The History of SNEAP:

A Personal Perspective - 2016

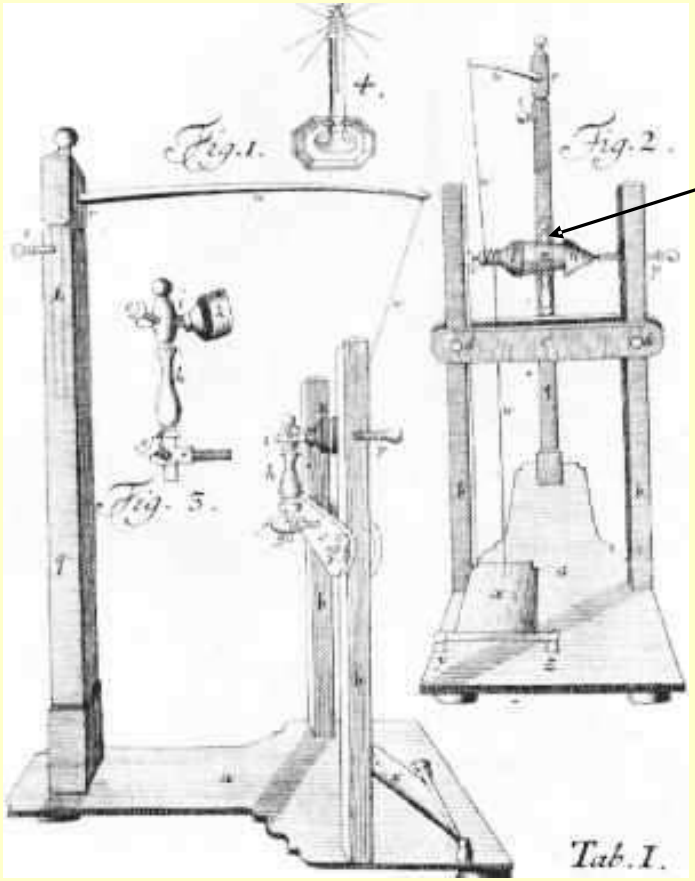
John McKay

SNEAP

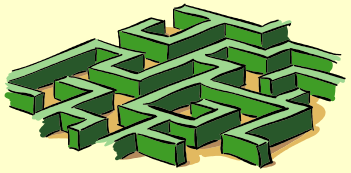
Born 1968

Arcs and Sparks

An electrostatic machine invented by Johann Heinrich Winkler (1703-1770)

