

A Lifetime of Blazars

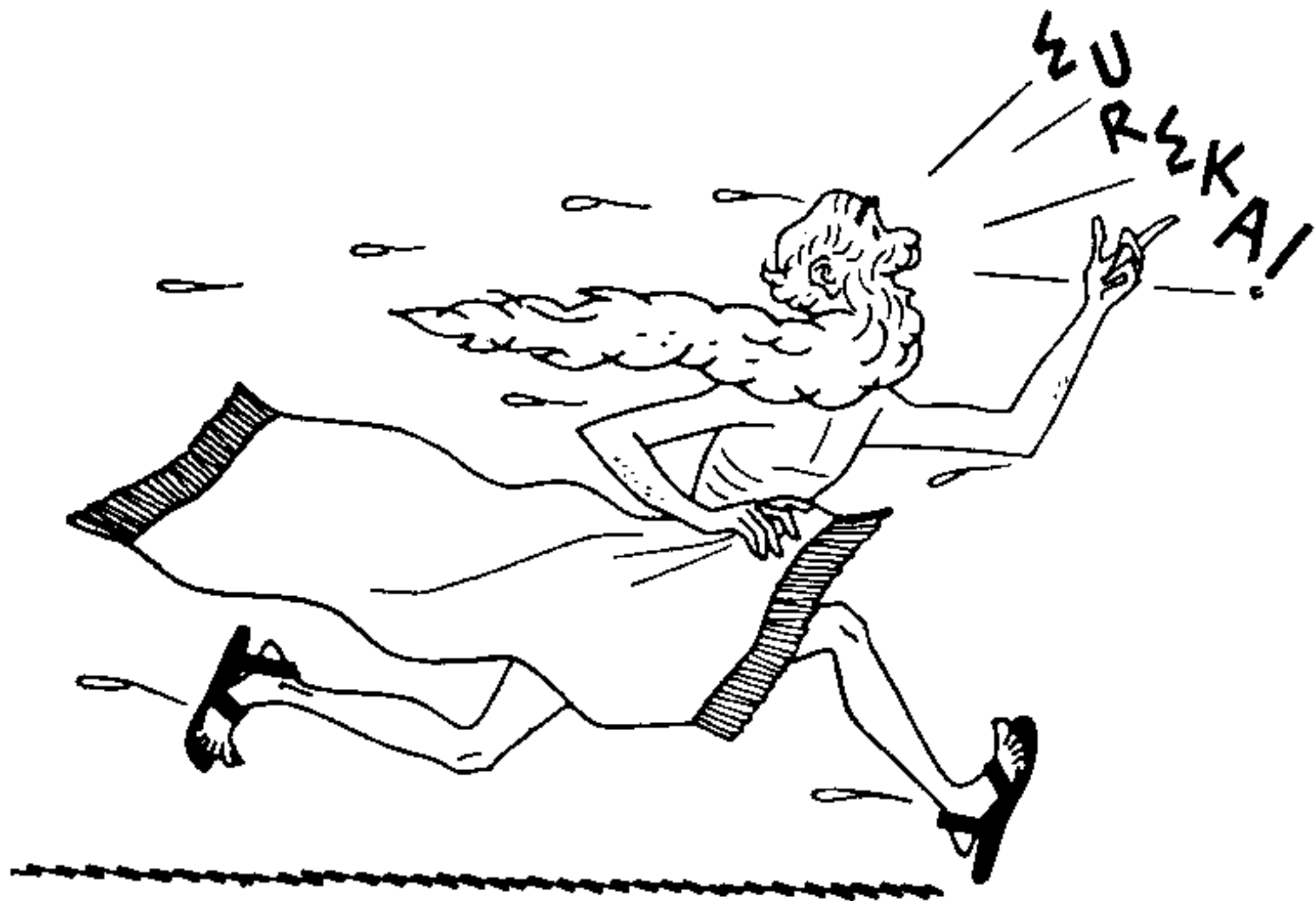
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What people think we do



What we *really* do



IX Russian-Finnish Radio Astronomy Symposium, RATAN-600 (2006)

Variability of Blazars

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Marscher, A.

Publication Date between

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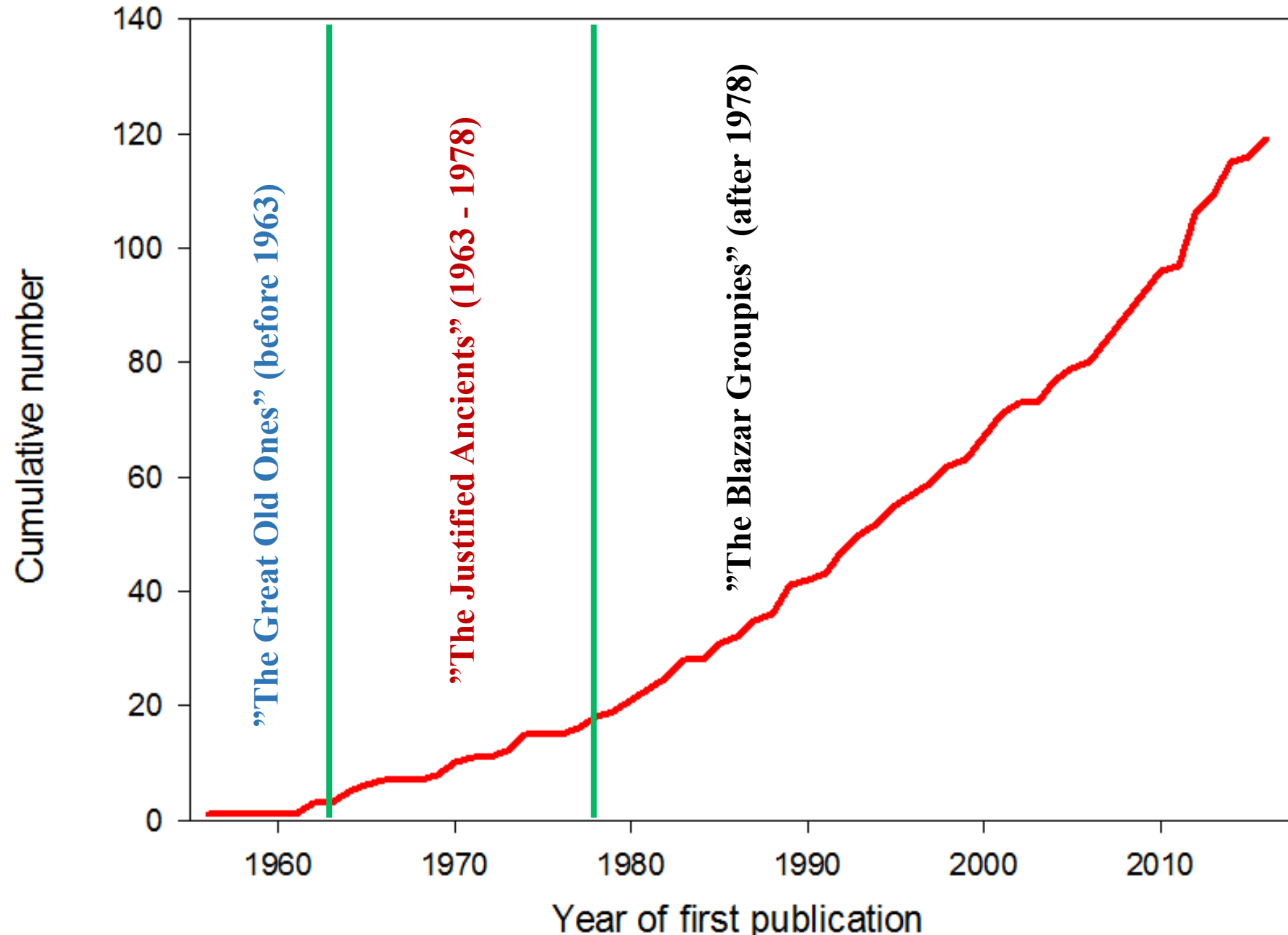
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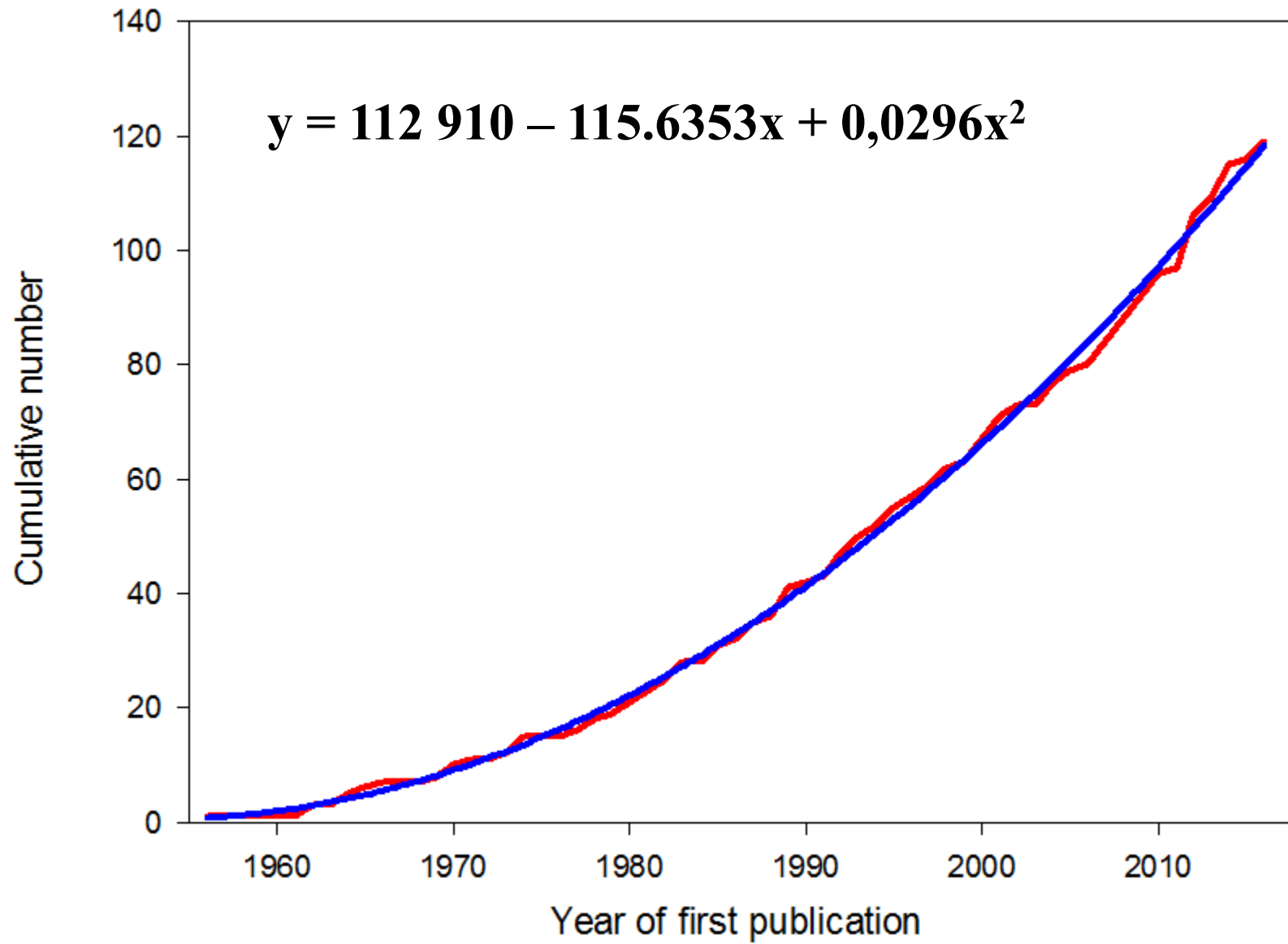
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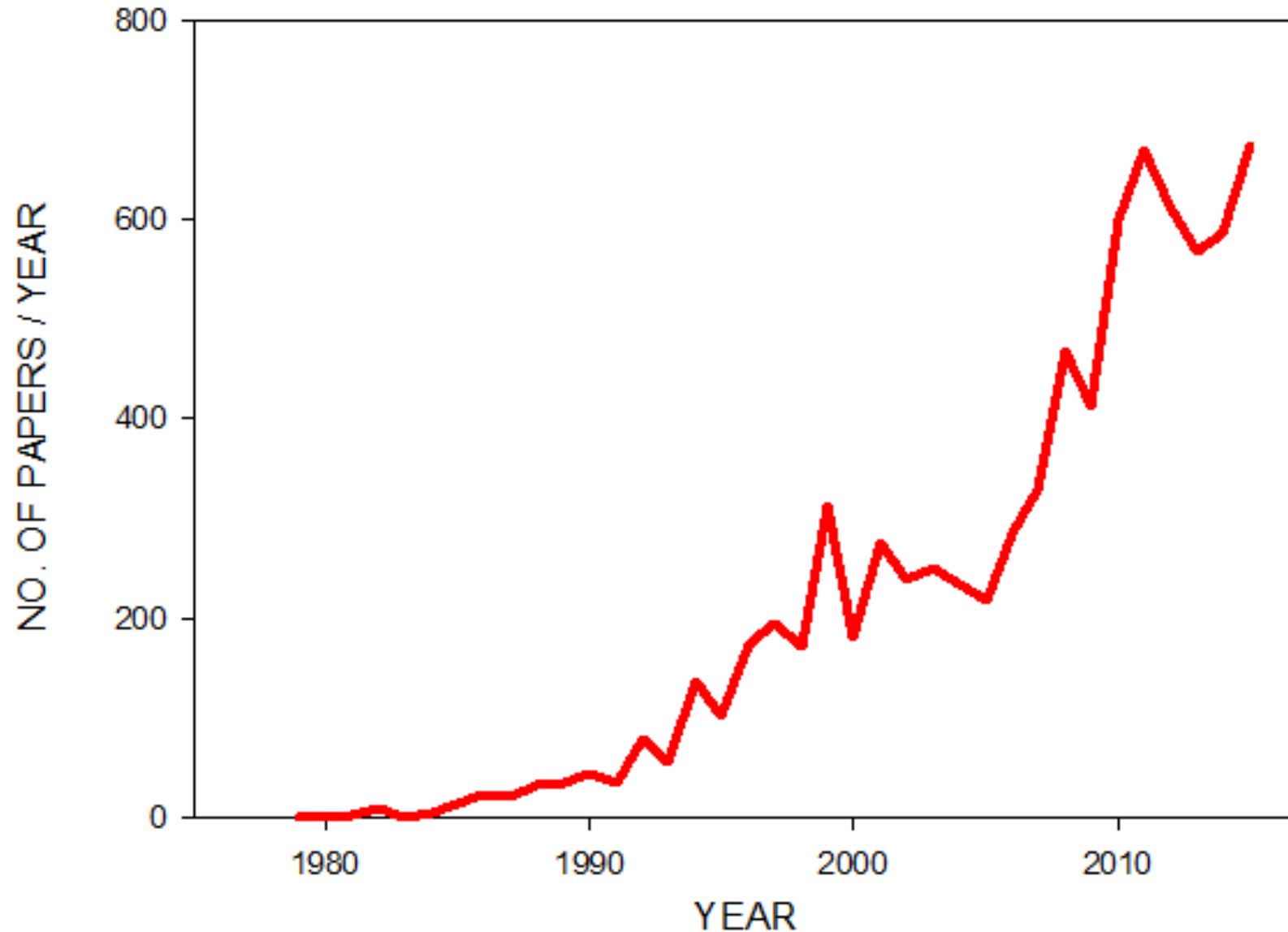
Malaga participants: year of first publication



