

Yaşam Araştırmalarının Kökeni: Bir Bibliyometrik Yaklaşım

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ODTÜ Astrobiyoloji Konferansında ne işi var?

- ◎ NASA Astrobiyoloji Enstitüsü
- ◎ Earth-Life Science Institute, Japonya
 - ELSI Origins Network (EON)



1.

NASA Astrobiyoloji Enstitüsü

Scientometrics
DOI 10.1007/s11192-015-1576-8

**Collaborative interdisciplinary astrobiology research:
a bibliometric study of the NASA Astrobiology Institute**

Zehra Taşkın¹ · Arsev U. Aydinoglu²





“

Araştırma fonları yerinde
kullanılıyor mu?

Astrobiyoloji araştırmalarına katkı
sunan kurumlardan biri miyiz?

Yakın gelecekte olabilir miyiz?

Kimleri takip etmeli?

...

Nasıl Anlayacağız?

◎ Bibliyometri

- ◎ Matematiksel ve istatistiksel yöntemlerin kitaplar ve diğer iletişim ortamlarına uygulanması (Pritchard, 1969)
- ◎ Niceliksel
- ◎ Tek başına kullanıldığında sorunlu
 - ◎ Neden?
- ◎ Nitel ölçüm yapmak da çok zor
- ◎ Alternatif?



