"Travels for the Internet"*

for

IPNETWORKING 92

11th February, 1992

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Program Director, Interagency & international Networking Coordination
National Science Foundation

*** or, "why we travel so that you won't have to."**

Overview

Global Internet

network of interconnected networks
~ 725,000 host computers
~ 3 – 7 million users

United States:

Interim Interagency National Research & Education Network

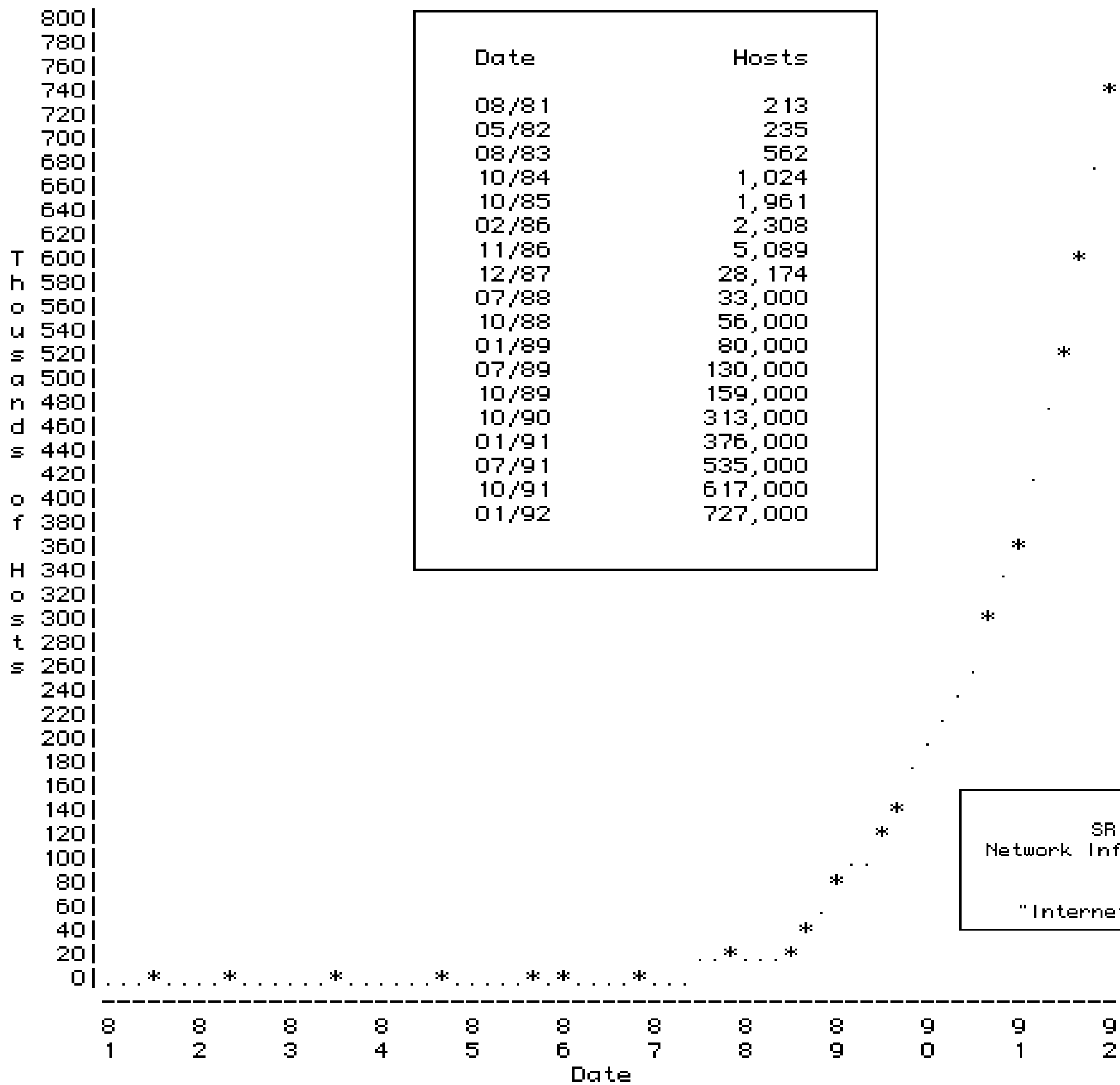
DARPA, Energy, NASA, NSF networks
~ 4,500 networks configured (3,000+ are active)
~ 38 countries reachable by interactive connect.
~ 50 countries reachable by at least mail exch.

