

Introduction

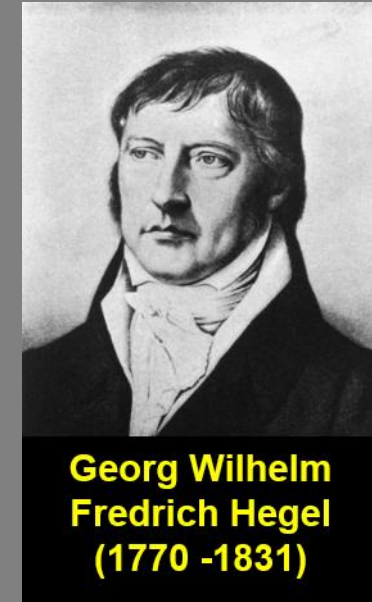
1960s (first fringes), early 1970s

Richard Schilizzi
University of Manchester

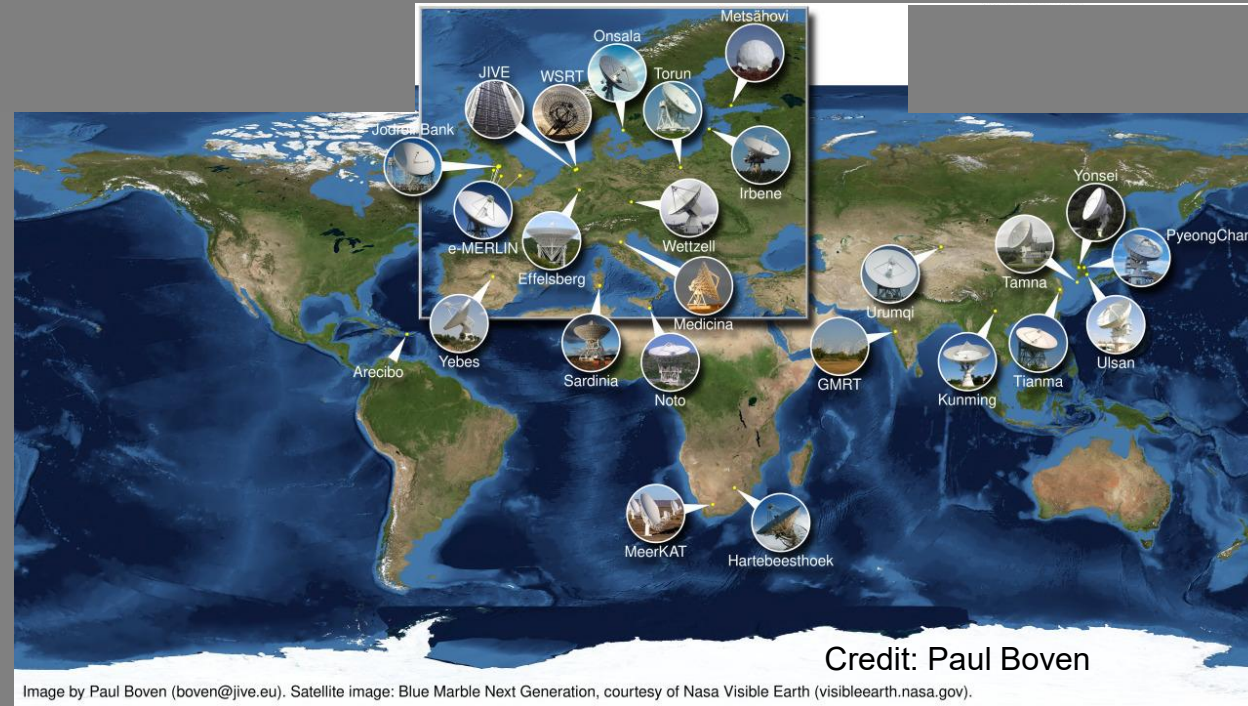
Caveats

The only thing we learn from history is
that we learn nothing from history

Human memory is a leaky storage device



Big science, big collaborations



1975 first ideas
1980 EVN established



1980 first ideas
1993 JIVE established as a legal entity
2014 JIV-ERIC established