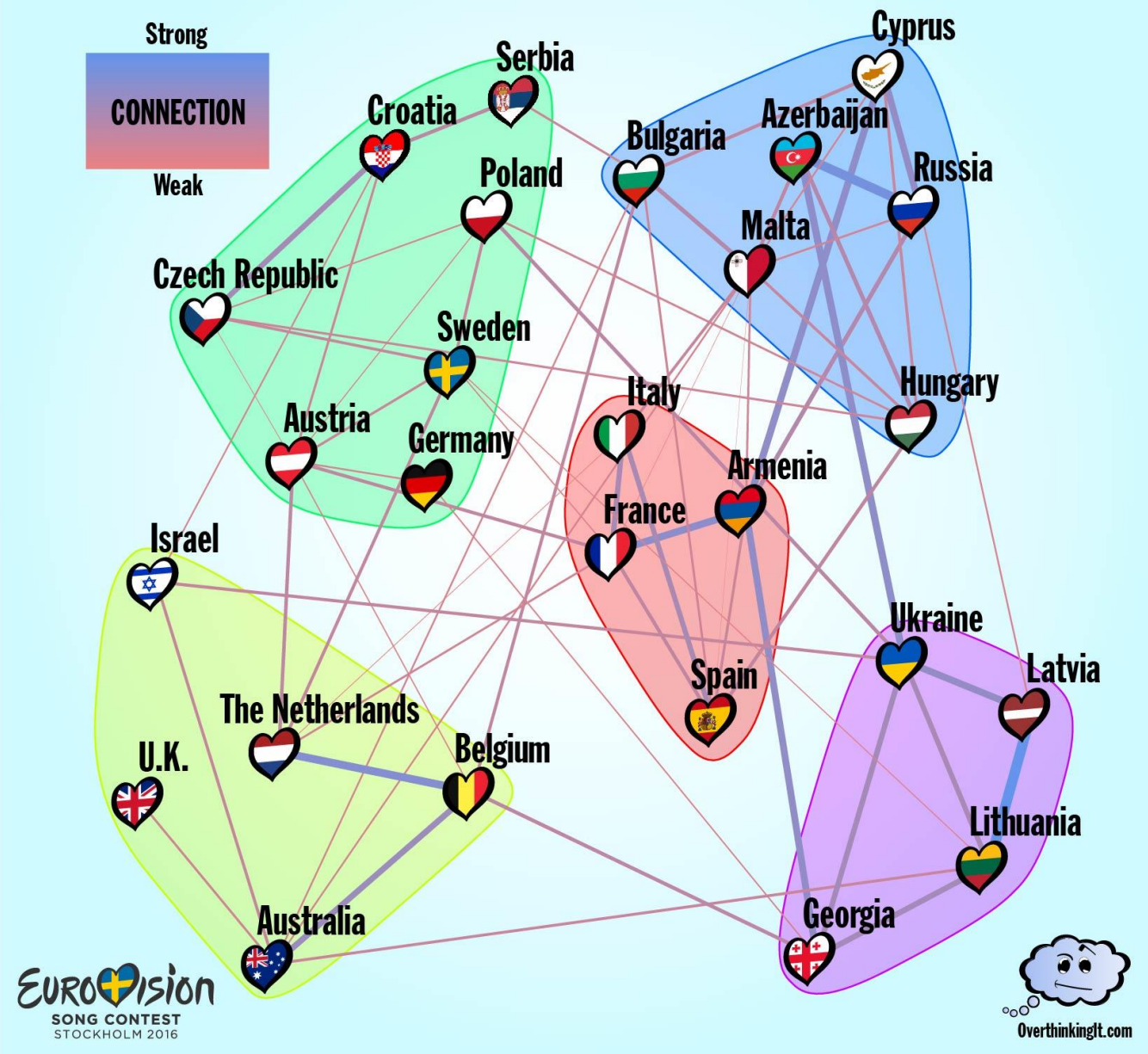
Sosyal Ağ Analizi

Toplulukların yapısının
incelenmesi, ağ yapısının
betimlenmesi, toplumlar
arasında kolayca
gözlemlenemeyen ilişkiler
görselleştirilerek var olan
bağlantıların modellenmesi
(Freeman, 2004)



Eurovision Connections 2016

Modularity = 0.415



Yaşamın Kökleri Araştırmaları

- ◎ Yaşamın kökleri araştırmalarını anlamak
- ◎ Yaşamın kökleri alanında önemli bir konuma geçebilmek
- ◎ Yeni iş birlikleri fırsatlarını değerlendirmek
- ◎ Bilgibilim
 - İş birliği
 - Disiplinlerarası olmak