Selected Capabilities

distributed conferencing, computation
data access and exchange, graphical representation
increasingly capable end-user productivity applications

Internet Growth

Number of Internet Hosts (linear)



Date	Hosts
08/81	213
05/82	235
08/83	562
10/84	1,024
10/85	1,961
02/86	2,308
11/86	5,089
12/87	28,174
07/88	33,000
10/88	56,000
01/89	80,000
07/89	130,000
10/89	159,000
10/90	313,000
01/91	376,000
07/91	535,000
10/91	617,000
01/92	727,000

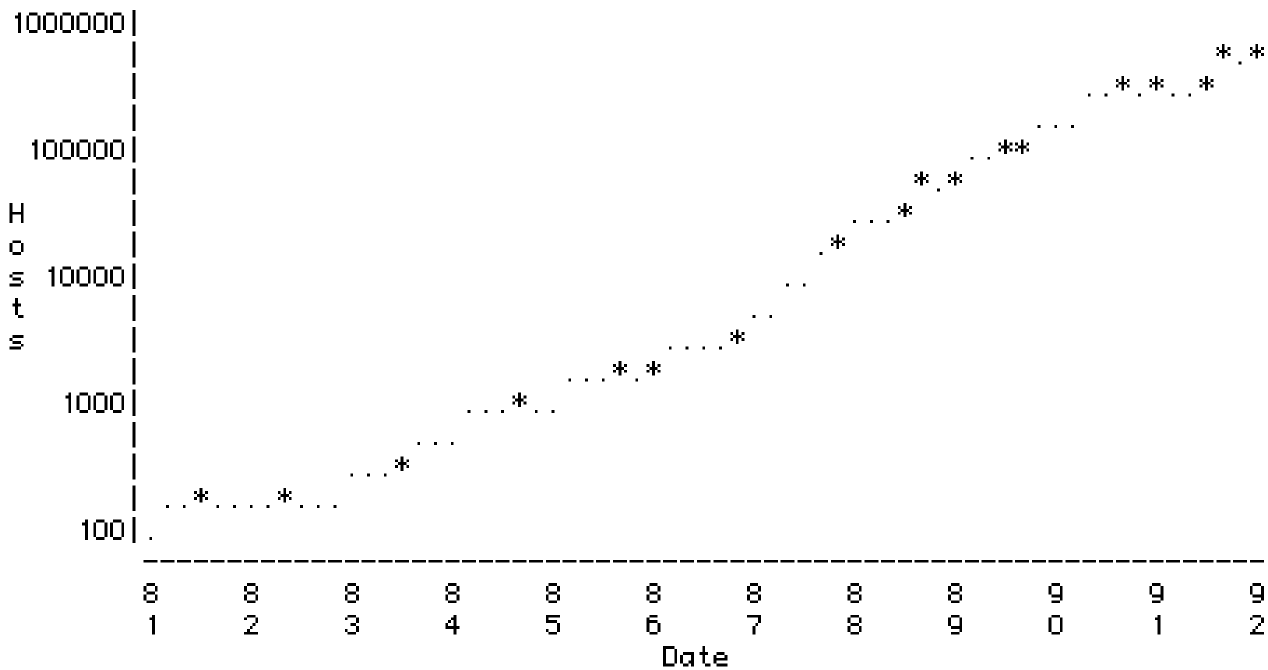
Mark Lottor
SRI International
Network Information Systems Center
January 1992

"Internet Growth (1981-1991)"

"*" = data point, "." = estimate

Internet Growth

Number of Internet Hosts (logarithmic)



"*" = data point, "." = estimate

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"Internet Growth (1981-1991)"

Country/Nets (selected)