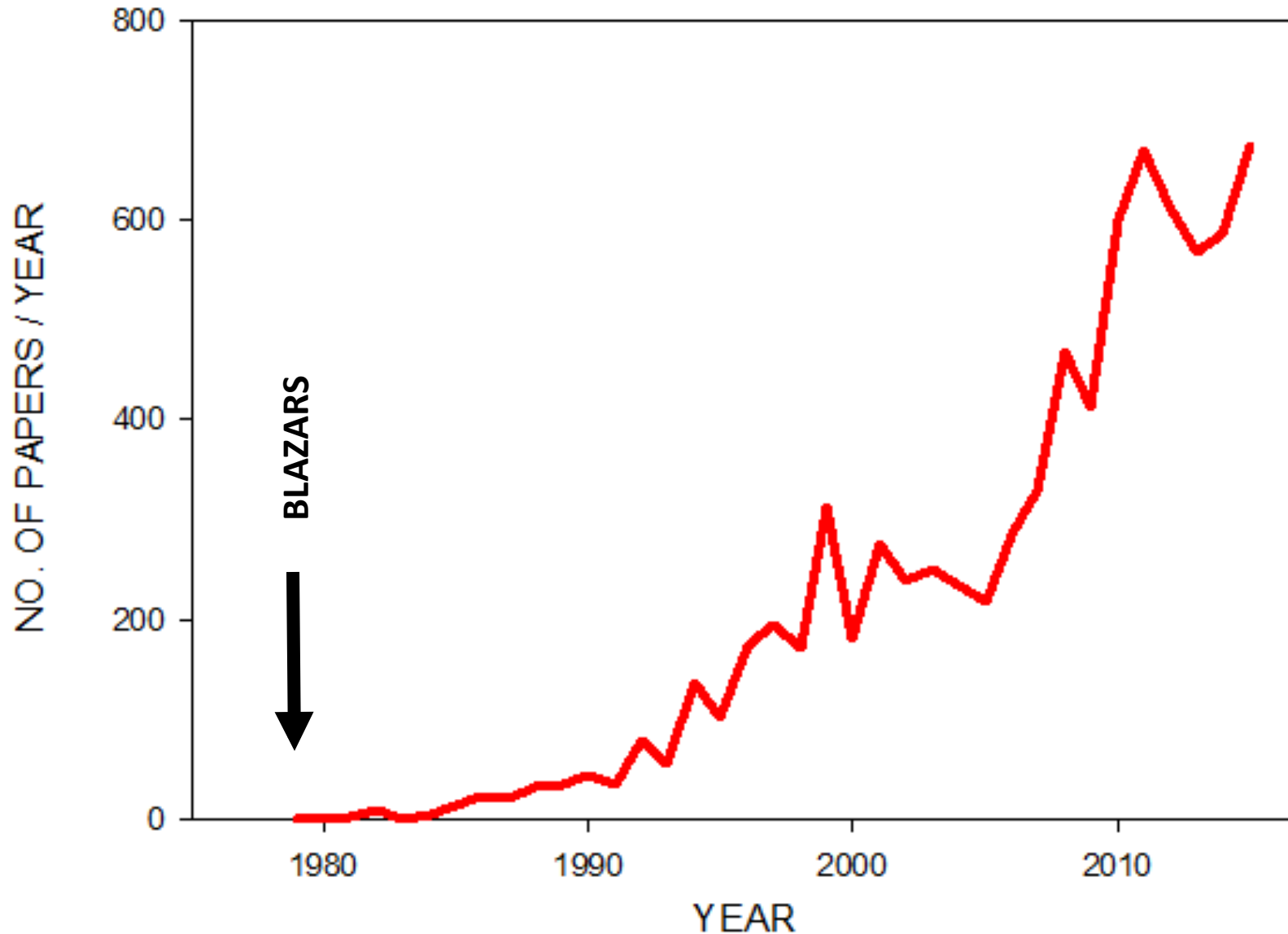


In the year 486 298 *everybody* will be a blazar researcher.

Blazar history: number of papers / year (with "blazar" in the abstract)



Blazar history: number of papers / year (with "blazar" in the abstract)



1978:
BLAZARS
(Ed Spiegel)



BISMARCK'S "AFTER-DINNER" SPEECH
"Gentlemen, there is *really* no more Turkey."

1979: FIRST USE OF "BLAZAR" (Yura Efimov)

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Title: Discovery of High Optical Polarisation of a Radio Object with Continuous Optical Spectrum 4C 47.08 (OE 400)

Authors: [Efimov, Yu. S.](#); [Shakhovskoj, N. M.](#); [Beskin, G. M.](#); [Neizvestny, S. I.](#); [Pustilnik, S. A.](#)

Publication: Astronomicheskii Tsirkulyar No.1040, p.3-5, 1979 ([ATsir Homepage](#))

Publication Date: 03/1979

Origin: AUTHOR

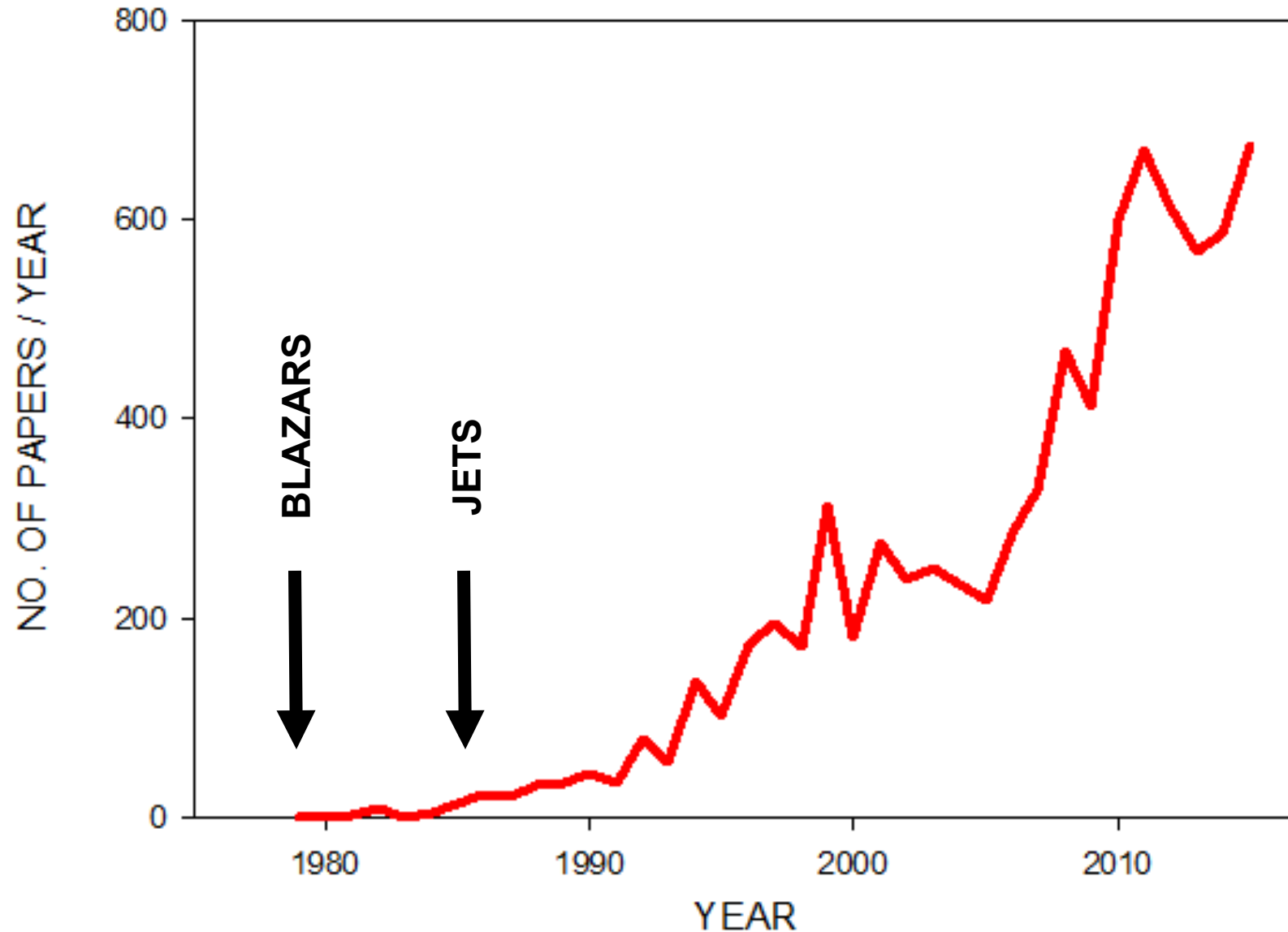
Keywords: BL LAC OBJECT, POLARISATION

Bibliographic Code: [1979ATsir1040....3E](#)

Abstract

High optical polarisation was registered in blazar 4C 47.08 (OE 400) in white light (no filter) on observations with 2.6m telescope of Crimean Astrophysics

Blazar history: number of papers / year (with "blazar" in the abstract)