ELSI
Origins
Network

“

Orig Life Evol Biosph (2018) 48:55–71
DOI 10.1007/s11084-017-9543-4



CrossMark

BIBLIOMETRICS

Origins of Life Research: a Bibliometric Approach

Arsev Umur Aydinoglu^{1,2} • Zehra Taşkın³



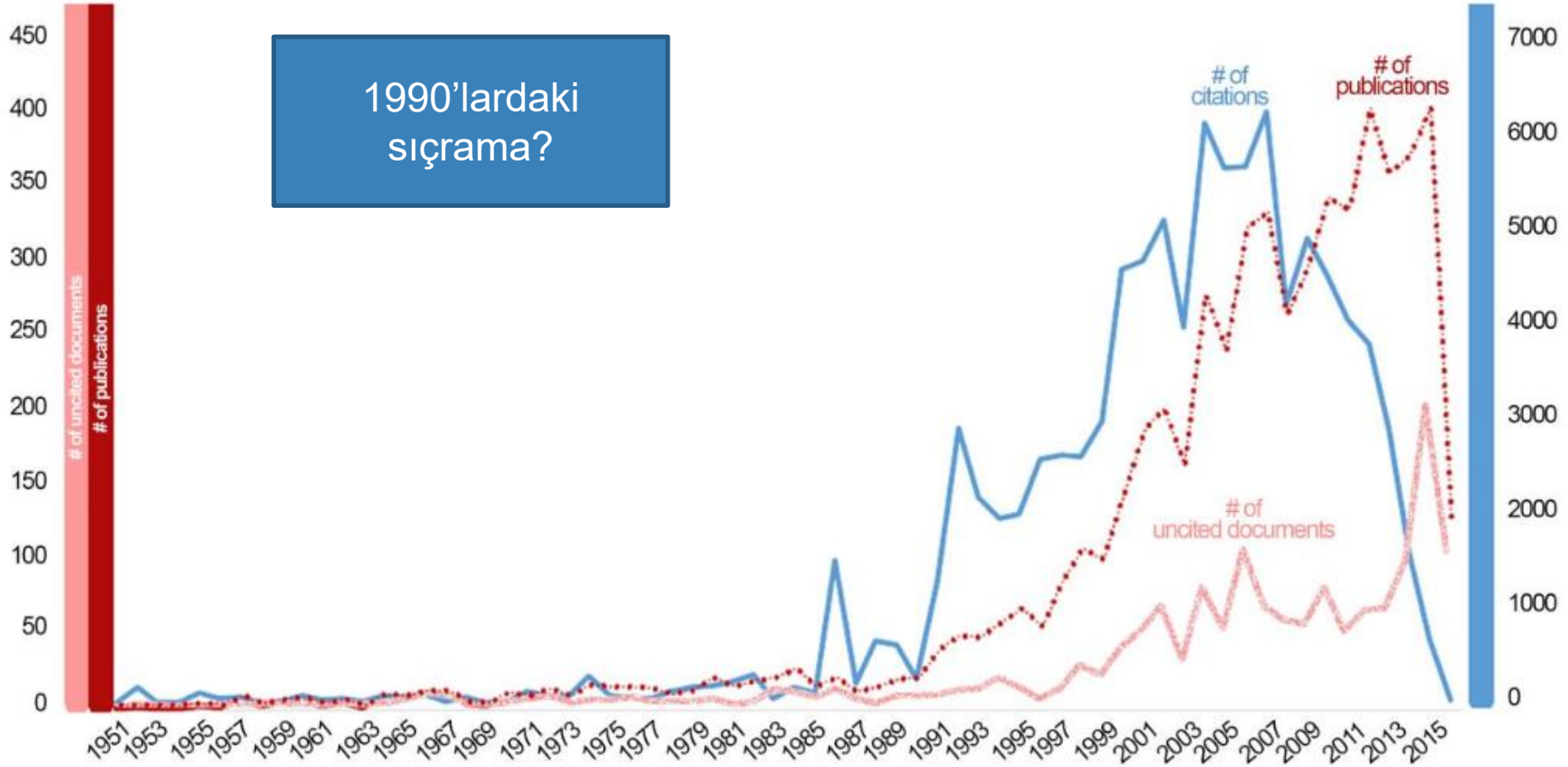
Origins of Life Research: A Bibliometric Approach

- ◎ Astrobiyoloji alanına etki eden disiplin ve konu alanlarının tanımlanması
- ◎ Yaşamın kökleri araştırmalarını takip etmek için önemli kaynaklar
- ◎ Başucu eserleri
- ◎ En önemli kişiler
- ◎ ...

5.647

“origin of life”, “origins of life”, “astrobiology”,
“exobiology”, “prebiotic chemistry”

Yaşamın Kökleri Yayınlarının Bibliyometrik Analizi



Search for past life on Mars: possible relic biogenic activity in martian meteorite ALH84001.

McKay DS¹, Gibson EK Jr, Thomas-Keprta KL, Vali H, Romanek CS, Clemett SJ, Chillier XD, Maechling CR, Zare RN.

+ Collaborators (2)

+ Author information

Abstract

Fresh fracture surfaces of the martian meteorite ALH84001 contain abundant polycyclic aromatic hydrocarbons (PAHs). These fresh fracture surfaces also display carbonate globules. Contamination studies suggest that the PAHs are indigenous to the meteorite. High-resolution scanning and transmission electron microscopy study of surface textures and internal structures of selected carbonate globules show that the globules contain fine-grained, secondary phases of single-domain magnetite and Fe-sulfides. The carbonate globules are similar in texture and size to some terrestrial bacterially induced carbonate precipitates. Although inorganic formation is possible, formation of the globules by biogenic processes could explain many of the observed features, including the PAHs. The PAHs, the carbonate globules, and their associated secondary mineral phases and textures could thus be fossil remains of a past martian biota.