United States	NSFNET	Netherlands	SURFnet
	NASA Science Internet		NLnet
	Energy Sciences	France	Renater(new)
	PSInet		Fnet
	Alternet		Aristote
	ANSnet	Switz'd	SWITCH
	+mid-levels...	Finland	FUnet
Canada	CA*net	Italy	GARR
Australia	AARnet	Norway	UNINETT
Sweden	SUnet	Japan	TISN
	SWIPnet		WIDE
Germany	WIN		SINET
	XLink	Europe	EARN
	UNIDO		EUnet
United Kingdom	JANET	US	BITNET
	UKnet	Mexico	RedMex

NSFNET T1 Backbone Traffic Distribution by Country

January 1992 Packet Total: 9,731,751,900

Networks: 3,591 Countries: 38

Packet Counts

Nets	Country	% In	% Out
2065	United States	88.80	85.05
167	Canada	3.67	3.60
111	Australia	1.28	0.95
30	Sweden	1.14	1.81
84	United Kingdom	0.84	0.81
169	Germany	0.67	1.27
15	Finland	0.55	0.72
128	France	0.43	0.85
9	Norway	0.42	0.56
79	Japan	0.39	0.25
19	Israel	0.36	0.47
25	Taiwan	0.23	0.26
405	(unrecognized)	0.20	0.00
5	Denmark	0.18	0.28
7	Mexico	0.14	0.10
8	Korea	0.12	0.12
2	Singapore	0.09	0.09
18	New Zealand	0.09	0.07
4	Hong Kong	0.08	0.08
60	Netherlands	0.08	0.92

Nets	Country	% In	% Out
3	Puerto Rico	0.05	0.04
12	Spain	0.04	0.06
11	Brazil	0.02	0.02
5	Greece	0.02	0.04
12	South Africa	0.02	0.03
47	Italy	0.02	0.37
1	Chile	0.01	0.01
7	Ireland	0.01	0.07
7	Portugal	0.01	0.02
1	Iceland	0.01	0.01
5	Poland	0.01	0.02
1	India	0.01	0.02
41	Switzerland	0.00	0.77
1	Argentina	0.00	0.00
19	Austria	0.00	0.25
1	Tunisia	0.00	0.00
2	Hungary	0.00	0.01
3	Belgium	0.00	0.02
1	Czechoslovakia	0.00	0.00
1	Yugoslavia	0.00	0.00

N.B., based on projections of sampling at NSFNET Backbone T1 switches; use caution in making inferences!