1985: SHOCKED JETS

THE ASTROPHYSICAL JOURNAL, 298:114–127, 1985 November 1

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MODELS FOR HIGH-FREQUENCY RADIO OUTBURSTS IN EXTRAGALACTIC SOURCES, WITH APPLICATION TO THE EARLY 1983 MILLIMETER-TO-INFRARED FLARE OF 3C 273

ALAN P. MARSCHER

Department of Astronomy, Boston University

AND

WALTER K. GEAR

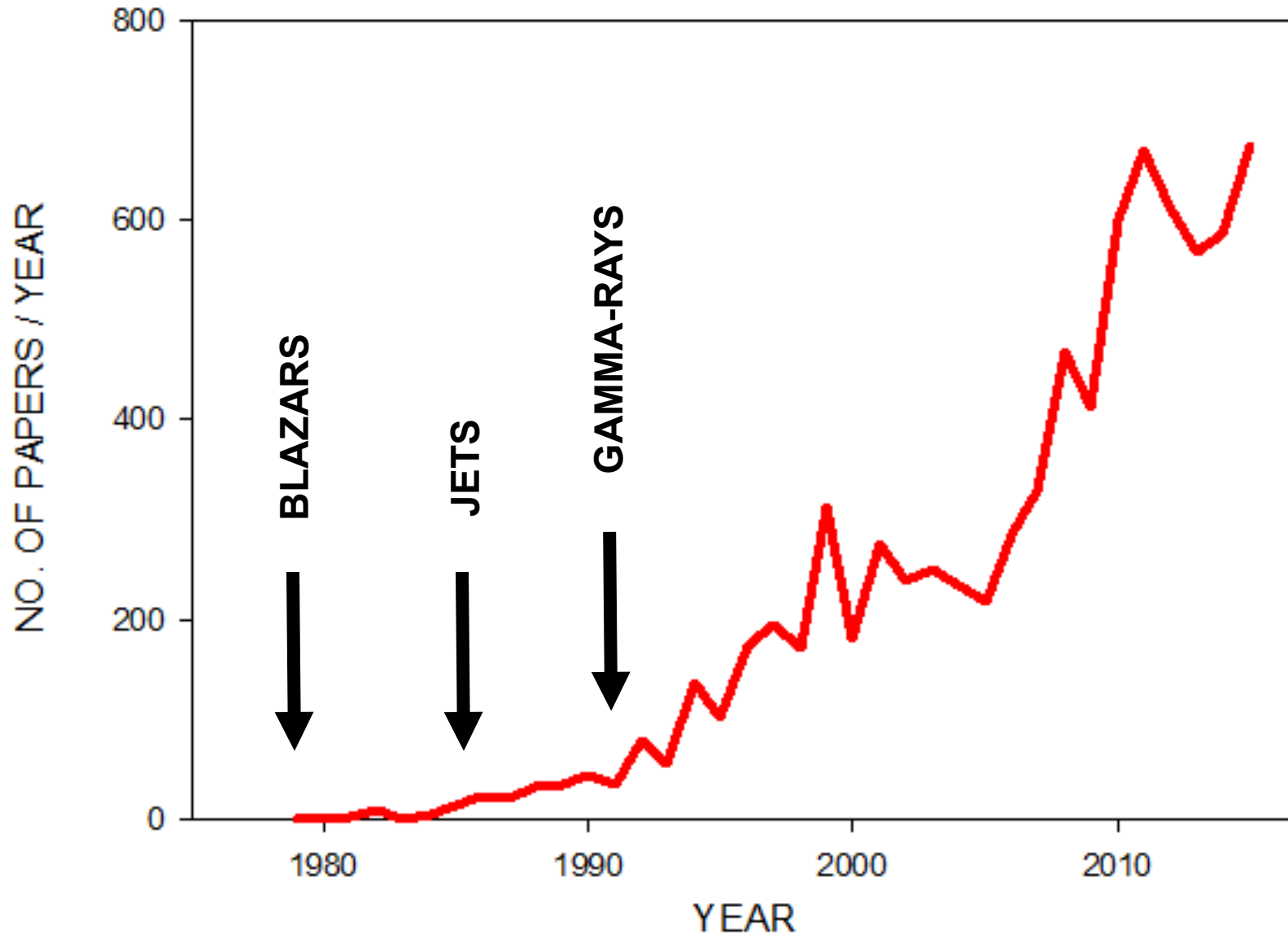
School of Physics and Astronomy, Lancashire Polytechnic

Received 1984 December 3; accepted 1985 April 26

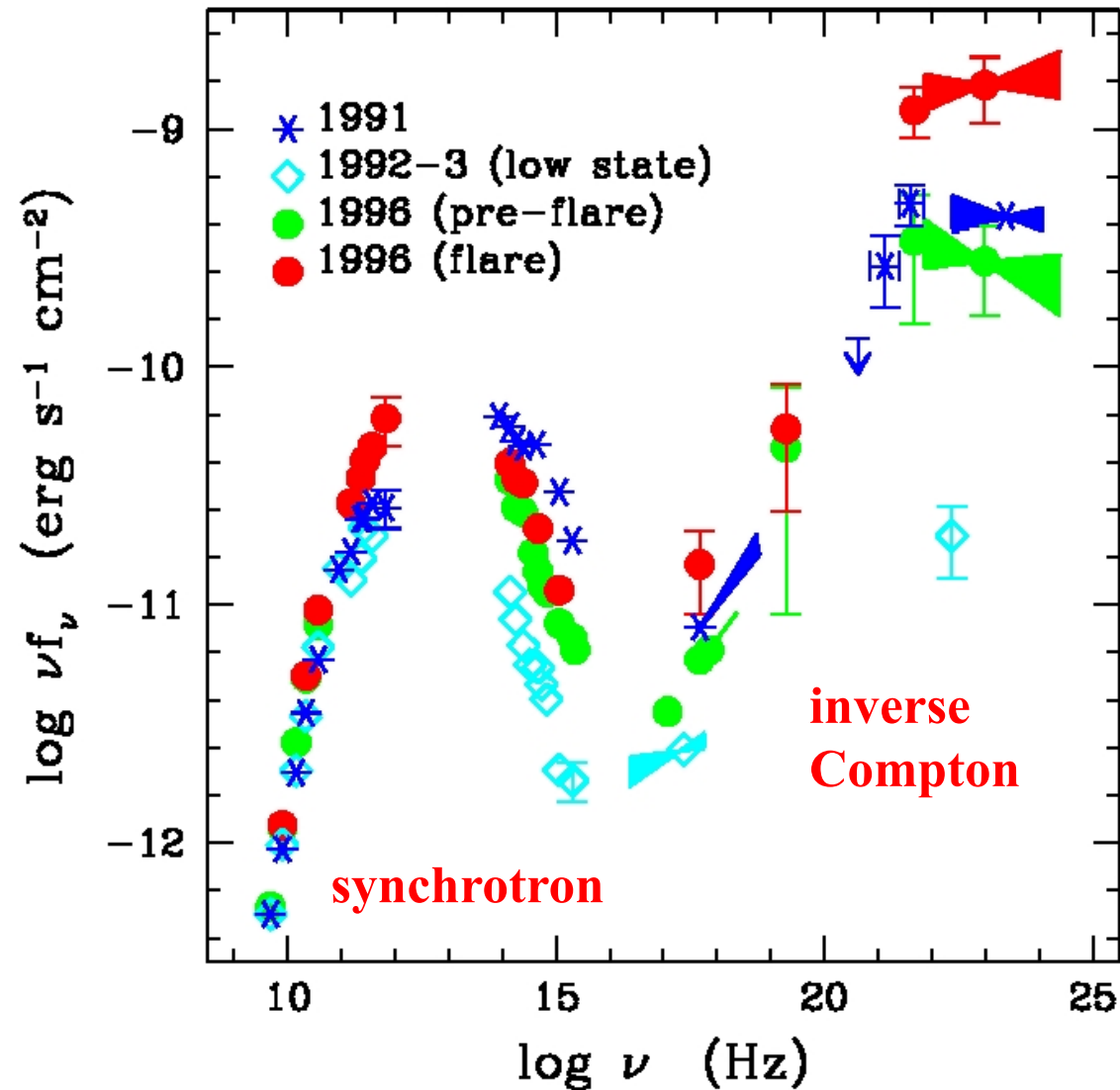
ABSTRACT

We present models for the variability of compact radio sources with specific application to the early 1983 millimeter-to-infrared flare of the quasar 3C 273. We show that the early evolution of the outburst spectrum is most readily explained if the flaring component is expanding. In our models the effects of individual events are first detected in the millimeter-to-infrared region of the spectrum, as observed in 3C 273. The models include the effects of synchrotron, Compton, and expansion losses as well as variable injection of relativistic electrons and magnetic field. We find that a model based on a uniform expanding source requires rather artificial variations of particle injection with source radius if it is to explain the 3C 273 flare data presented by Robson *et al.* The observed behavior is obtained in a more natural way by a second model in which the outburst is due to a shock wave passing through an adiabatic, conical, relativistic jet. We extend the application of this model by showing that it can reproduce many of the characteristics of general radio source variability. The model can also naturally explain the production and evolution of superluminal knots on VLBI maps and their tendency to collectively form relatively flat radio spectra, as well as the variable X-ray emission observed from 3C 273 and other similar sources. The minimum time scale of variability can be as short as ~ 1 day, despite the rather large distance (≥ 1 pc) of the shock from the central energy source of the quasar.

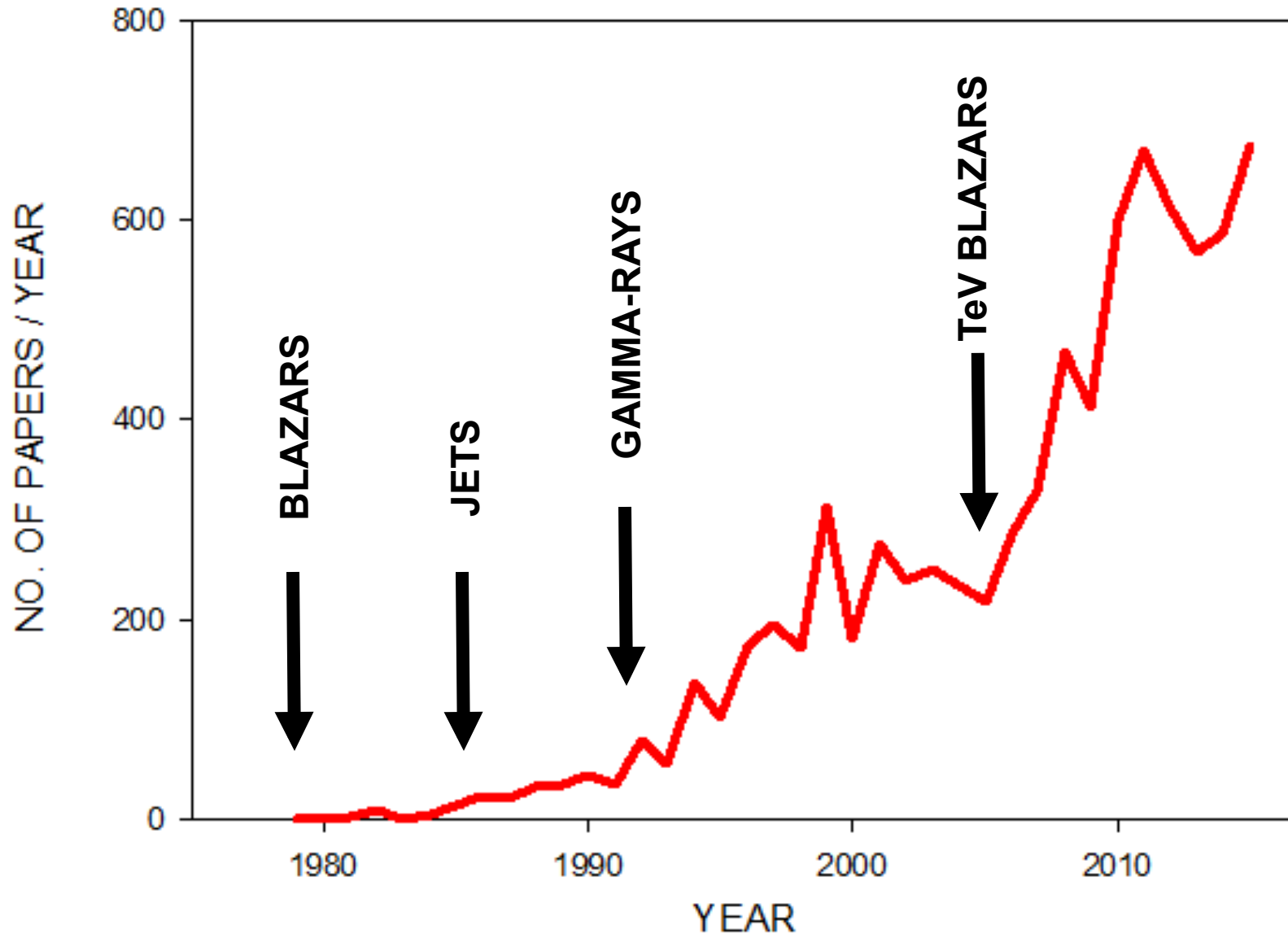
Blazar history: number of papers / year (with "blazar" in the abstract)