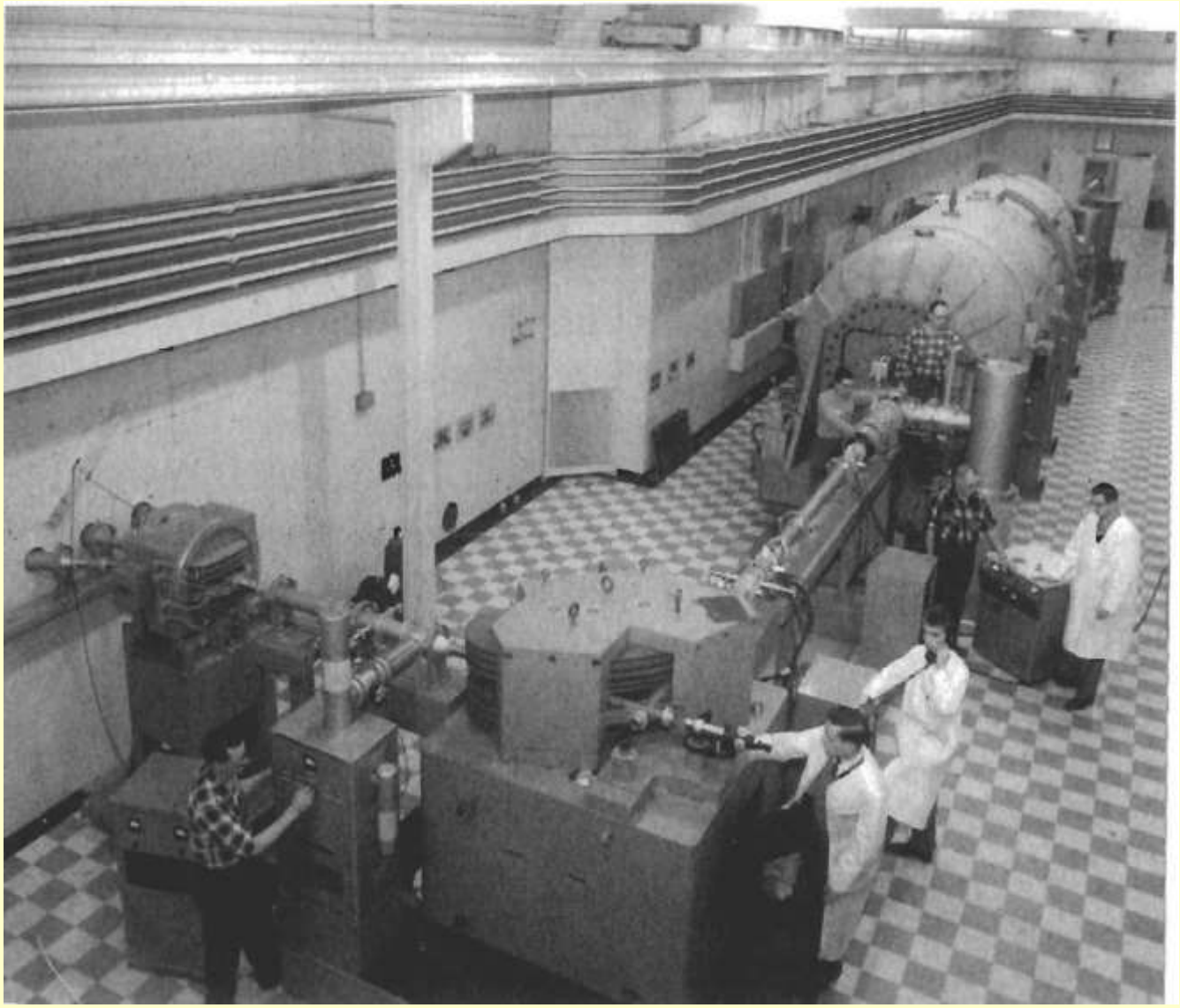


The Beer Glass Generator

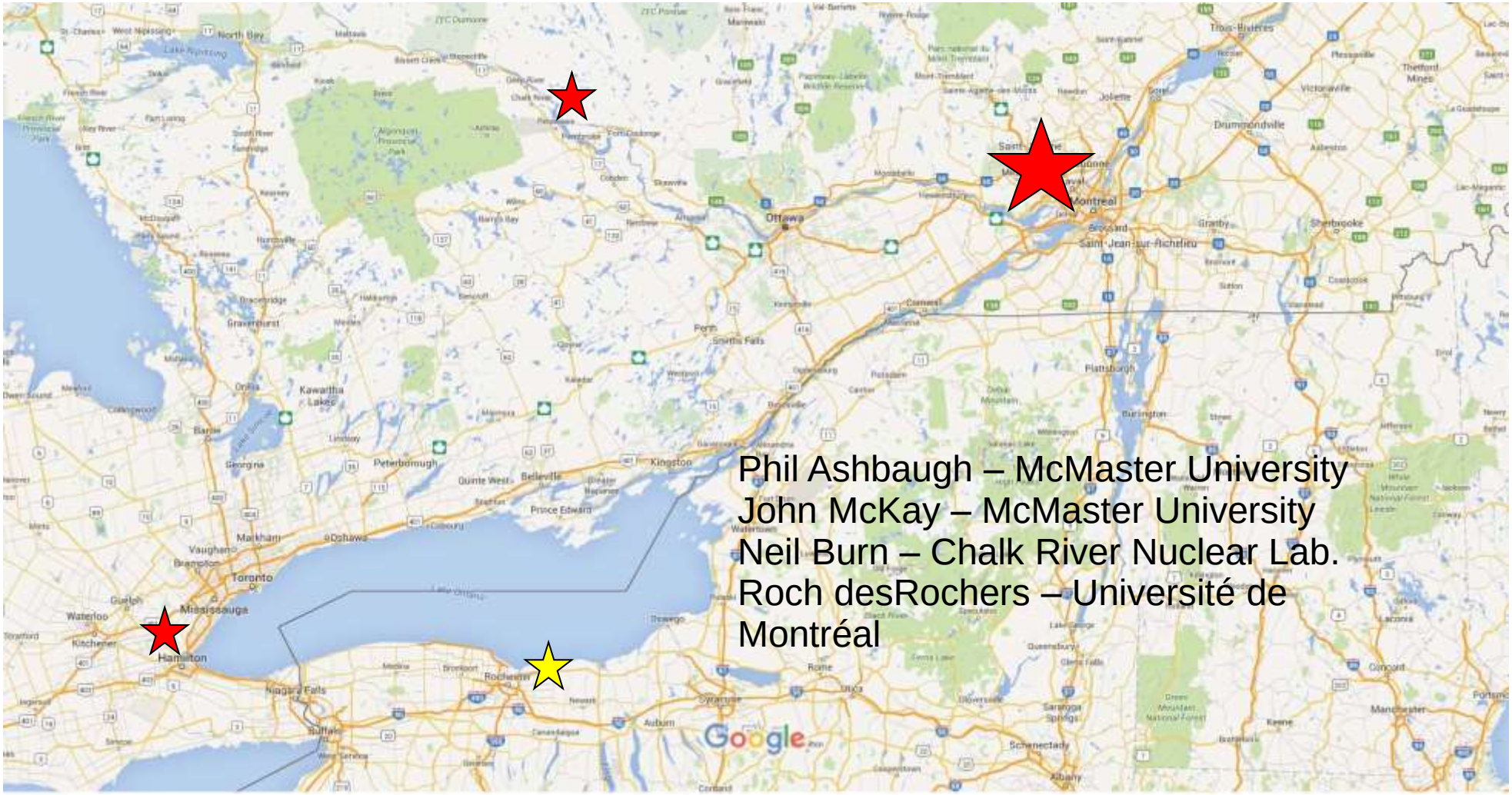


http://www.hp-gramatke.net/history/english/page4000.htm

Nuclear Physics
EN-1 The first Tandem -1959



SNEAP -The Beginning – April 1968



REPORT OF A MEETING

Time: Laboratoire de physique nucléaire, Département de physique, Université de Montréal.

Place: Wednesday, April 10, 1968, 8.30 to 17.30.

Participants: - McMaster University: Phil Ashbaugh, John McKay, Jim Toole, Hector Blanchard and four other techniciana.

- Chalk River Nuclear Laboratories: Neil Burn.

- Université de Montréal: Roch D. DesRochers, Pierre Bérichon and Jean Touchette, with others taken part in the discussion at intervals.

Purpose of Meeting: To establish a form of regular exchange of technical information among engineers and technicians responsible for operations, maintenance and technical support in nuclear research laboratories, primerily those equiped with tandem Van de Graaff accelerator.

The organisation of this and of future meetings of the same nature was first discussed. It was obvious to those present that people from other labs in the region, including roughly Eastern Canada and Northeastern United States, could bring out and obtain information. A wish was also expressed to try and keep the number of participants small enough, so that no formal structures would be required. With a smaller group of people having quite similar interests a flexible schedule and organisation is possible, while the National Particle Accelerator Conference, in March of odd-number years in Washington is recognized as the big meeting in our field with its obvious

CONCLUSION

The meeting was a success: useful information was given and received. Since this was the first meeting of the kind, it was obvious that more will be useful, at a rate of two years probably. The lack of time and of proper "agenda" made for an uneven distribution of discussion time. This of course left items for the next time. Items that could still be discussed and information experience on accelerator tubes (i.f. vs uniform field, "futurities" of magnetic suppression). It is obvious that future meeting will (or at least should) be not only reports of things accomplished by everyone in his lab. Coordination should extend to future work that we all agree now in general lines in technical development. But we should in the very near future establish a program and share the common quantity of development work.

Note: This report is being sent to prospective participants of future meeting, so that they can express their interests and suggestions by forwarding them to John McKay, Accelerator Laboratory, McMaster University, Hamilton, Ontario.