NSFNET T1 Backbone Traffic Distribution by Country

January 1992 Byte Total: 1,742,268,635,200

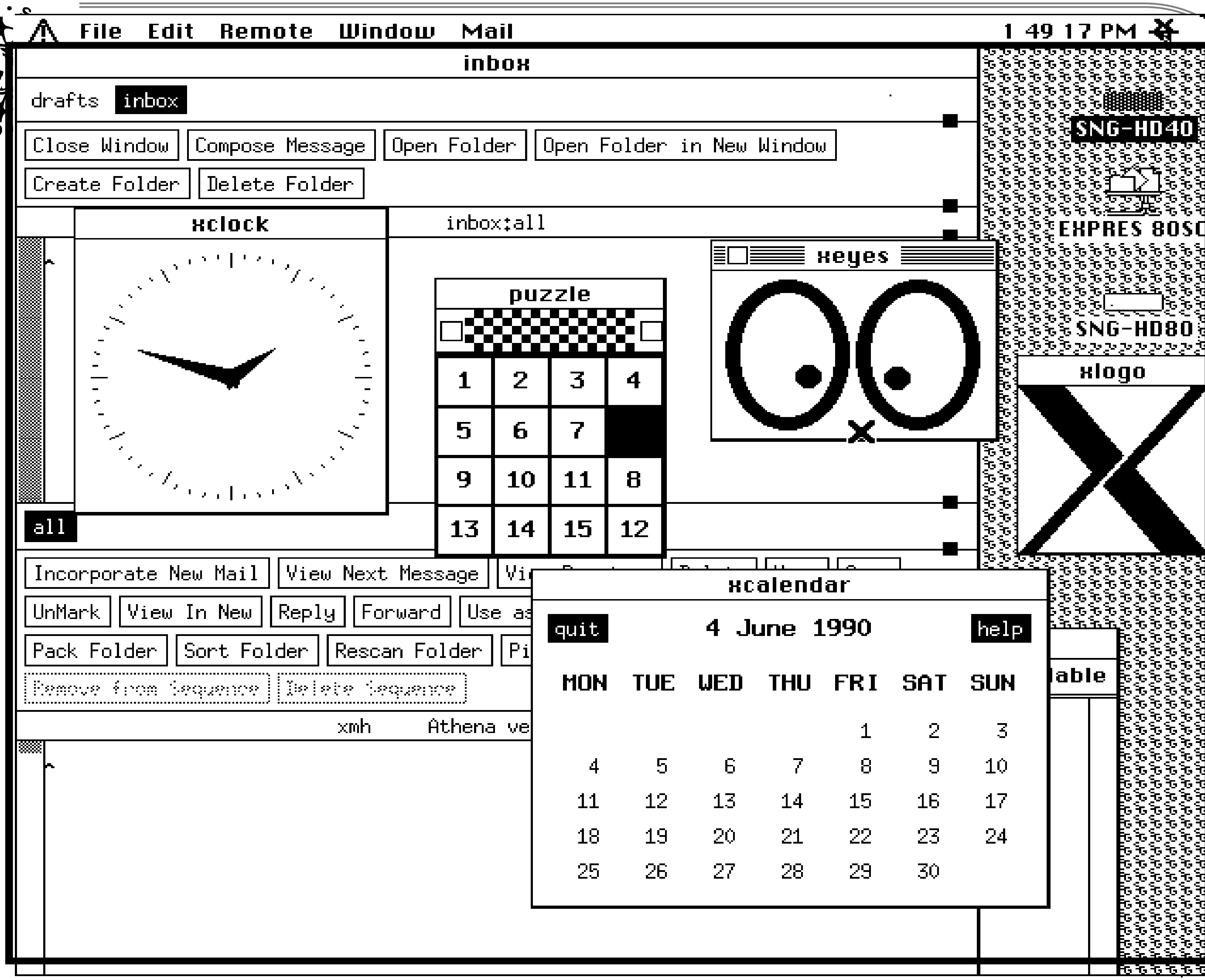
Networks: 3,591 Countries: 38

Byte Counts

Nets	Country	% In	% Out
2065	United States	92.00	80.16
167	Canada	2.33	4.92
111	Australia	1.07	1.17
15	Finland	0.86	0.60
30	Sweden	0.86	1.35
169	Germany	0.56	2.05
84	United Kingdom	0.42	1.19
128	France	0.41	1.24
79	Japan	0.31	0.32
9	Norway	0.24	0.65
19	Israel	0.18	0.63
405	(unrecognized)	0.14	0.00
7	Mexico	0.12	0.11
5	Denmark	0.10	0.46
25	Taiwan	0.08	0.52
8	Korea	0.05	0.20
60	Netherlands	0.05	1.23
18	New Zealand	0.04	0.12
2	Singapore	0.03	0.13
4	Hong Kong	0.03	0.12

Nets	Country	% In	% Out
3	Puerto Rico	0.03	0.03
5	Greece	0.02	0.05
1	Chile	0.02	0.01
12	Spain	0.02	0.09
12	South Africa	0.01	0.03
11	Brazil	0.01	0.03
47	Italy	0.01	0.61
1	Iceland	0.00	0.01
7	Ireland	0.00	0.08
7	Portugal	0.00	0.03
41	Switzerland	0.00	1.35
5	Poland	0.00	0.02
1	India	0.00	0.01
1	Argentina	0.00	0.00
19	Austria	0.00	0.42
1	Tunisia	0.00	0.00
2	Hungary	0.00	0.01
3	Belgium	0.00	0.04
1	Czechoslovakia	0.00	0.00
1	Yugoslavia	0.00	0.00

N.B., based on projections of sampling at NSFNET Backbone T1 switches; use caution in making inferences!