NASA ASTROBIOLOGY INSTITUTE

Understanding Life on Earth and Beyond +

Astrobiology is the study of the origins, evolution, distribution, and future of life. This interdisciplinary field requires a comprehensive, integrated approach to biological, geological, planetary, and cosmic phenomena. NASA's Astrobiology Institute (NAI) focuses the search for habitable environments in our Solar System and around other stars; the search for evidence of prebiotic chemistry on Solar System bodies such as Mars, Jupiter's moon Europa, and research into the origin, early evolution, and future of life on Earth. Astrobiologists address three fundamental questions: How does life begin and evolve? Is there life elsewhere in the Universe? What is the future of life on Earth and beyond?

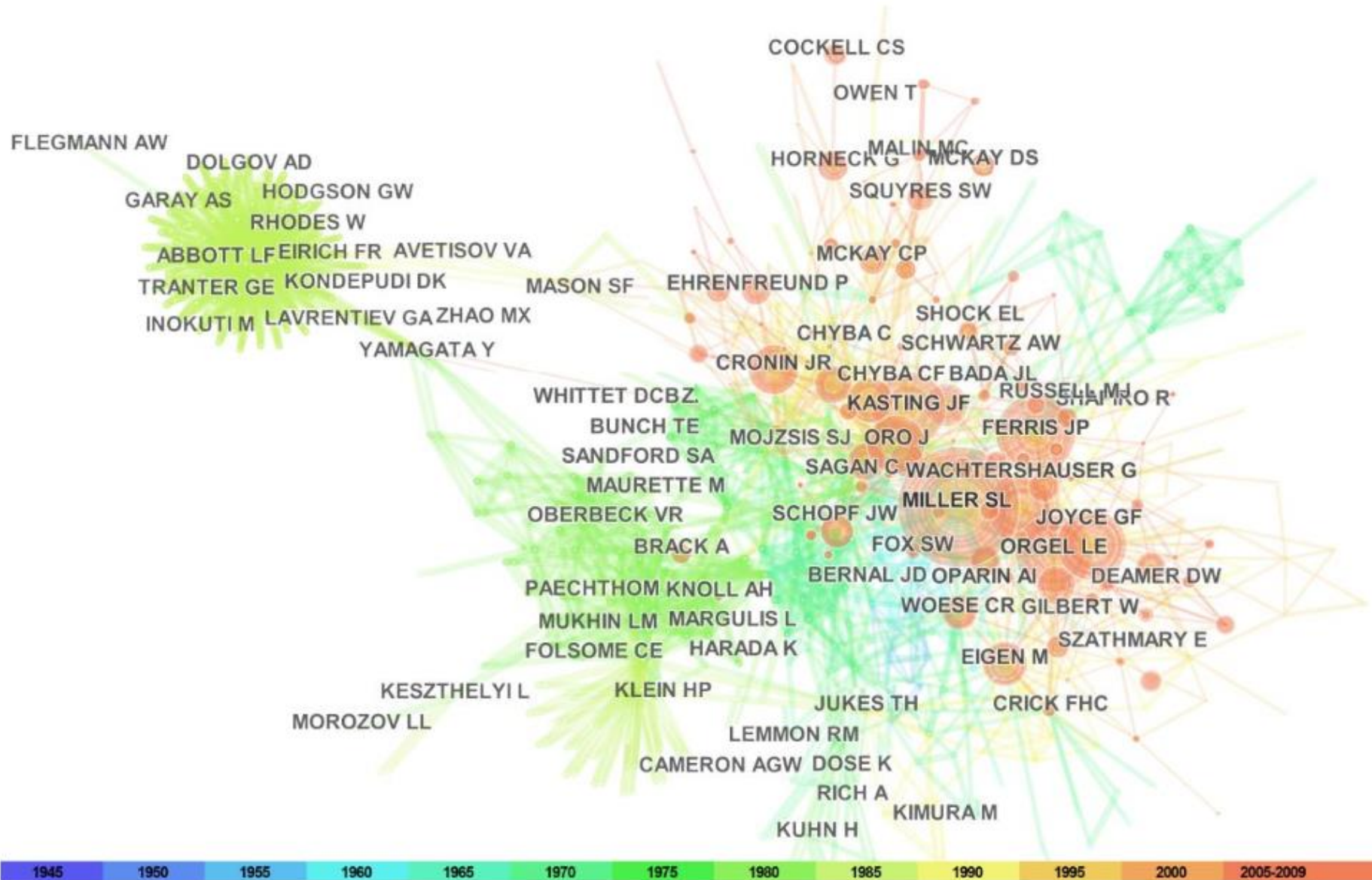
As part of a concerted effort to address this challenge, the National Aeronautics and Space Administration (NASA) established the **NASA Astrobiology Institute (NAI)** in 1998 as an innovative way to develop the field of astrobiology and provide a scientific framework for flight missions. NAI is a virtual, distributed organization of **competitively-selected teams** that integrate astrobiology research and training programs in concert with the national and international science communities.