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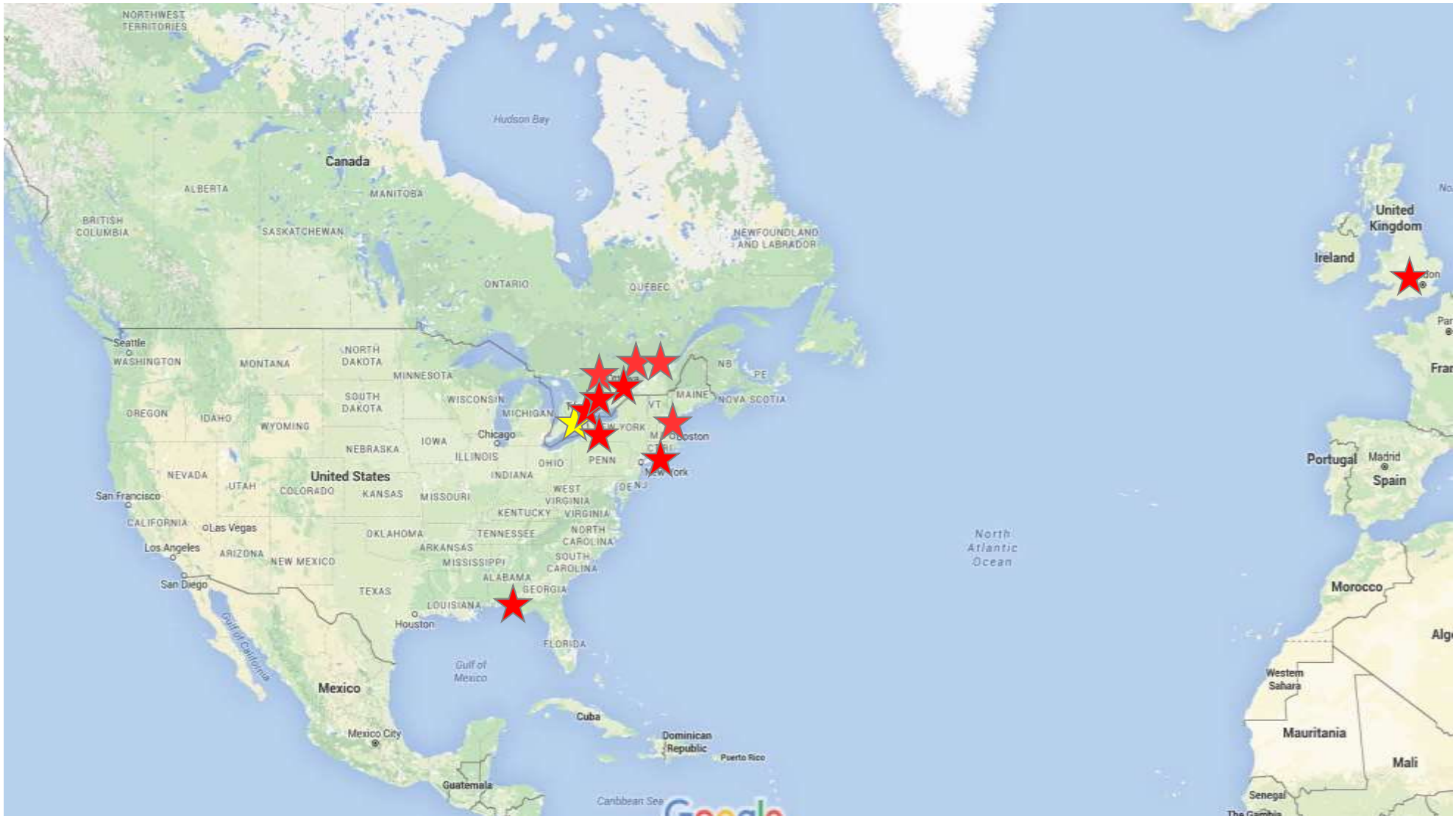
What is a `SNEAP`

This ancient word has a fine pedigree — Shakespeare used it a couple of times It's linked to Old Norse sneypa, to outrage, dishonour or disgrace. In Henry IV, Part 2, Sir John Falstaff responds to criticism from the Lord Chief Justice that he had been imposing on the innkeeper Mistress Quickly: "My lord, I will not undergo this sneap without reply."

sym·po·si·um
simˈpōzēəm/
noun
noun: symposium; plural noun: symposia; plural noun: symposiums

a conference or meeting to discuss a particular subject.
a collection of essays or papers on a particular subject by a number of contributors.
a drinking party or convivial discussion, especially as held in ancient Greece after a banquet (and notable as the title of a work by Plato).