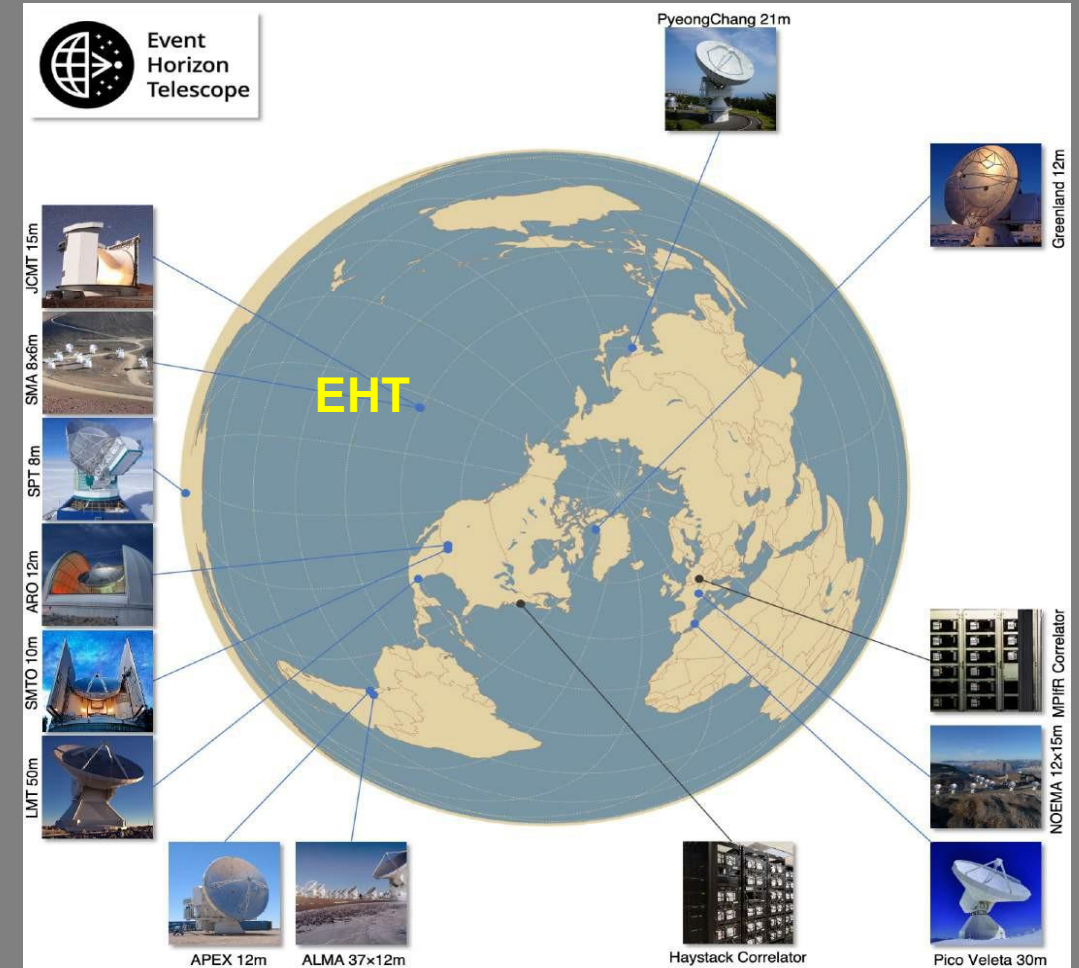
SKAO

1990 first ideas
2011 initial legal entity
2021 IGO

Big science, big collaborations.II

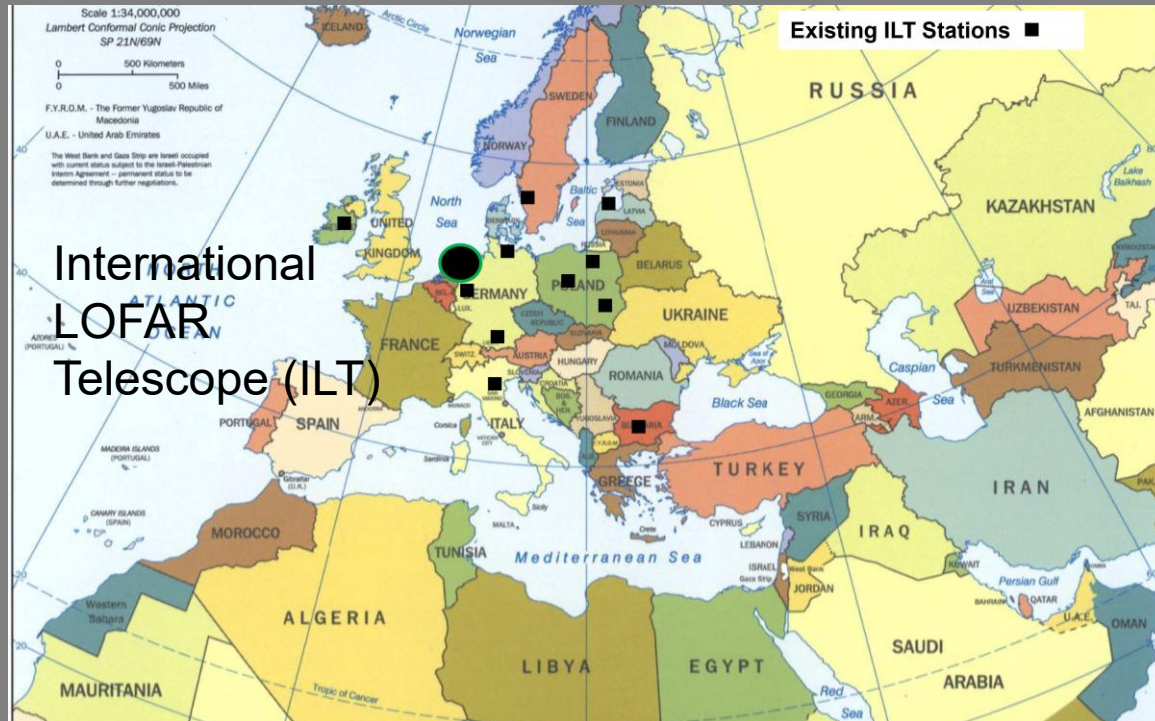


1986 CMVA first ideas
1995 CMVA established
2004 GMVA in operation

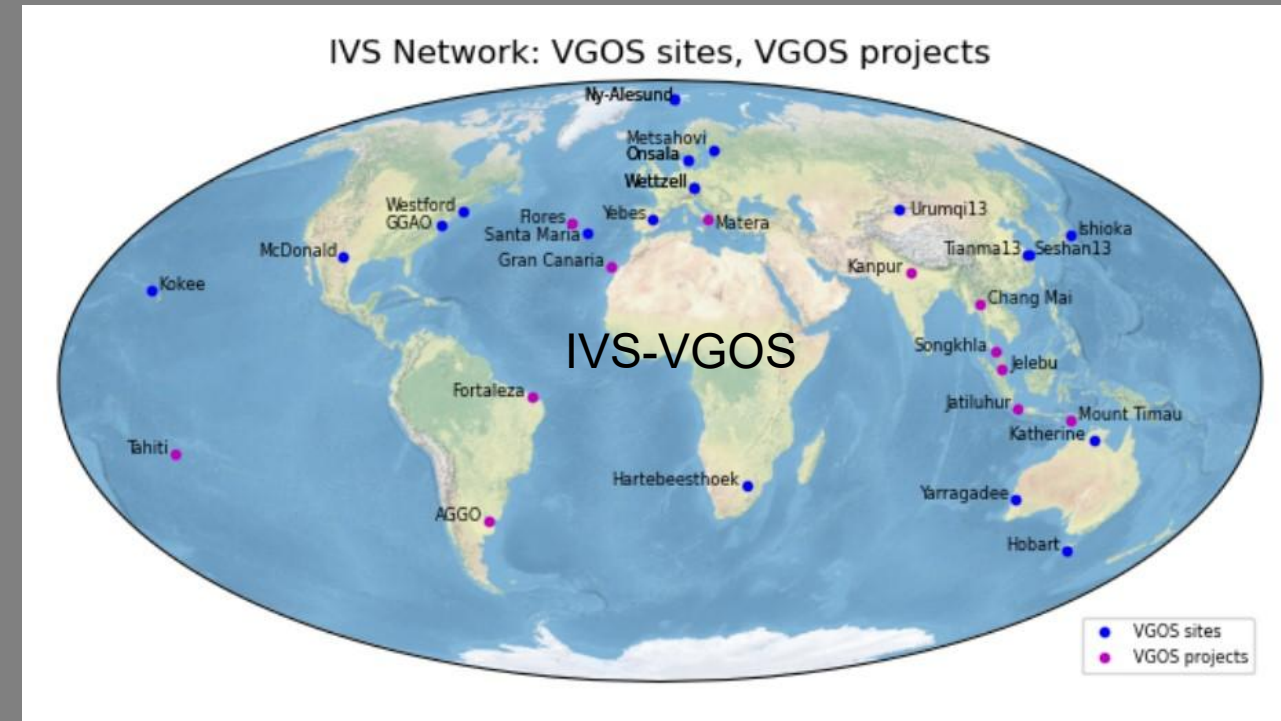


1996-2002 EHT first ideas
2017 EHT formally constituted

Big science, big collaborations. III



1997 First ideas for LOFAR incl. long baselines
2010 LOFAR in operation
2014 ILT in operation
2021 ILT-ERIC established



1999 International VLBI Service for Geodesy and Astrometry (IVS) in operation
2020 VLBI Global Observing System (VGOS)

An astronomer's signal is a geodesist's noise and vice-versa

+National arrays: VLBA, Australian LBA, KVN, Chinese VLBI Array, JVLBI, QUASAR
+International arrays: HSA, EAVN, African VLBI Network, Astro2Geo