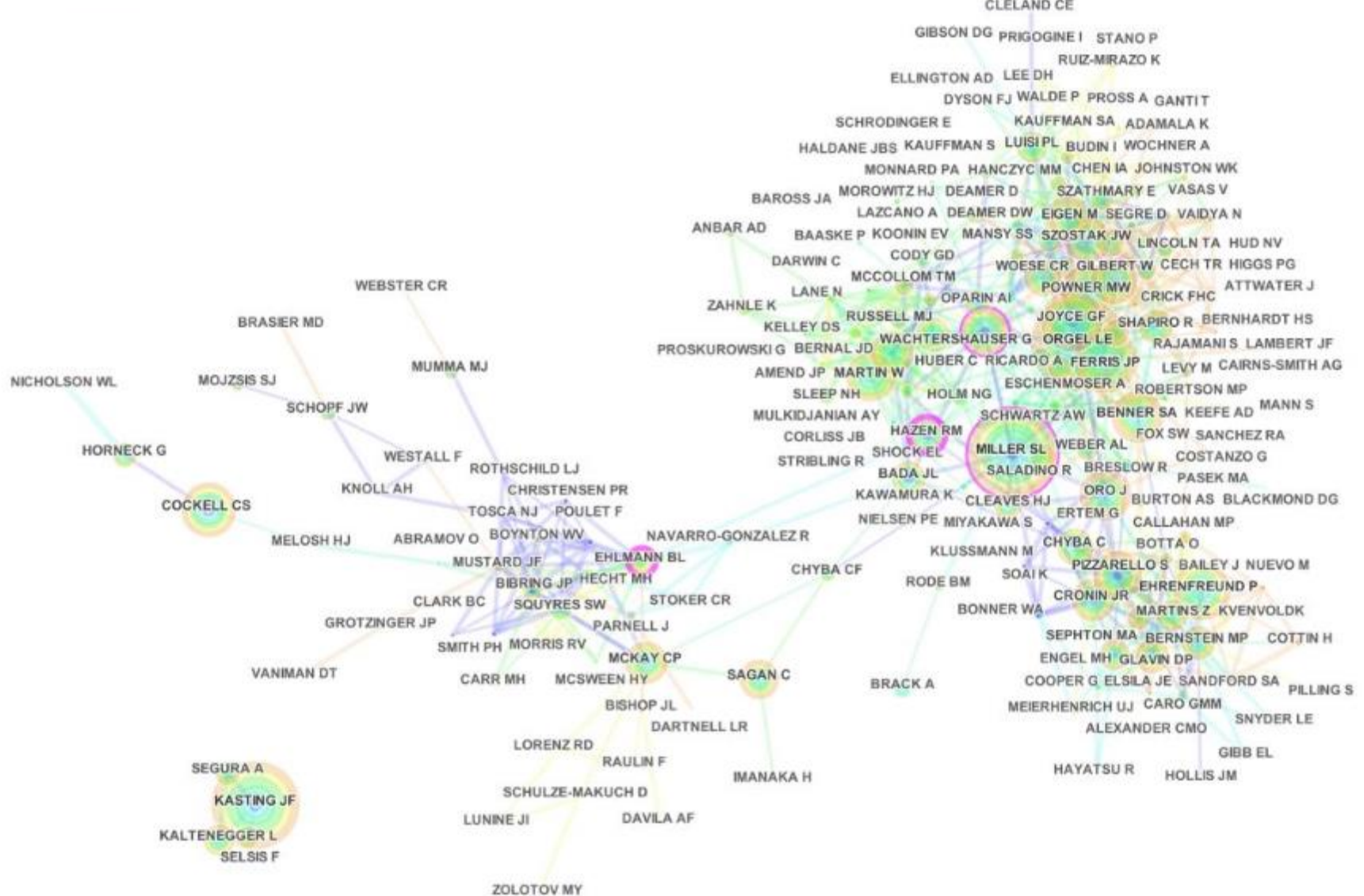
En Üretken Yaşamın Kökleri Araştırmacıları