SNEAP – Oct 1968 – McMaster University



At the 1985 SNEAP

SNEAP was for electrostatic accelerators only:

--that was rather distinct because we found we were starting to be a minority at the big accelerator conference where they started talking about projects where you had to get into a car to cross the accelerator from one side to the other. So originally this was an electrostatic conference only.

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At the 1985 SNEAP

It was to be a small conference:

It started out as a regional conference. We had no formal talks. A session of an hour or hour and one-half started with perhaps a 10 minute talk just to get the discussion going, and from there on it was freewheeling, open discussion.

We had one informal rule:

We said that if it could be published elsewhere it shouldn't be at SNEAP

At the 1985 SNEAP

The idea of SNEAP at that point was that it would be a place where you could bring your problems, your day-to-day solutions, your nuts and bolts things. There are a lot of items that are small enough that they do not make the standard publications, and this was originally what we intended the function of SNEAP to be --**a forum for those small day-to-day problems and solutions.**

We did have another 'rule' at one time when we said

"Physicists are not invited, unless they come as accelerator engineers, but none of this physics nonsense".

BELTS

RESISTORS

TUBES

CHAINS

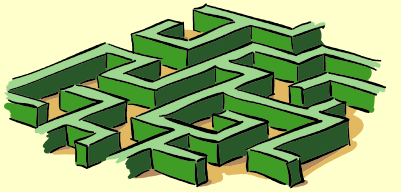
RECORD VOLTAGES

ION SOURCERY

Nuclear Physics
The ANU Accelerator

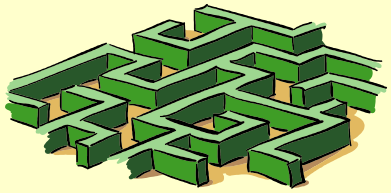
http://www.anu.edu.au/CSEM/machines/Accelerator.htm

Nuclear Physics
The ORNL 25URC Accelerator



http://www.phy.ornl.gov/hribf/accelerator/tandemweb/

Nuclear Physics
The Daresbury Tower



http://ns.ph.liv.ac.uk/useful_links.html

Nuclear Physics
The Vivitron

http://ireswww.in2p3.fr/ires/recherche/vivitron/uk/discovering.htm

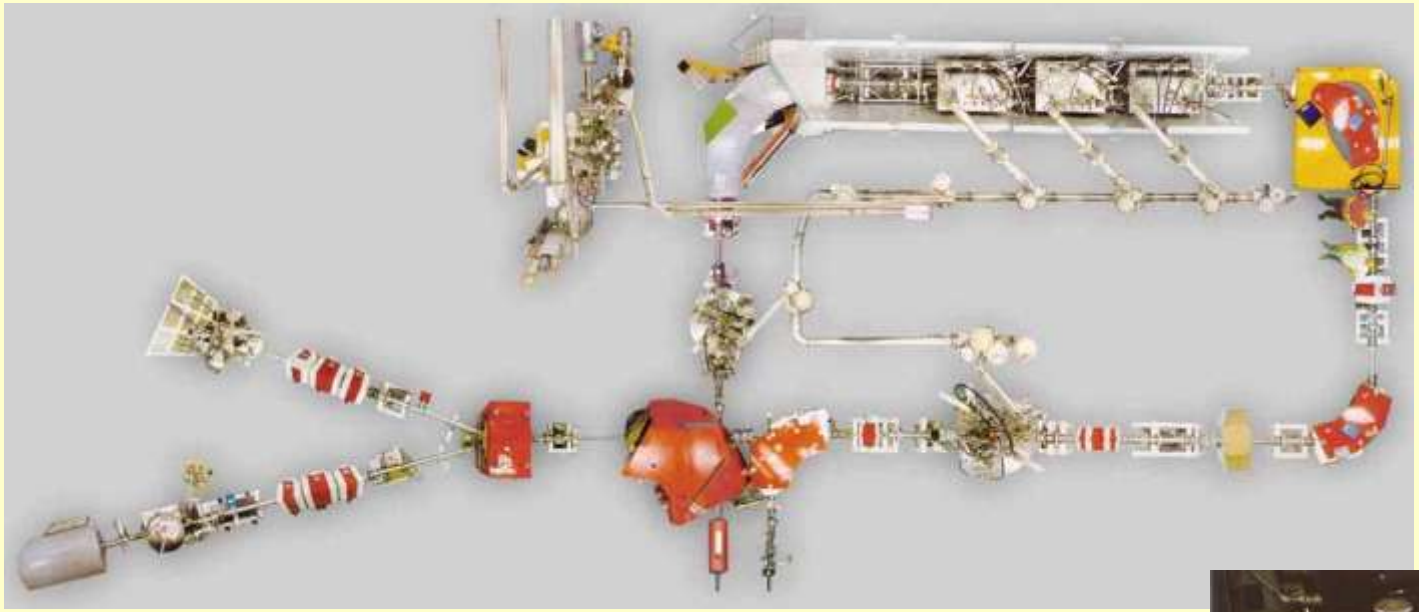
Nuclear Physics
The Yale ESTU Accelerator