1991: EGRET AND GAMMA-RAYS



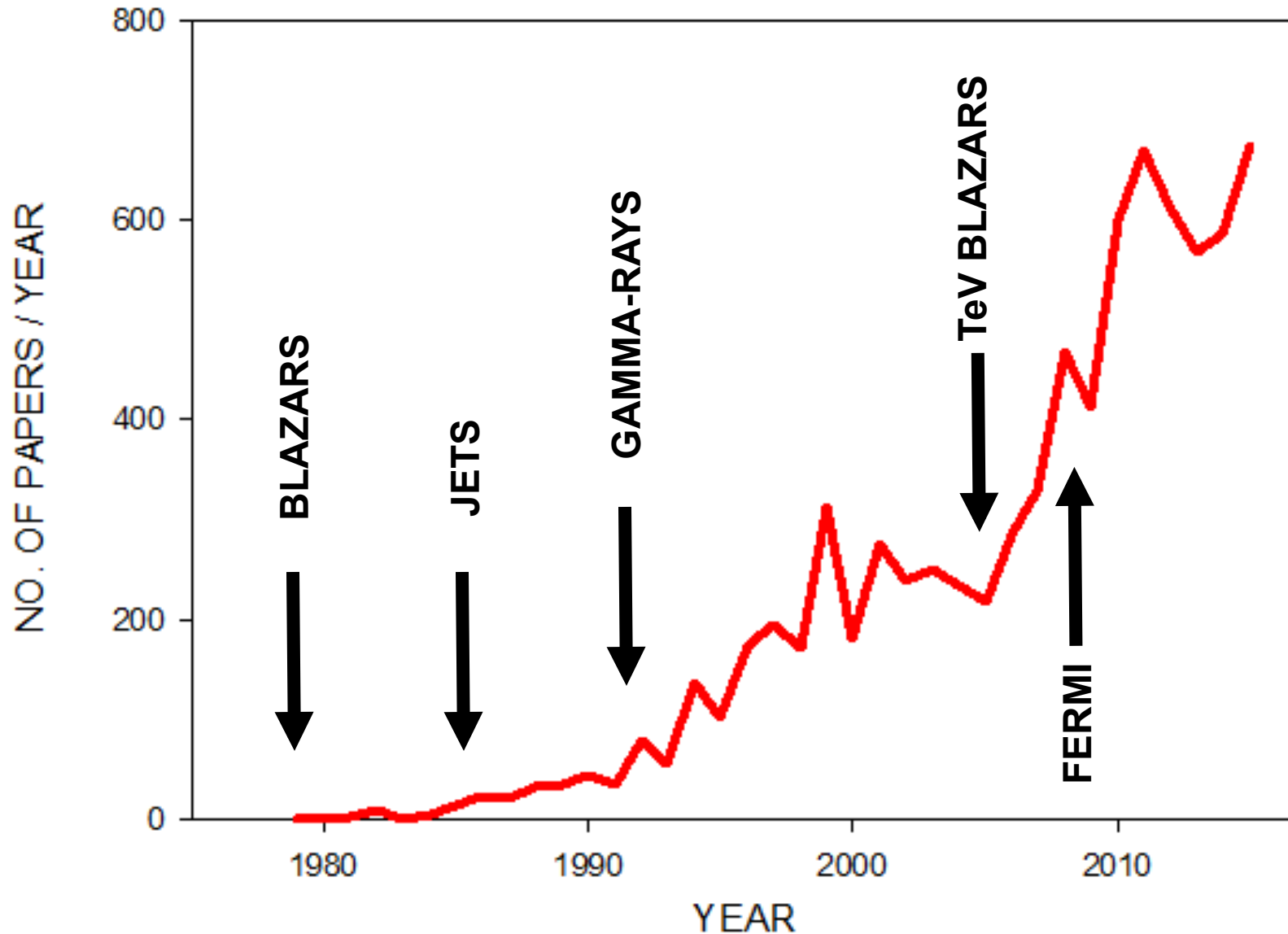
Blazar history: number of papers / year (with "blazar" in the abstract)



1994: CHERENKOV TELESCOPES



Blazar history: number of papers / year (with "blazar" in the abstract)



1998: FERMI



Meg Urry 2007: "Luckily, nobody remembers what we said 25 years ago, and the old acetates have decayed."

1984: QUESTIONS!

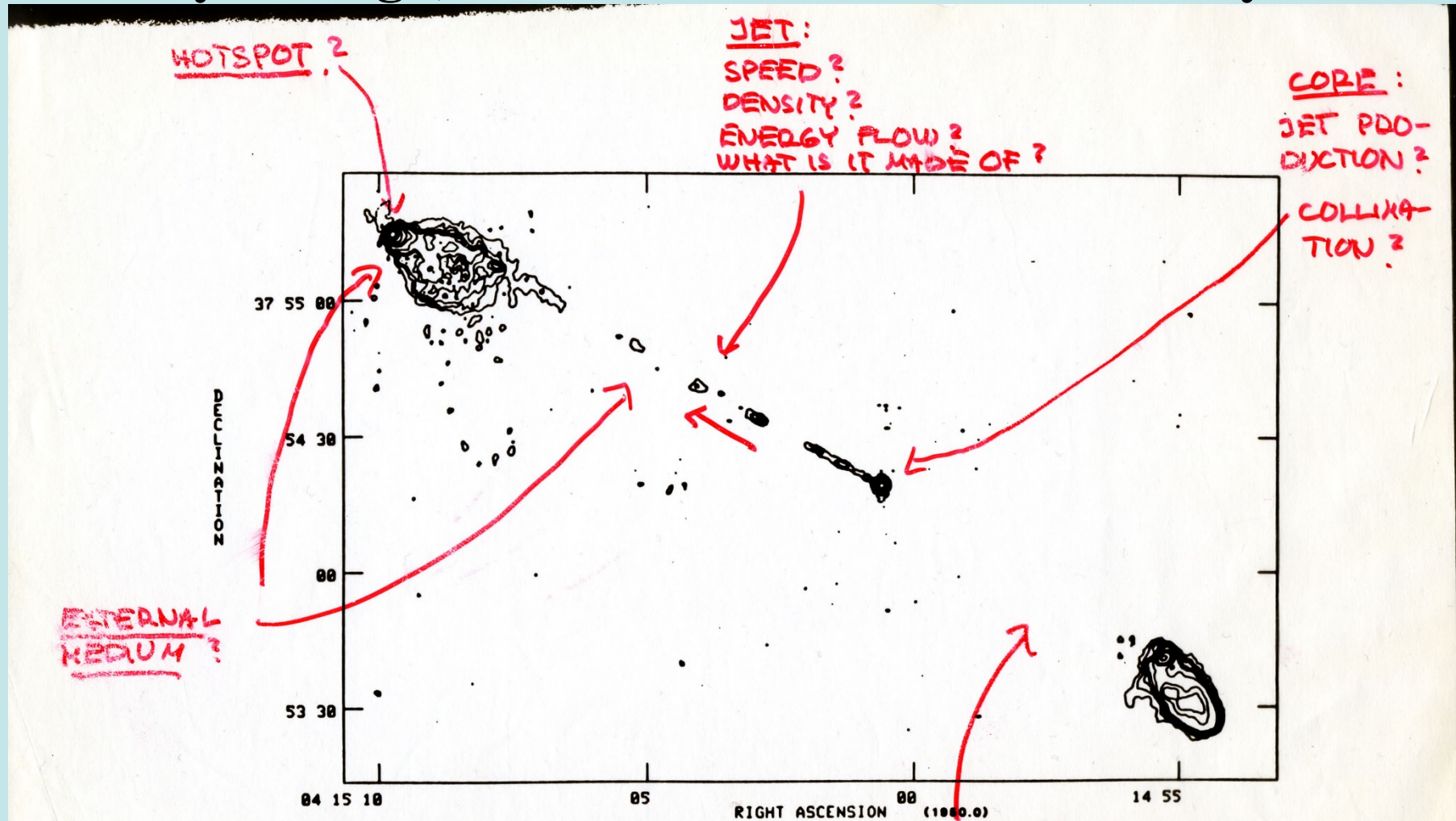


FIG. 1.—Total intensity map of 3C 111 at 1.4 GHz, with $1''.34 \times 1''.20$ resolution. The bright central component is coincident with the nucleus of the optical galaxy. The contour levels are $-3.7, -1.2, 1.2, 2.5, 3.7, 4.9, 6.1, 9.8, 22, 37, 86, 220$, and 470 mJy per beam.

(VUODELTA 1984...)