Frequency			Centrality		
Name	Frequency		Name	Centrality	
1 Raulin F†	60		1 Brucato JR	0.31	
2 Ehrenfreund P*†	48		2 Saladino R	0.29	
3 Cockell CS*†	48		3 Westall F*†	0.26	
4 Brack A*†	45		4 Ehrenfreund P*†	0.24	
5 Horneck G	45		5 Cleaves HJ*†	0.14	
6 McKay CP*†	44		6 Glavin DP†	0.13	
7 Edwards HGM*	41		7 Lazcano A*†	0.12	
8 Luisi PL	41		8 Di Mauro E*	0.12	
9 Lazcano A*†	36		9 Pascal R	0.12	
10 Hoover RB†	34		10 Coll P*†	0.11	
11 Ferris JP†	34		11 Cockell CS*†	0.1	
12 Westall F*†	33		12 Selsis F	0.1	
13 Kobayashi K	32		13 Rettberg P†	0.09	
14 Coll P*†	31		14 Rozanov AY	0.09	
15 Lammer H	31		15 McKay CP*†	0.08	
16 Di Mauro E*	30		16 Brack A*†	0.07	
17 Russell MJ†	30		17 Dworkin JP†	0.07	
18 Bada JL†	29		18 Allamandola LJ†	0.07	
19 Hazen RM†	29		19 Reitz G	0.07	
20 Maurel MC*	28		20 Edwards HGM*	0.06	
21 Cleaves HJ*†	27		21 Maurel MC*	0.06	
22 Szopa C	27				
23 Schwartz AW	27				
24 Szostak JW†	27				

NAI araştırmacıları

Yazar İş Birliği Ağı (1945-2009) - CiteSpace







5.647

yayın

1.139

dergide yayımlanmış. Bu yayınların %80'i

260

çekirdek dergide yer bulmuş



Yayın için Sıklıkla Tercih Edilen Dergiler

Title	# of pubs	% of pubs
Origins of Life and Evolution of the Biospheres (55/86 Biology)	507	8.9%
Astrobiology (25/61 Astronomy & Astrophysics; 21/86 Biology; 41/184 Geosciences, Multidisciplinary)	451	7.9%
Astrophysical Journal (8/61 Astronomy & Astrophysics)	220	3.8%
Icarus (19/61 Astronomy & Astrophysics)	214	3.7%
International Journal of Astrobiology (42/61 Astronomy & Astrophysics; Biology 50/86; 134/170 Geosciences Multidisciplinary)	169	2.9%
Nature (1 of 63 Multidisciplinary)	111	1.9%
PNAS (4 of 63 Multidisciplinary)	107	1.8%
Planetary and Space Science (32/61 Astronomy and Astrophysics)	107	1.8%
Journal of Molecular Evolution (213/289 Biochemistry & Molecular Biology; 34/45 Evolutionary Biology, 120/165 Genetics & Heredity)	88	1.5%
Astronomy & Astrophysics (12/61 Astronomy and Astrophysics)	85	1.5%
Journal of Theoretical Biology (25/86 Biology; 14/56 Mathematical & Computational Biology)	78	1.3%
Science (2 of 63 Multidisciplinary)	75	1.3%

