

Ernest Orlando Lawrence Berkeley National Laboratory

Records Transmittal

Division	Department	Archives and Records Office Use Only
Engineering	Accelerator	
Group		Filing Code
Magnetic Measurement Eng.		ARO-4049
Location	25-123	LBL Accession Date
Transferee	Baker, Trina D.	7/16/1999
Head of Department		FRC Accession No.
Jack Franck		

Records Title

72 Inch Bubble Chamber Camera (Franckenstein) Lantern Slides And Film Slides

Inclusive Date of Records

1957 1963

No of Containers

1 Card File Box (Small)

Brief description of records

AT NARA

NRHS 326-00-024

This collection of lantern slides and film slides has no indications that they were developed by the lab photo shop. They are photos of the 72 Inch Bubble Chamber's Franckenstein, created by a team directed by Jack Franck, which worked with stereo pictures from the smaller chambers. The monster projected the tracks of charged particles, measured them, and punched the results on IBM cards. The Operator first aligned an optical index with the projected track. A scanner, consisting of a photomultiplier and an electronic time discriminator, locked onto the track and directed its own motion along it. The operator controlled the speed of motion and periodically registered track coordinates by pressing a button. The machine could measure five to ten events an hour; the standard method for reducing cloud-chamber data could manage one a day.

The 72 Inch Bubble chamber, a detector, was the idea of Luis Alvarez, who was seeking to create a bubble chamber long enough to observe the behavior of decay products of the new and problematic hyperons. The plan required large and dangerous volumes of liquid hydrogen, in a huge refrigeration system, metals capable of bearing enormous stresses at temperatures below -253 degrees centigrade, and an optical system to illuminate and photograph the interior of the chamber from one side. It was finished in march of 1959 and christened on June 22, 1959. It weighed 240 tons without the refrigeration system and lived near the Bevatron until it was moved to SLAC (Stanford Linear Accelerator) c. 1968.

The lantern slides have been edged with electrical tape which may present preservation problems.

Materials

Photographs - Photographs, Color Other

Records Retention

Historically Valuable Documents. Do not destroy. A detailed folder listing is included with the Records Transmittal

Destroy/Review on a scheduled basis with a minimum retention of _____ years. Disposal/Review Date: Perm

This is in accordance with:

The National Archive General Retention Schedule. Citation DOE 1324.2A Schedule 14, Item 2.d

The Department of Energy Retention Schedule. Citation

Disposal Authorization:

The legal retention of the records listed on this Records Transmittal has elapsed. Since I foresee no use of these records, I authorize their disposal.

Signature of Department Head

Date

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Container **Of**

- Box 1 Color slides 1963
- Box 2 Lantern slides