VLBI in the 1960s. I

(some of the) VLBI pioneers



Henry
Palmer



Bryan
Anderson



Leonid
Matveenko

First ideas for independent-oscillator tape-recorder radio interferometry

1962 Ideas for tape-recorder interferometry discussed in USSR, patent applied for in 1965

1963 Same idea, independently, in Jodrell Bank, to enable very long baselines, eg to Crimea.

Design and construction of recording and playback system began in 1967

Key technical advances by the mid-1960s that enabled VLBI:

- precision atomic clocks for time and frequency
- high speed tape recorders, wide bandwidth
- fast digital computers

VLBI in the 1960s. II

(some of the) VLBI pioneers



Henry
Palmer



Bryan
Anderson



Leonid
Matveenکو



Marshall
Cohen



Ken
Kellermann



Barry
Clark



Dave
Jauncey



Jim
Moran



Norm
Brotén



Alan
Yen



Olof
Rydbeck

1967 First successful VLBI

Canada (Algonquin-Penticton, 3074 km, analogue recording)
USA (Green Bank – Maryland Point, 220 km, digital recording)

showed many sources have very compact structure → rich new field of research

1968 First trans-Atlantic VLBI at European observatories

Green Bank - Onsala (January)

Haystack – Onsala (April, first geodetic observations)

Algonquin-Jodrell (June)

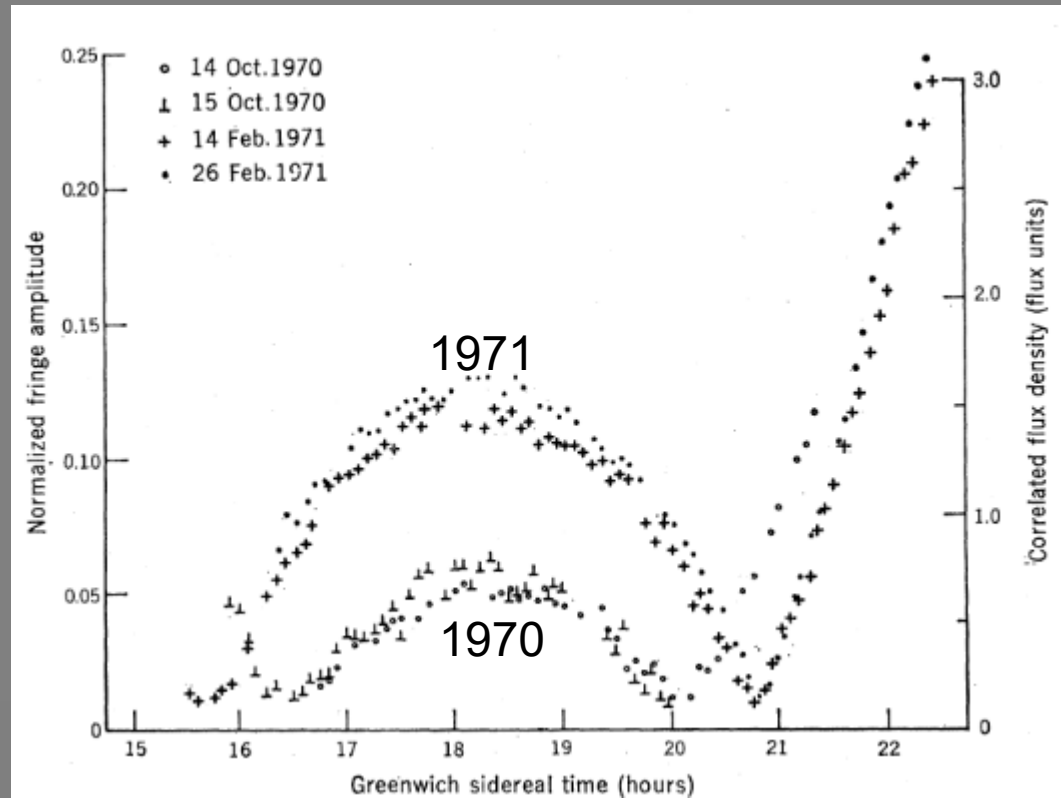
Jodrell –Arecibo

1969 First trans-"Iron Curtain" observations, Green Bank-Simeiz

First trans-Pacific observations, Owens Valley - Parkes

Reference: Kellermann et al, "Open Skies, Ch 8.2

First significant discovery from VLBI - Superluminal motion in 3C279, 1970-1



Haystack-Goldstone

Whitney et al, 1971

Cohen et al, 1971

End