http://wnsl.physics.yale.edu/estu/

Nuclear Physics

In a 1974 review paper, Allan Bromley stated, "Looking further into the future, electrostatic accelerator technology has now advanced to the point where it becomes reasonable to at least consider designs for tandem electrostatic accelerators in the 50-60 MV range."

Nuclear Physics
Afterburners



Australian National University Linac

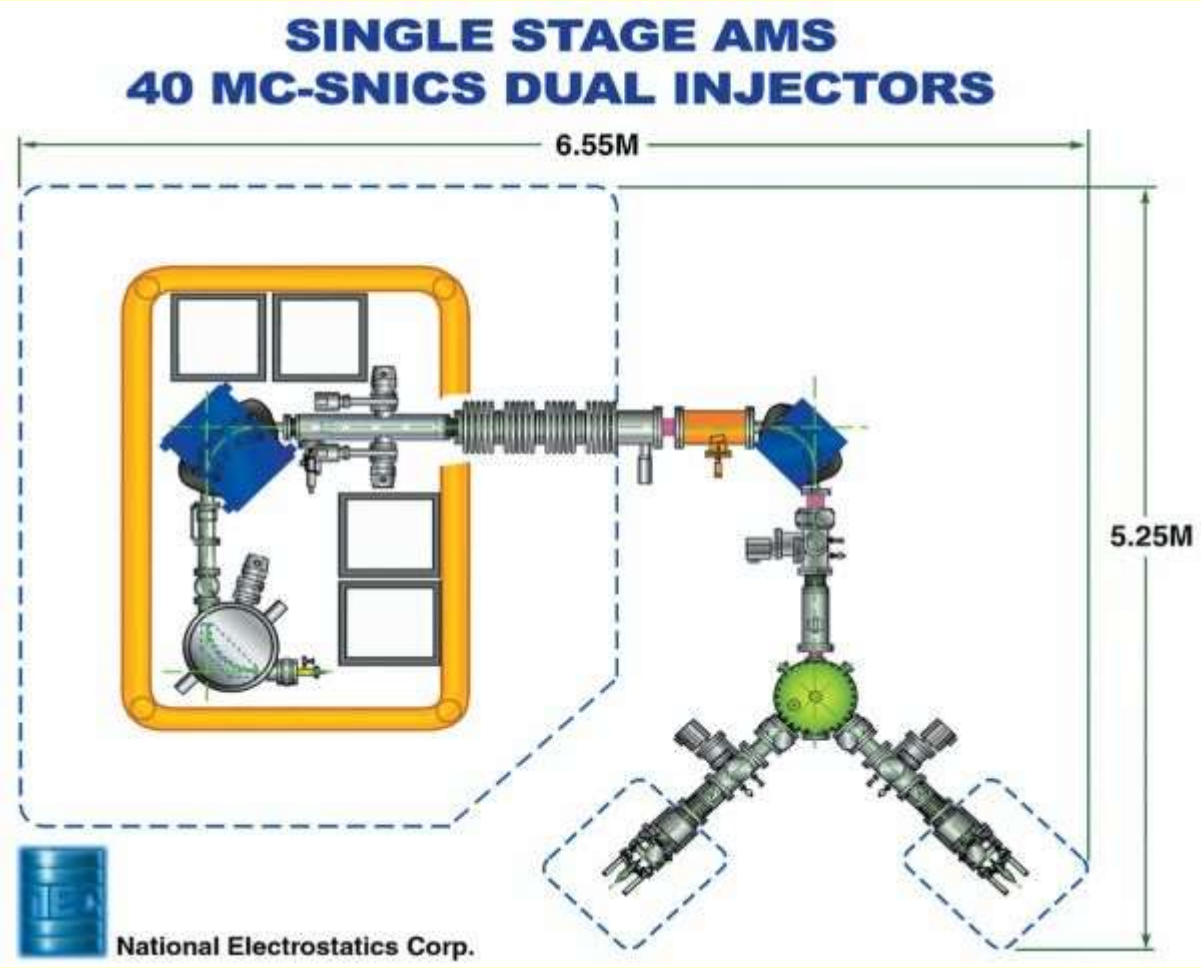
Atomic Energy Of Canada Ltd. TASCC cyclotron