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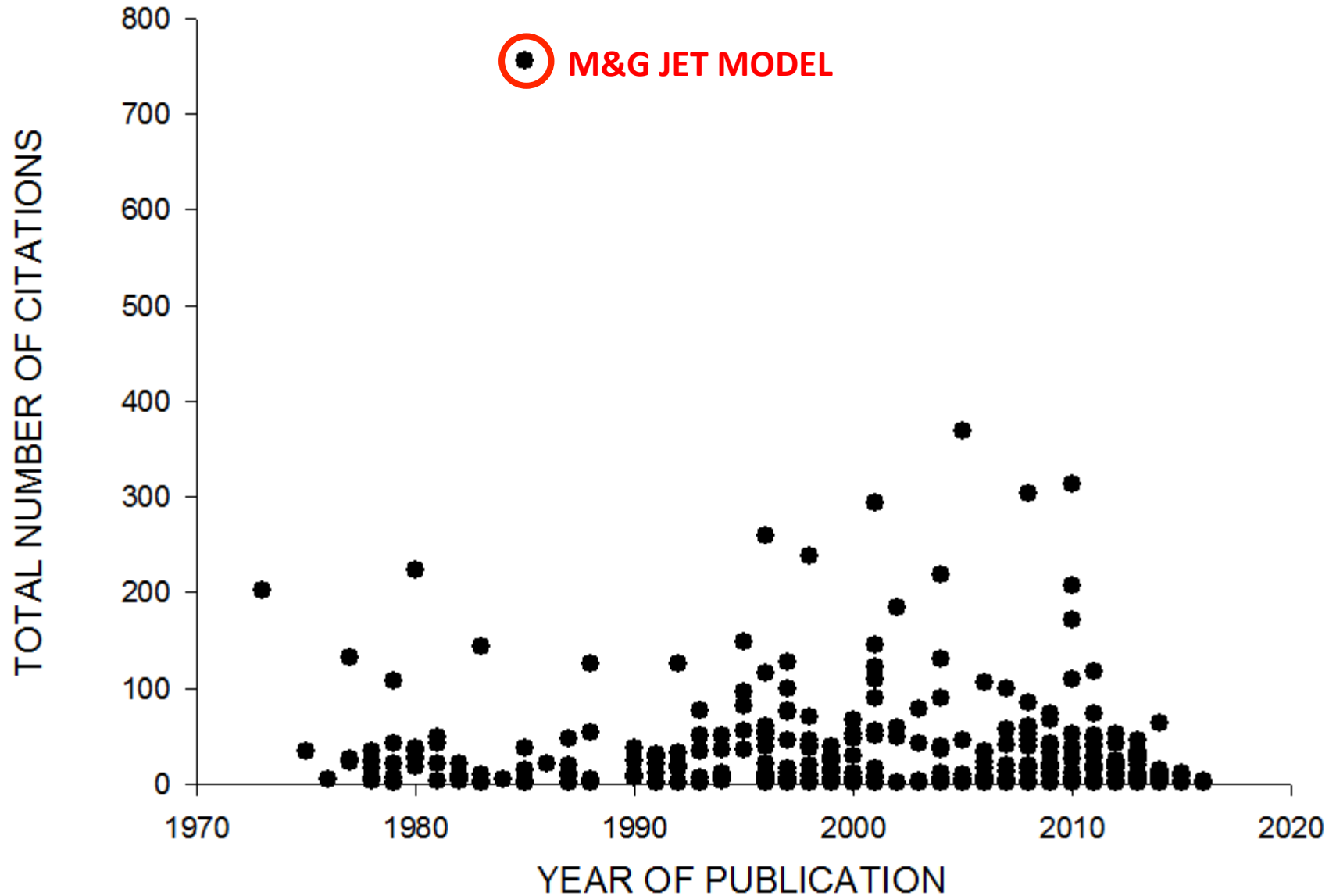
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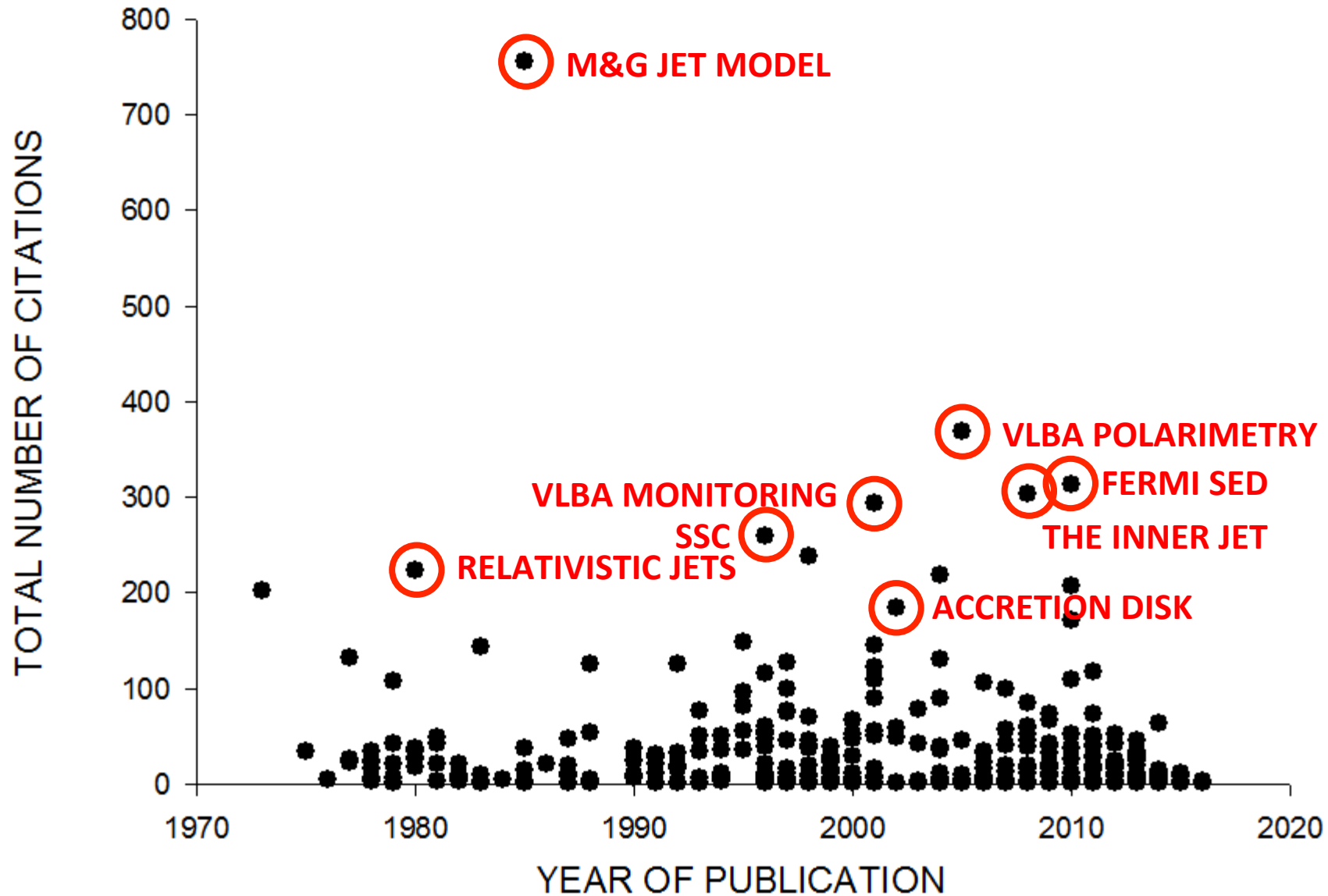
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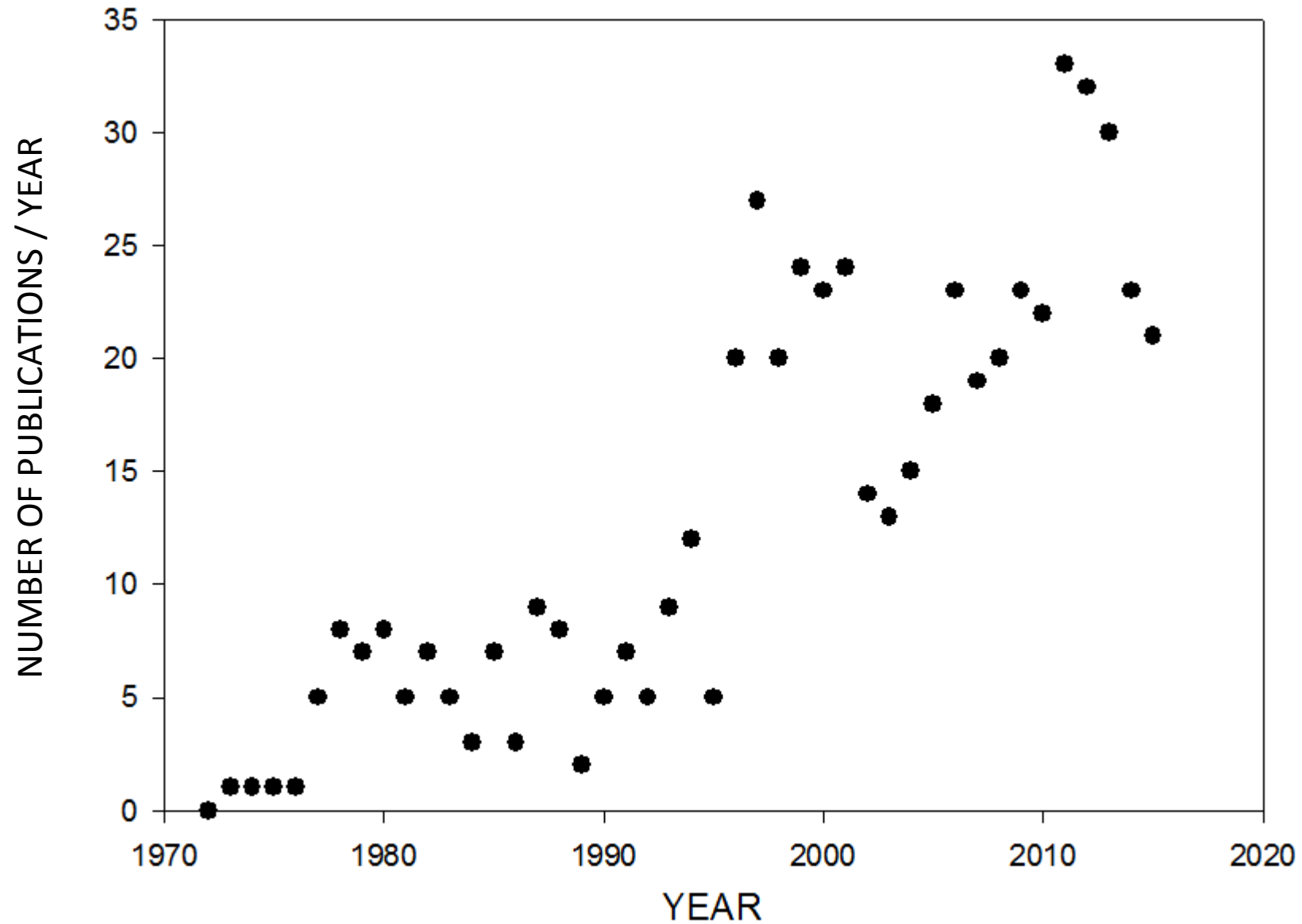
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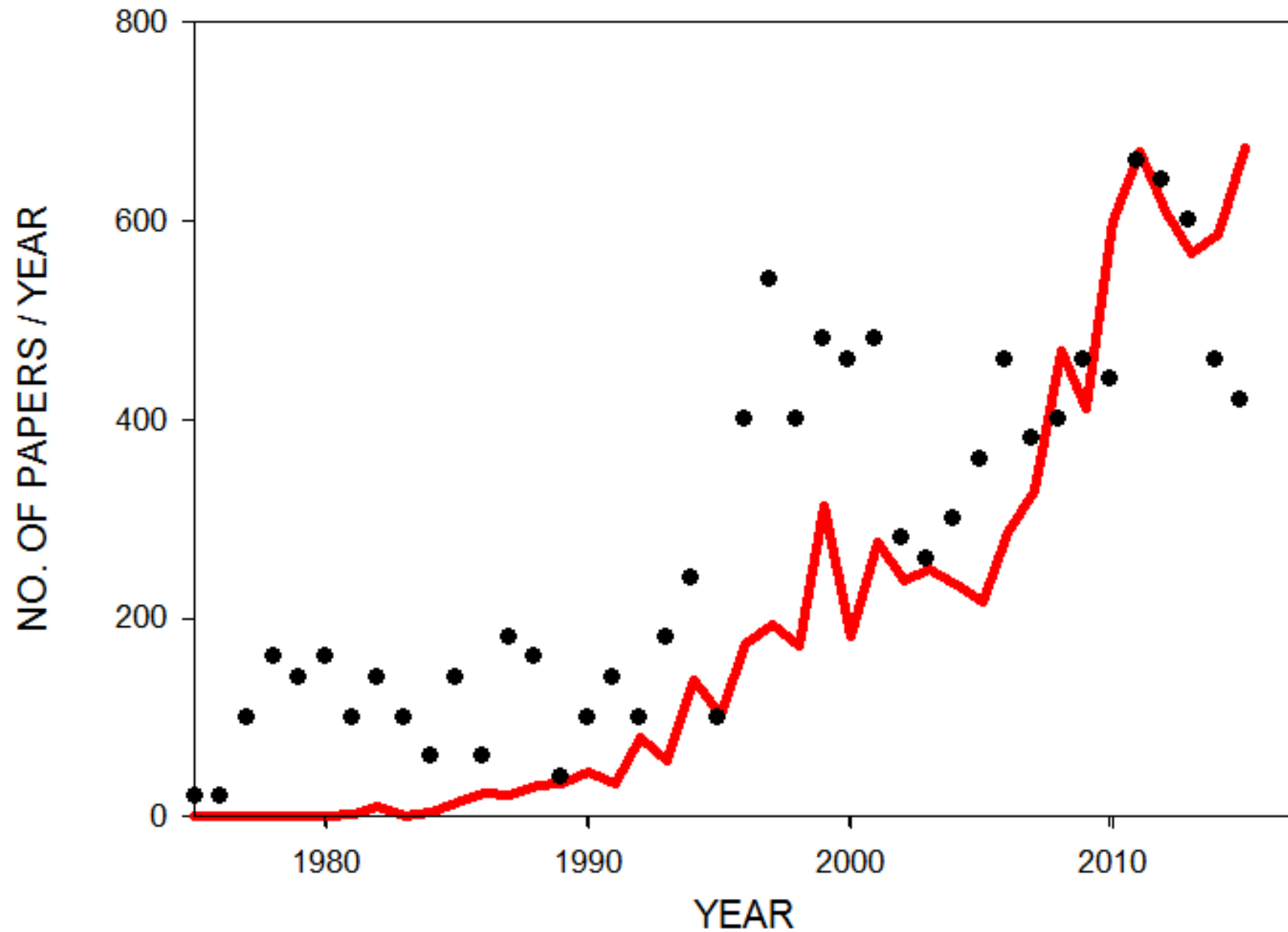
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A life in science: Alan's papers and citations