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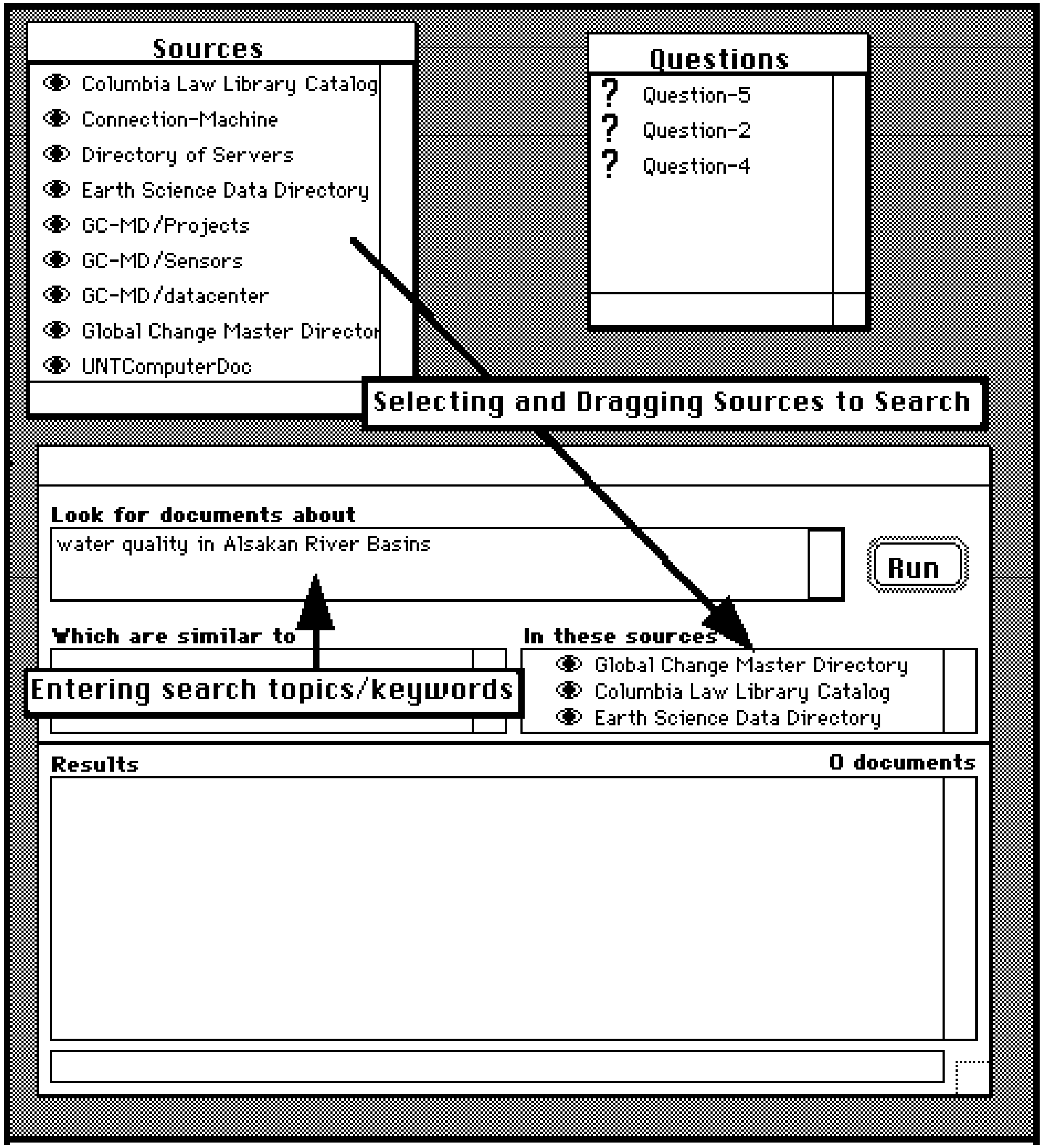
Sources
Columbia Law Library Catalog
Connection-Machine
Directory of Servers
Earth Science Data Directory
GC-MD/Projects
GC-MD/Sensors