Applications
NEC and HVEE

http://www.pelletron.com/

http://www.highvolteng.com/

Applications
The 'Table-top' Accelerator



http://www.pelletron.com/

Applications
The Coke Can Van de Graaff

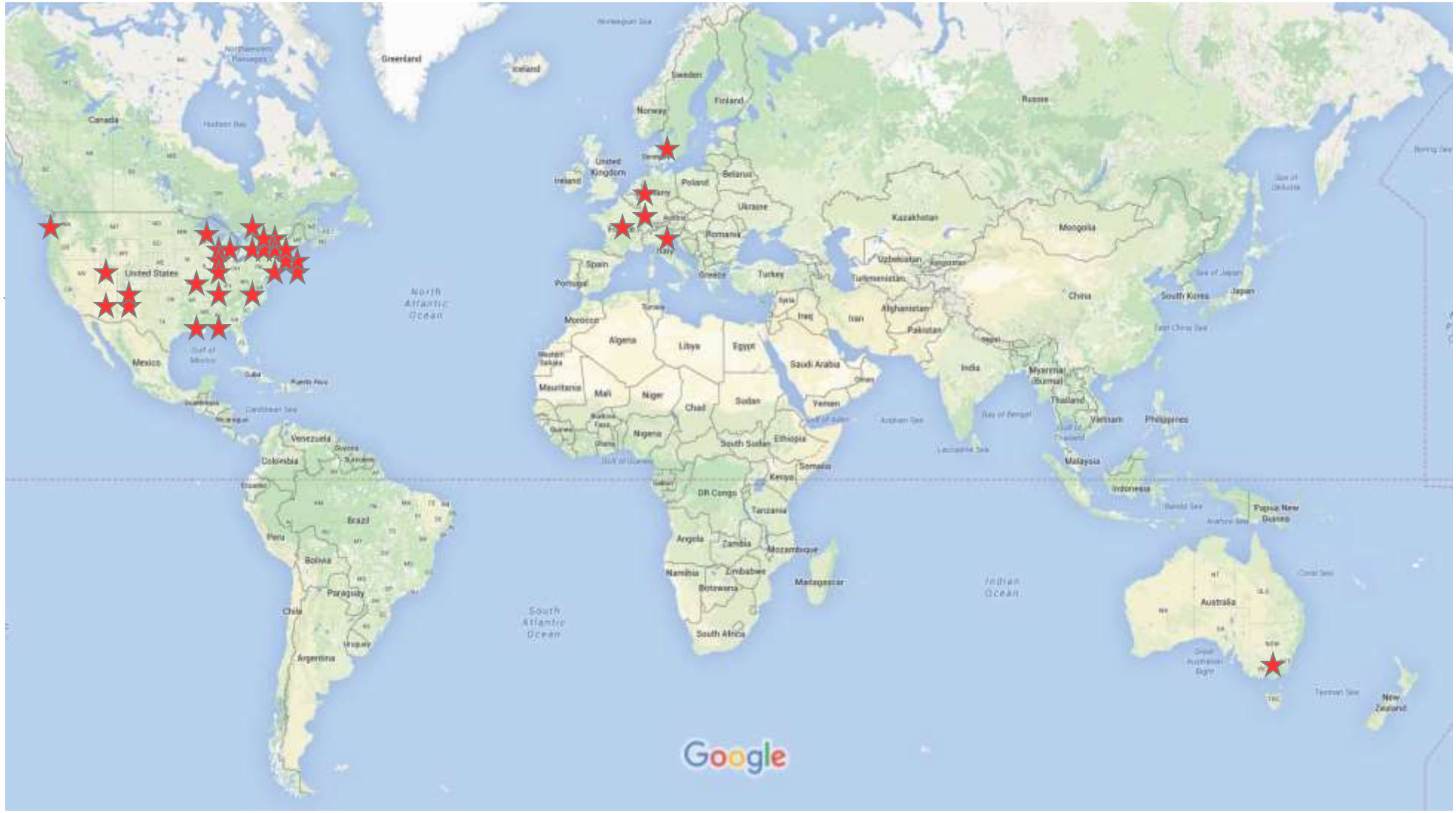
http://sci-toys.com/scitoys/scitoys/electro/electro6.html