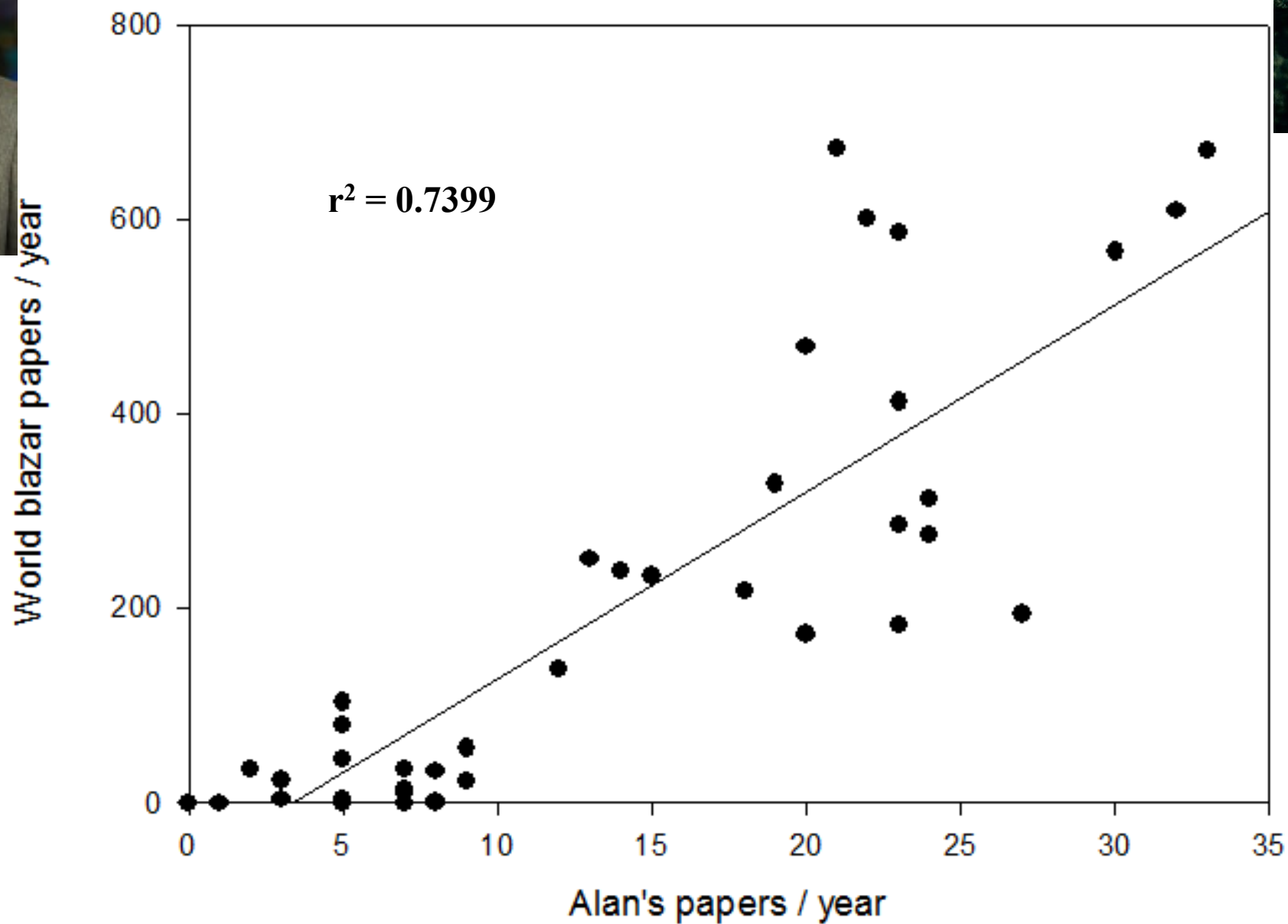


Alan's publications compared to all blazar publications

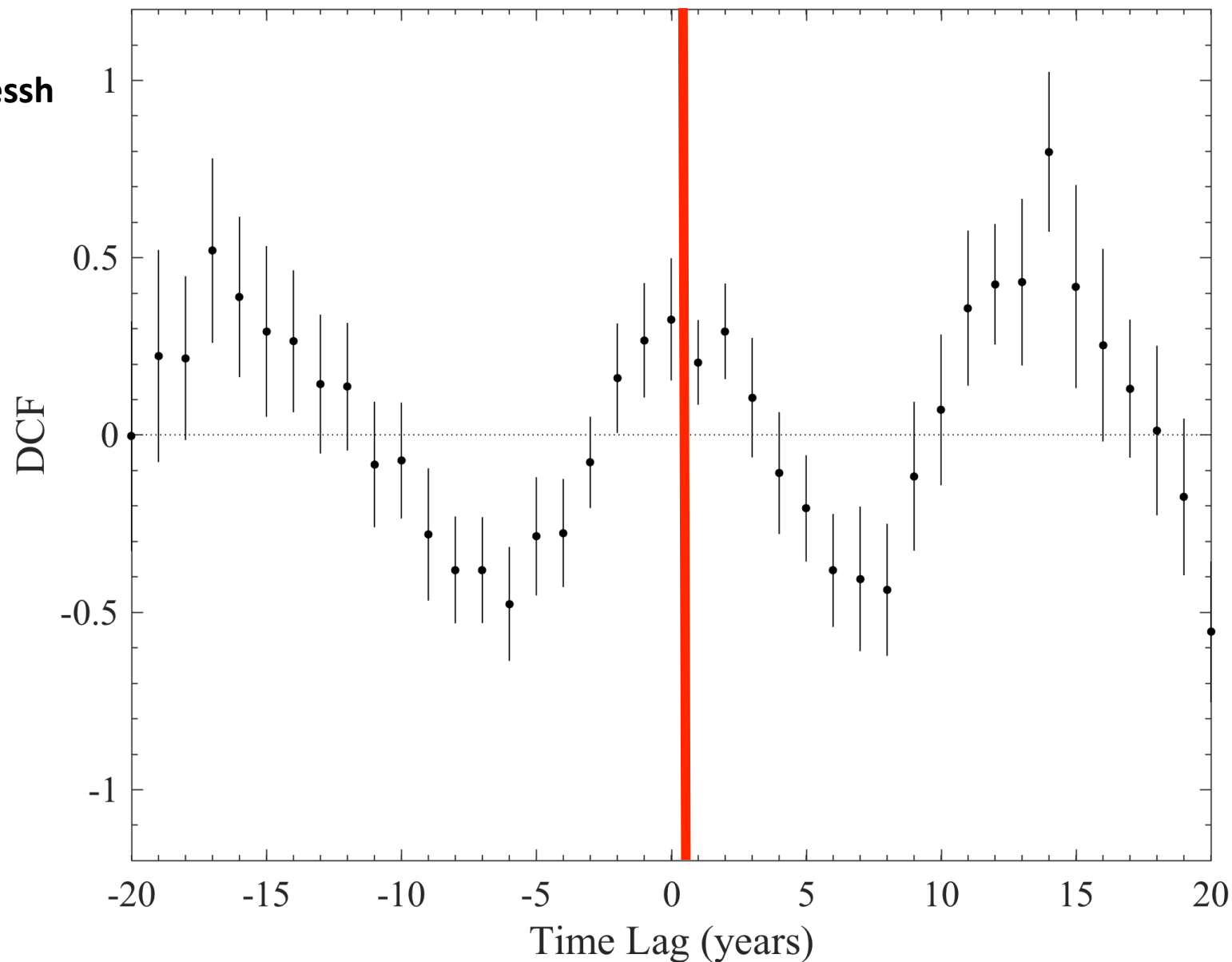




Alan: a LEADER or a LEMMING?



[Courtesy Dr. Venkatesh
Ramakrishnan]



Alan leads the world by 0.6 years. *He da Boss!*

**A randomized
sample:**

34 Malaga participants

**17 in FOA category
(Friends Of Alan =
joint papers)**

**17 in NONFOA (= no
joint papers)**

**ranked by the number
of citations (lifetime)**

19146	231
5198	192
4931	120
3742	117
3652	88
3211	80
3085	64
2509	20
1370	19
1338	17
1253	12
1074	7
964	5
808	4
524	2
426	2
313	0

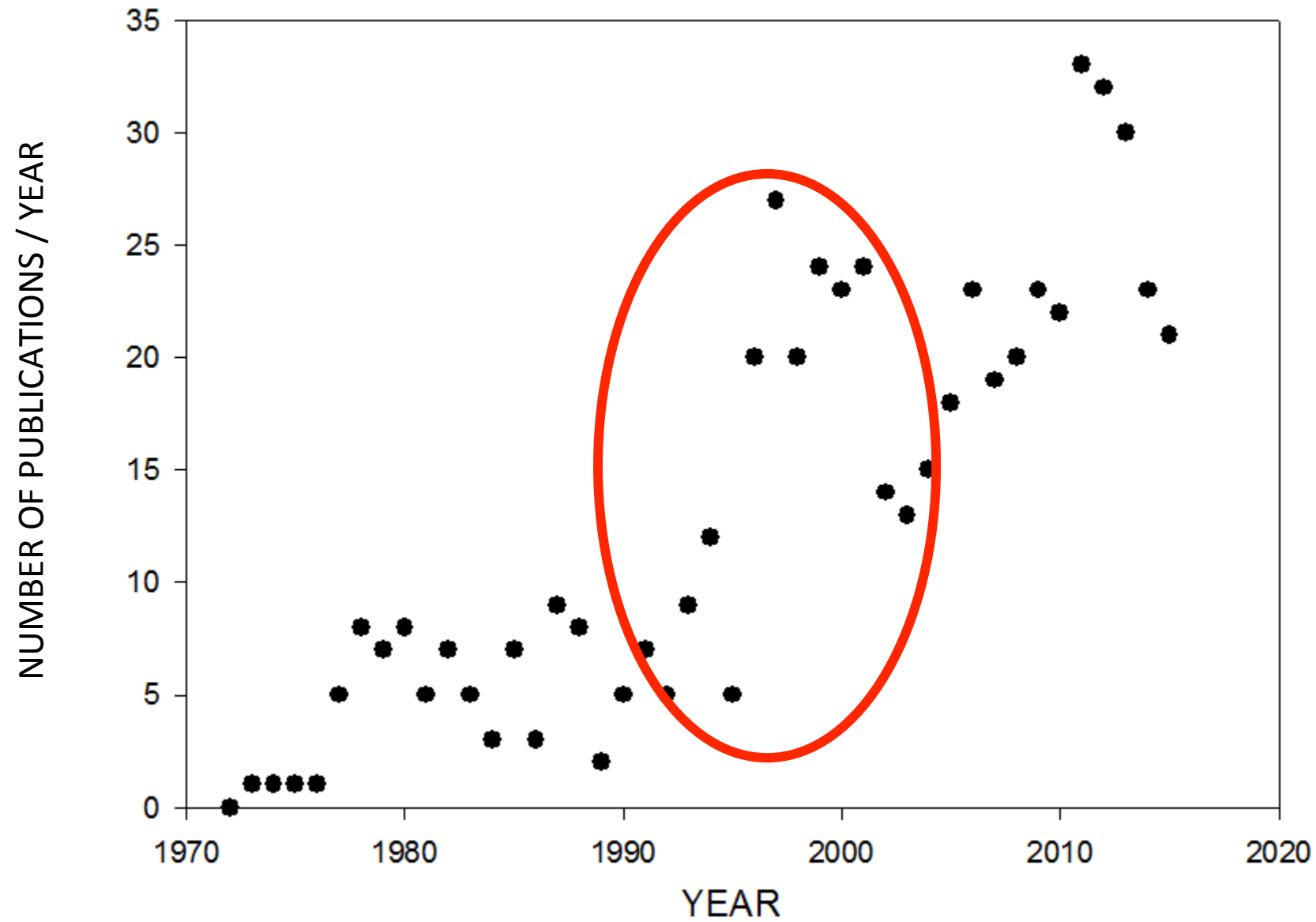
RESULTS:

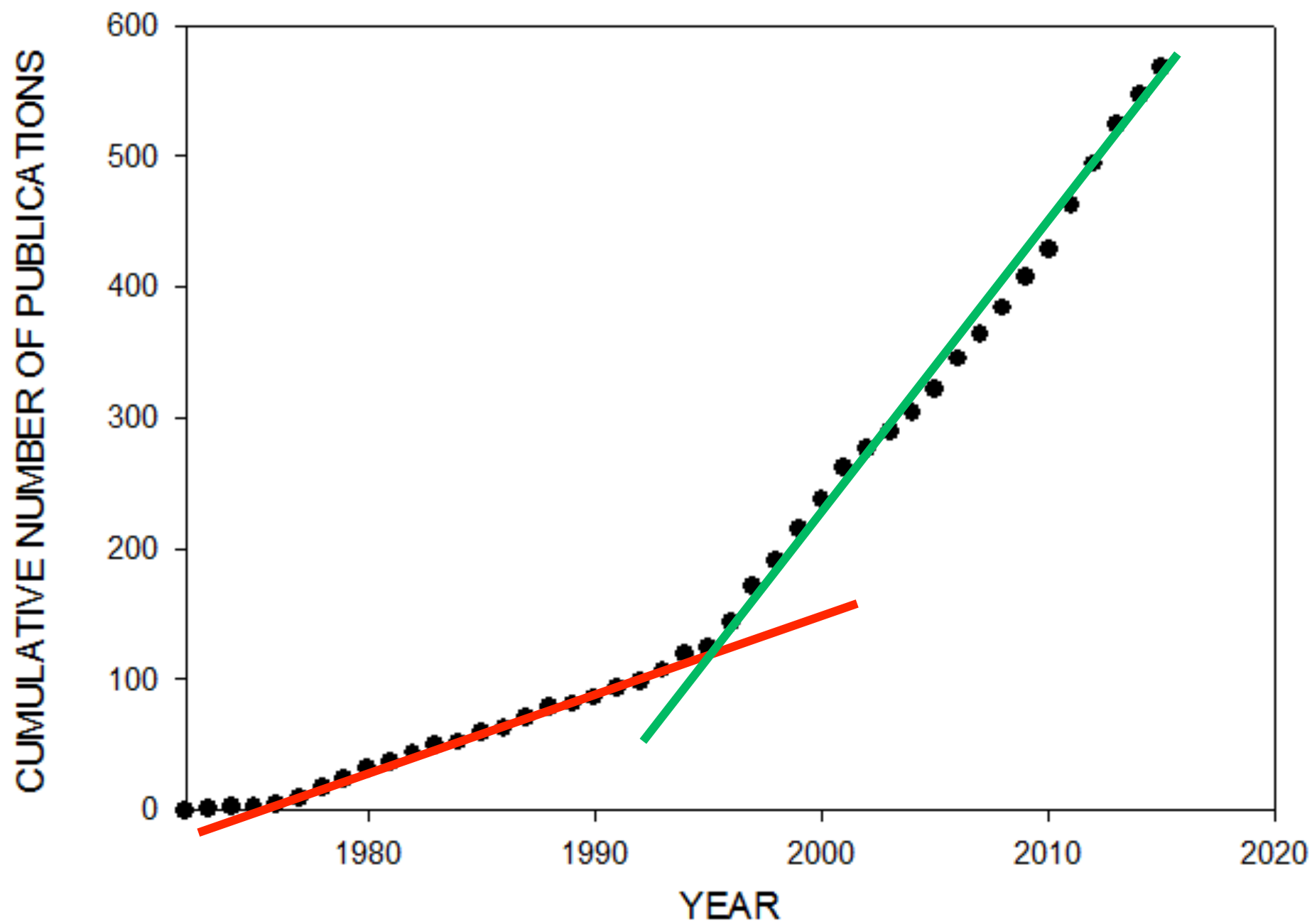
**the populations are
different, $P > 99.99\%$**

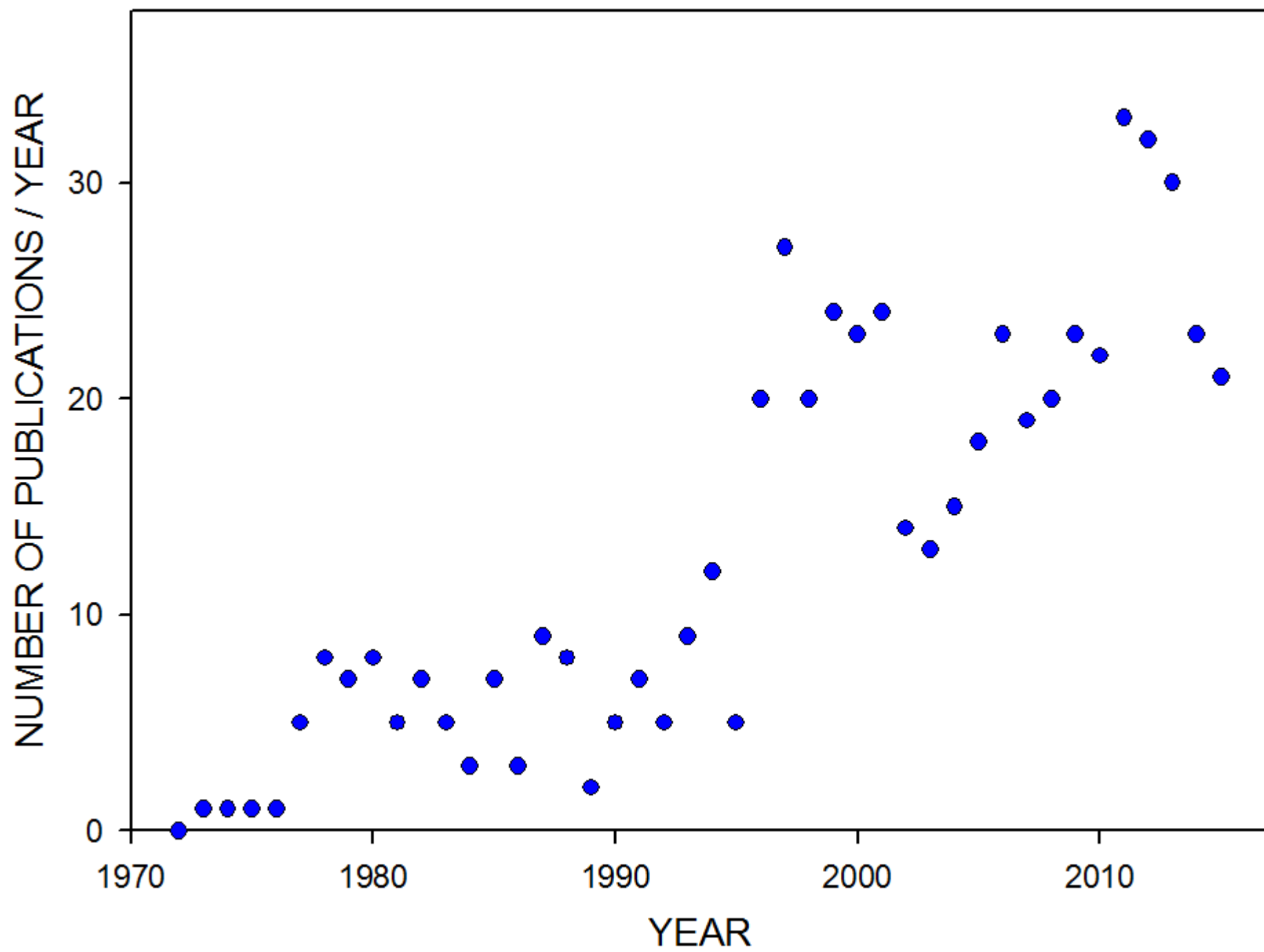
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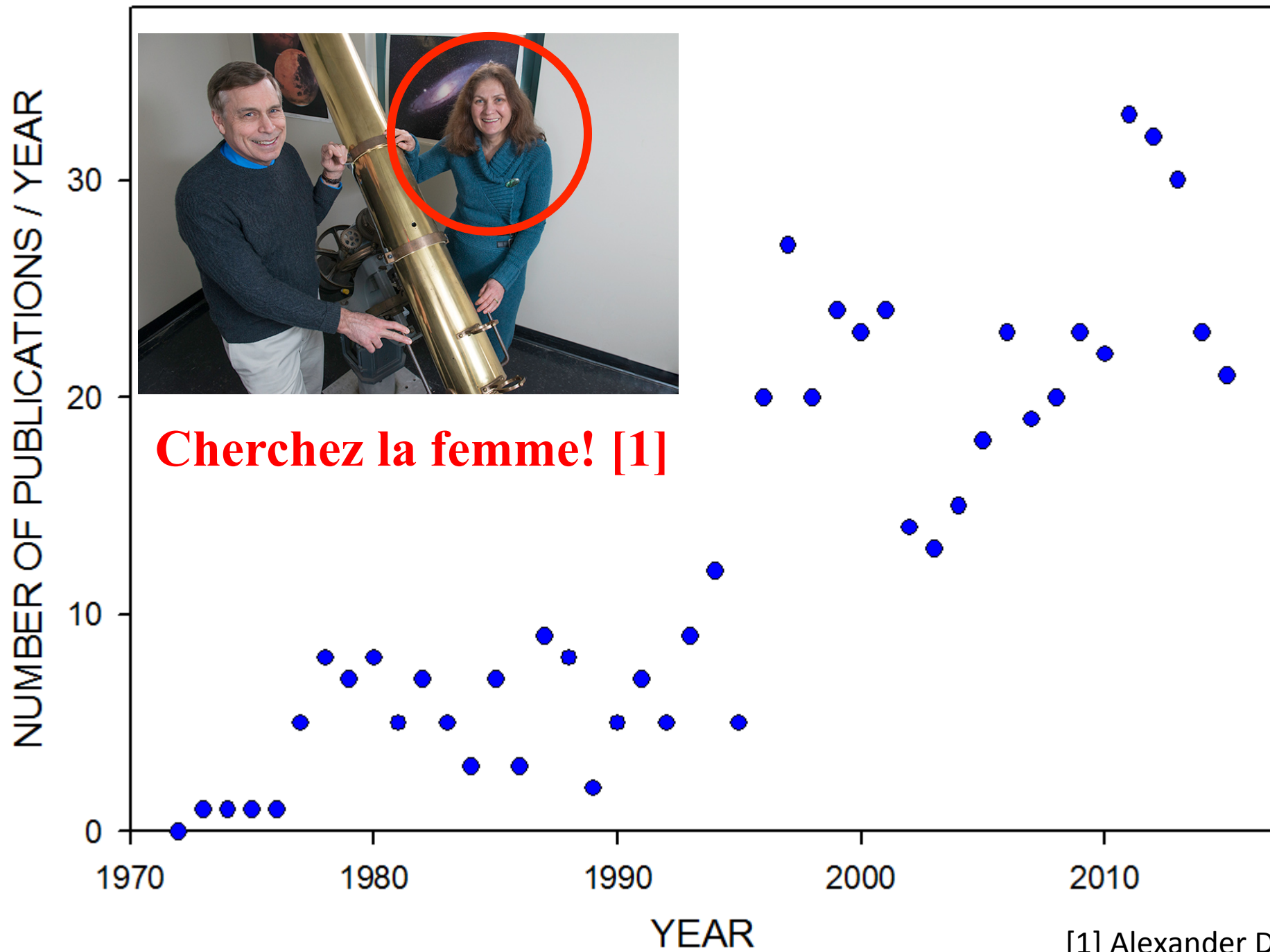
**It pays to be friends
with Alan.
(He da Boss Pt. 2)**