GC-MD/datacenter
Global Change Master Director
UNTComputerDoc
Questions
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Question-4
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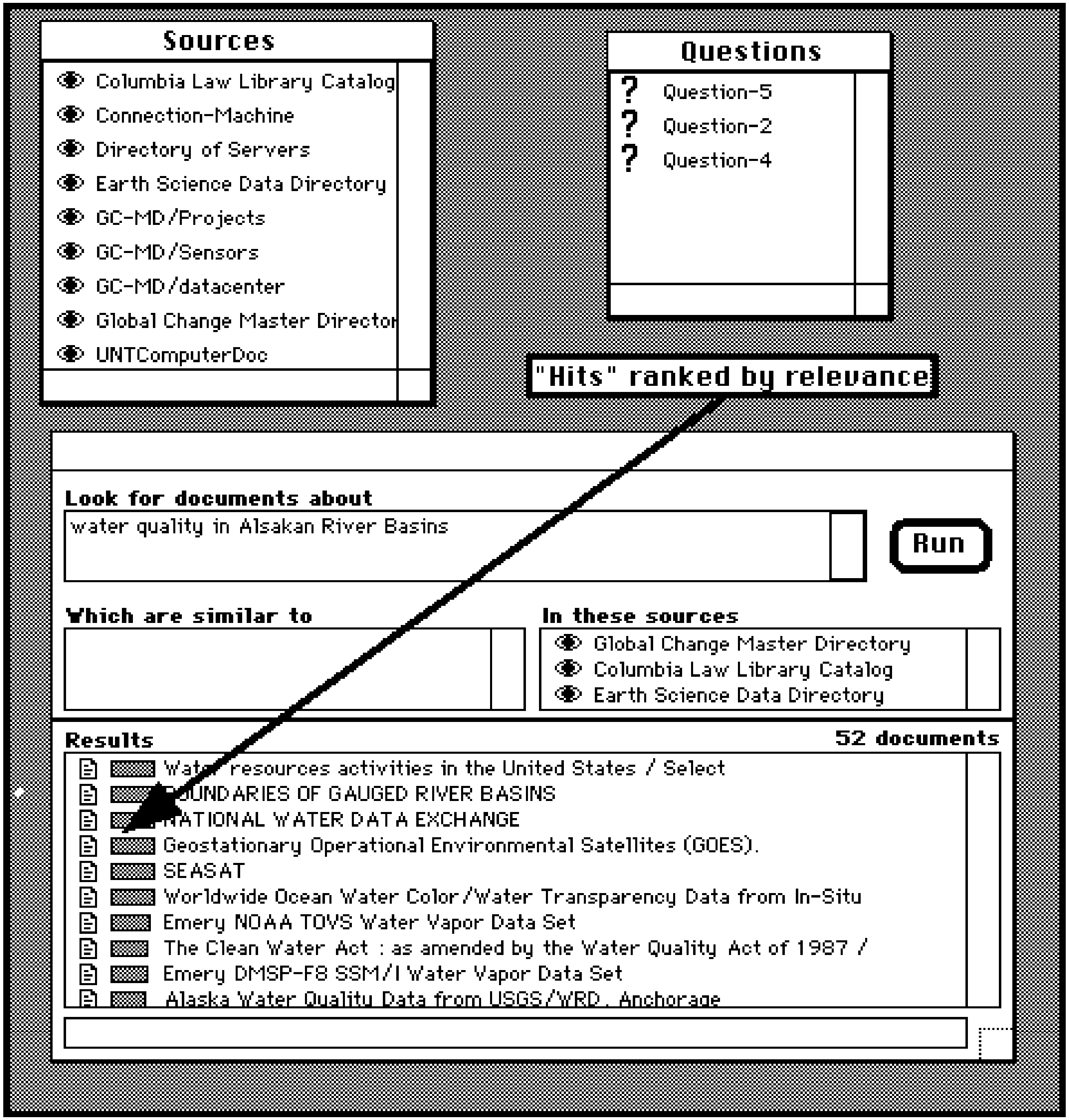