NORTH
AMERICA
ASIA
Atlantic
Ocean
AFRICA
SOUTH
AMERICA
Indian
Ocean
AUSTRALIA

SNEAP XLVIII – Oct. 2015
Where we have been

1968 Université de Montréal, Canada
1968 McMaster University, Canada
1969 Chalk River Nuclear Laboratories, Canada
1970 Université de Montréal, Canada
1971 McMaster University, Canada
1972 Florida State University, U.S.A.
1973 Brookhaven National Laboratory, U.S.A.
1974 Queen's University, Canada
1975 McMaster University, Canada
1976 Florida State University, U.S.A.
1977 Los Alamos National Laboratory, U.S.A.
1978 Oak Ridge National Laboratory, U.S.A.
1979 University of Pennsylvania, U.S.A.
1980 University of Wisconsin, U.S.A.
1981 McMaster University, Canada
1982 University of Washington, U.S.A.
1983 University of Rochester, U.S.A.
1984 S.U.N.Y. at Stony Brook, U.S.A.
1985 Argonne National Laboratory, U.S.A.
1986 University of Notre Dame, U.S.A.
1987 Florida State University, U.S.A.
1988 Yale University, U.S.A.
1989 Oak Ridge National Laboratory, U.S.A.
1990 Kansas State University, U.S.A.
1991 Los Alamos National Laboratory, U.S.A.
1992 Chalk River Nuclear Laboratories, Canada
1993 University of Rochester, U.S.A.
1994 Western Michigan University, U.S.A.
1995 Triangle Universities Nuclear Laboratory, U.S.A.
1996 Woods Hole Oceanographic Institution, U.S.A.
1997 Forschungszentrum Julich, Germany
1999 Oak Ridge National Laboratory, U.S.A.
2000 Yale University, U.S.A.
2001 Lunds Universitet, Sweden
2002 Louisiana Accelerator Center, U.S.A.
2003 IreS Strasbourg, France
2004 McMaster University, Canada
2005 Yale University/ Brookhaven National Lab., U.S.A.
2006 ANSTO/Australian National University, Australia
2007 Brigham Young University, U.S.A.

SNEAP XLVIII – Oct. 2015
Where we have been




SNEAP - HIAT 2005
SNEAP 1993
SNEAP 83
SNEAP XVIII
STONY BROOK, NEW YORK
ELECTROSTATIC ACCELERATORS AND ASSOCIATED BOOSTERS 92
ELECTROSTATIC ACCELERATORS AND ASSOCIATED BOOSTERS 88
HEAVY ION ACCELERATOR TECHNOLOGY
SNEAP 80
SNEAP 1981
SNEAP 1981
REVIEW OF SCIENTIFIC INSTR
63RD EDITION
PHYSICS
Clocks

THE FUTURE

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