A life in science: Alan's papers

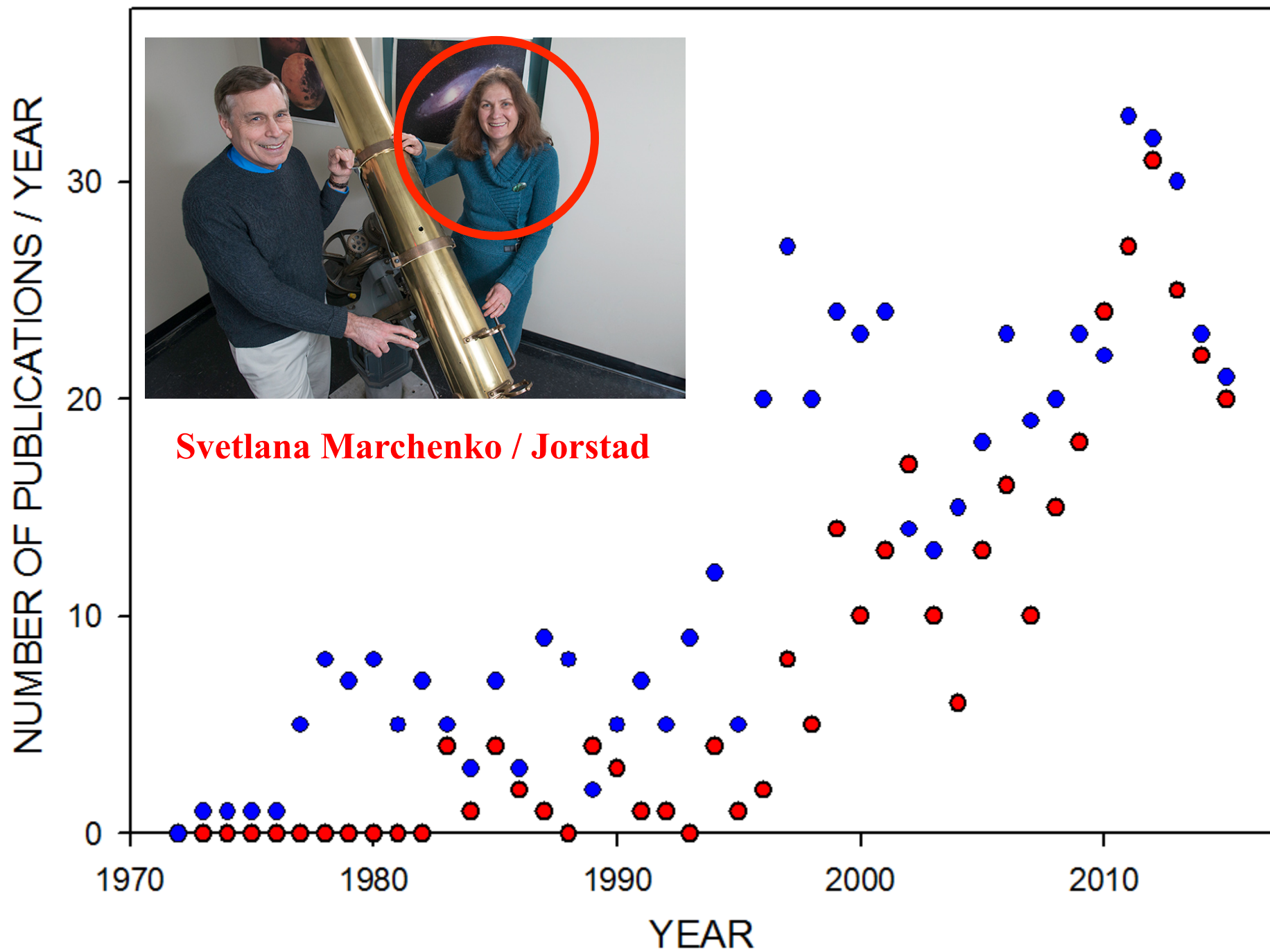


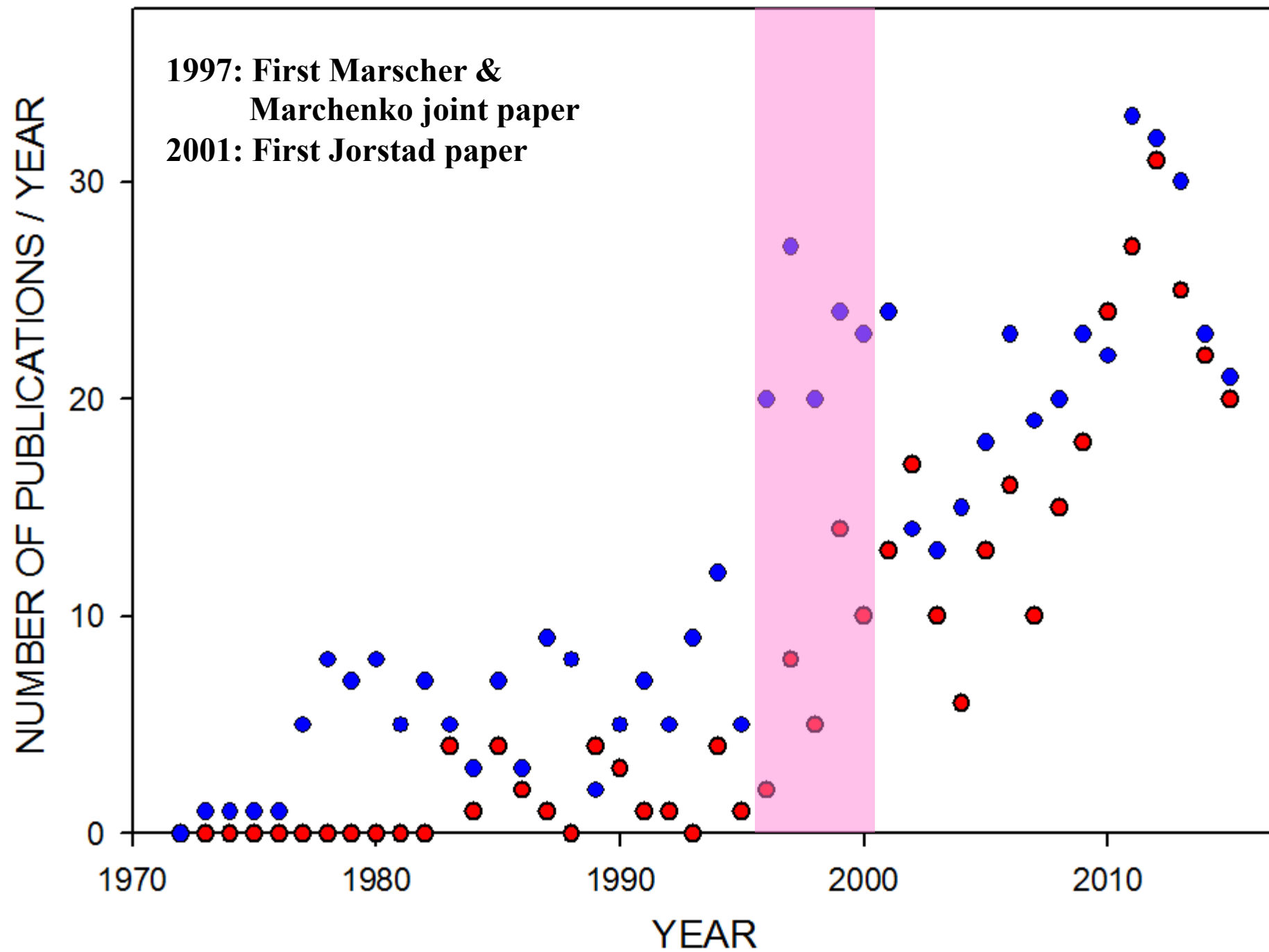


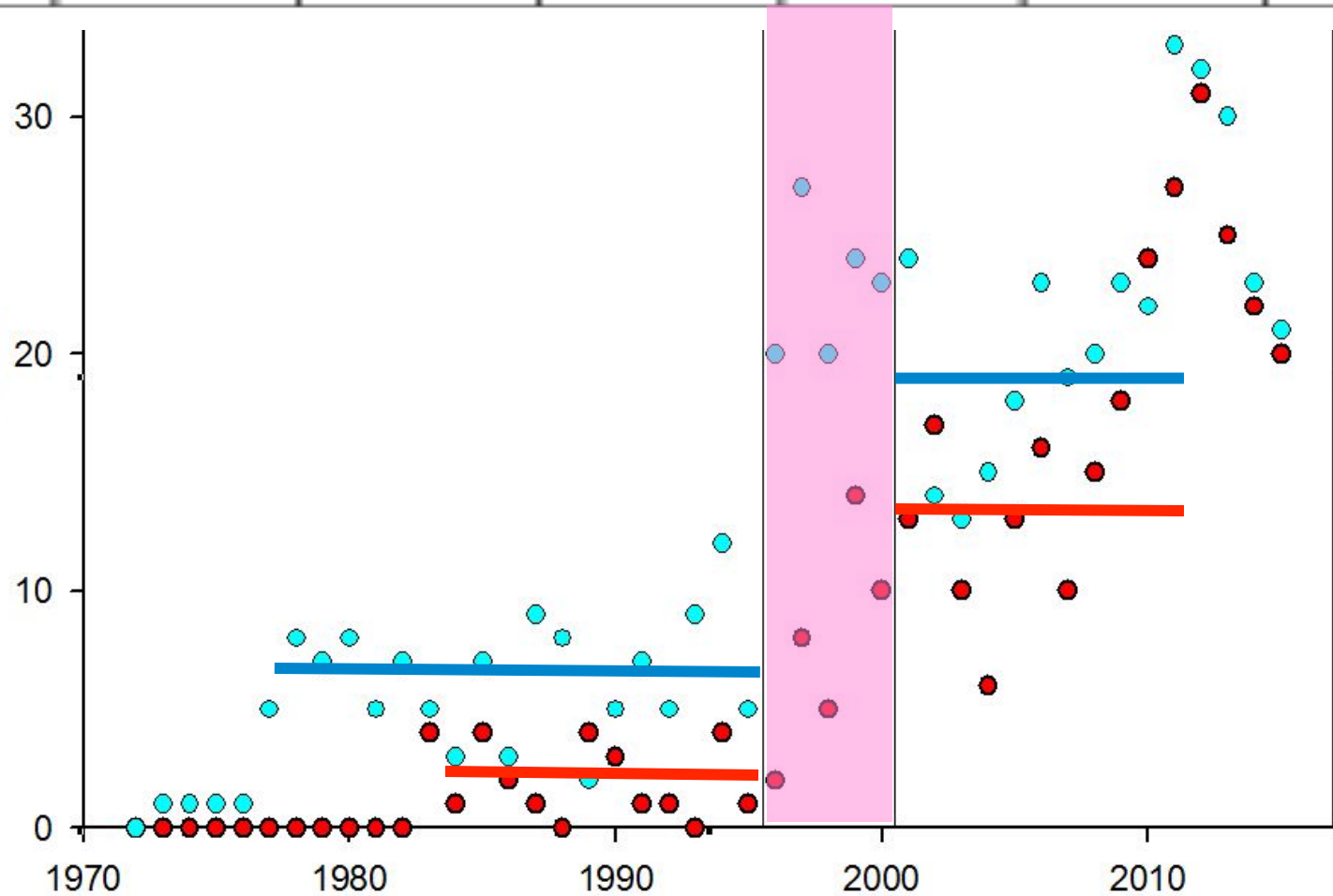
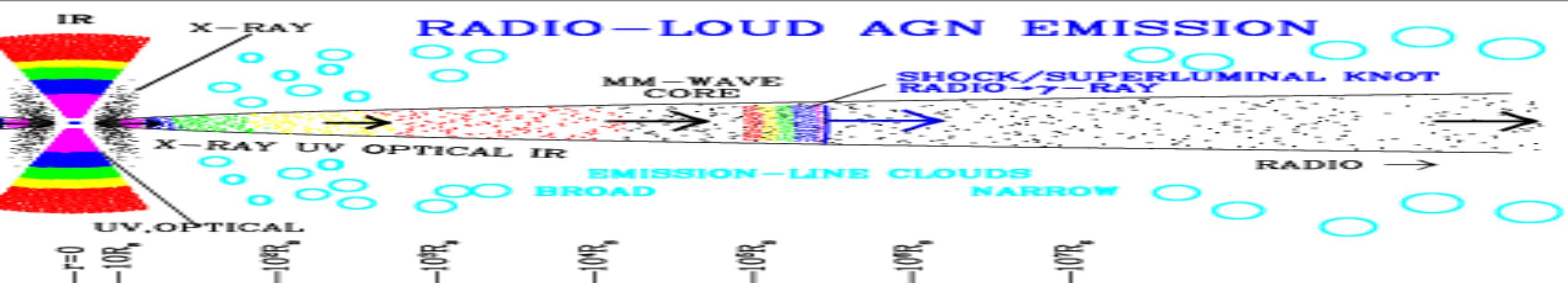




[1] Alexander Dumas *père* 1854







Goethe 1828:

*„Das Ewig-Weibliche
zieht uns hinan.“*

F a u s t.

Eine Tragödie.

von

G o e t h e.

T ü b i n g e n.

in der J. G. Cotta'schen Buchhandlung.

1808.

Sex is good for your science.