caltech (1993-8)
- ▶ Played an substantial role in the survival of LIGO at a delicate and difficult time in its history
- ▶ Even as Charlie was gravely ill, he was excited by the announced discovery of gravitational waves

His career in his own words, at:

Oral history: Charles W. Peck

# Thanks, Charlie!



October 8, 2016

Charles Peck