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Geostationary Operational Environmental Satellites (GOES).
SEASAT
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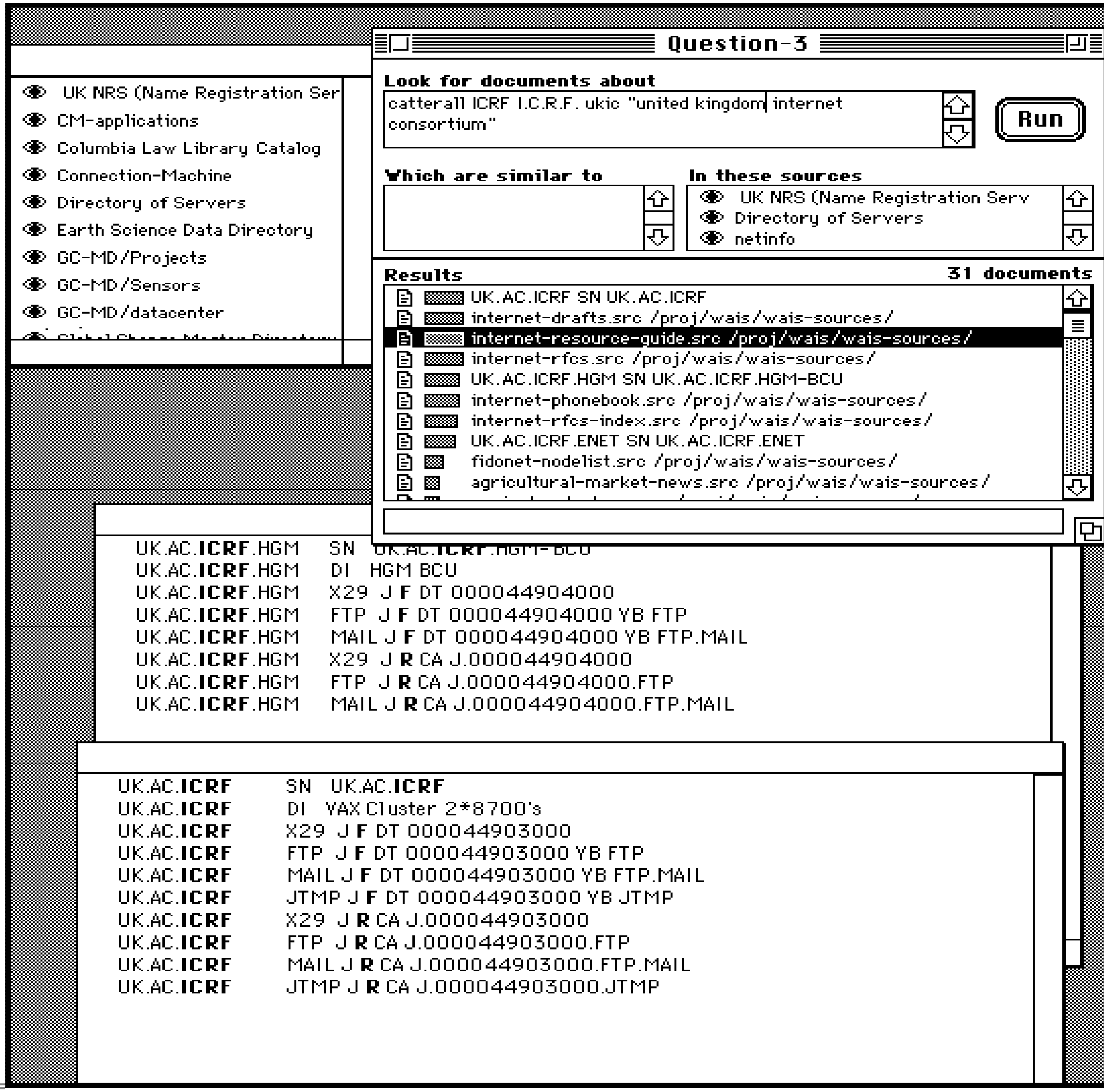
Emery NOAA TOVS Water Vapor Data Set
The Clean Water Act : as amended by the Water Quality Act of 1987 /
Emery DMSP-F8 SSM/I Water Vapor Data Set
Alaska Water Qualitu Data from USGS/WRD, Anchorage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