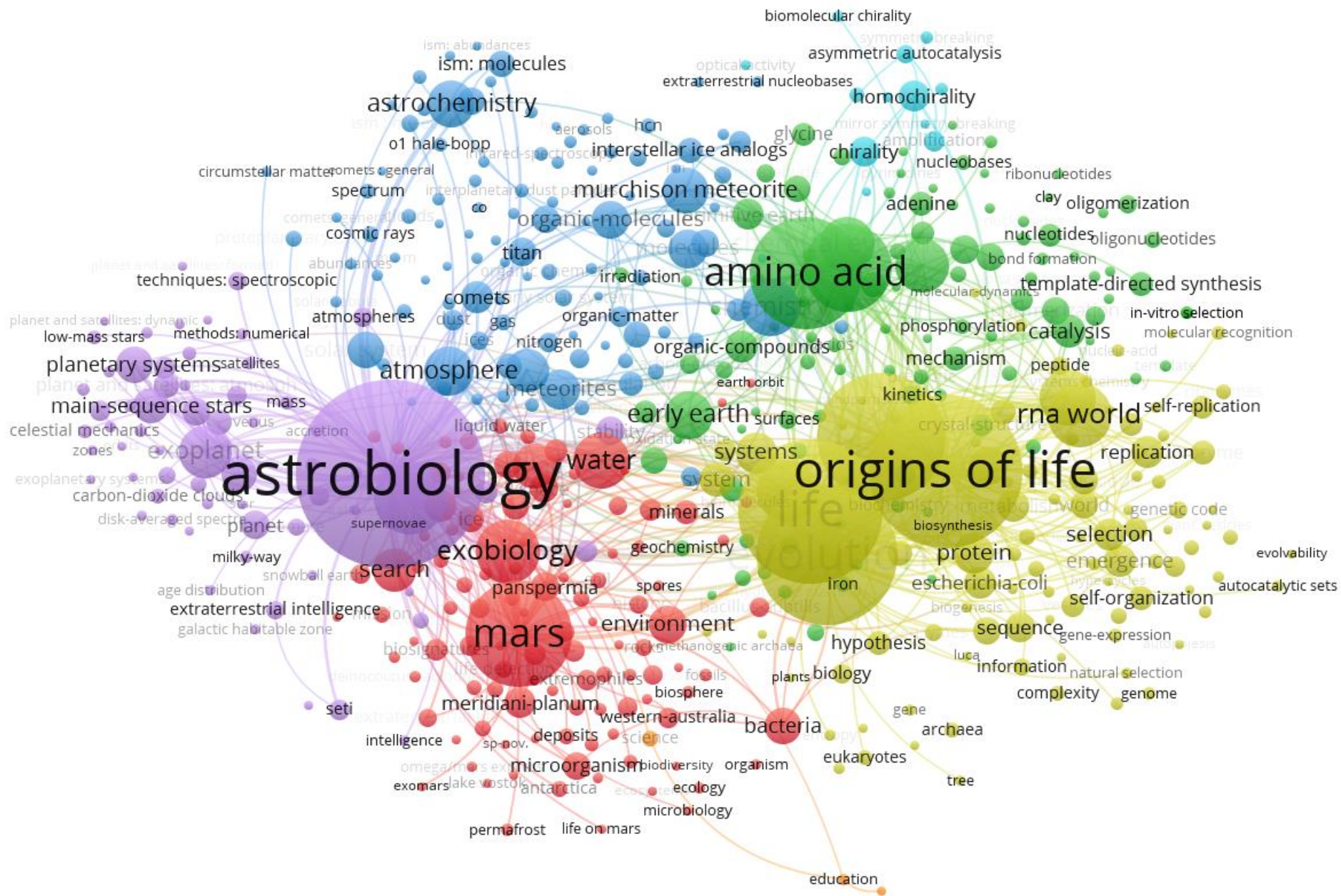


Anahtar Sözcük Analizi

5 temel küme

VosViewer görselleştirme aracı
(açık kaynak kodlu)

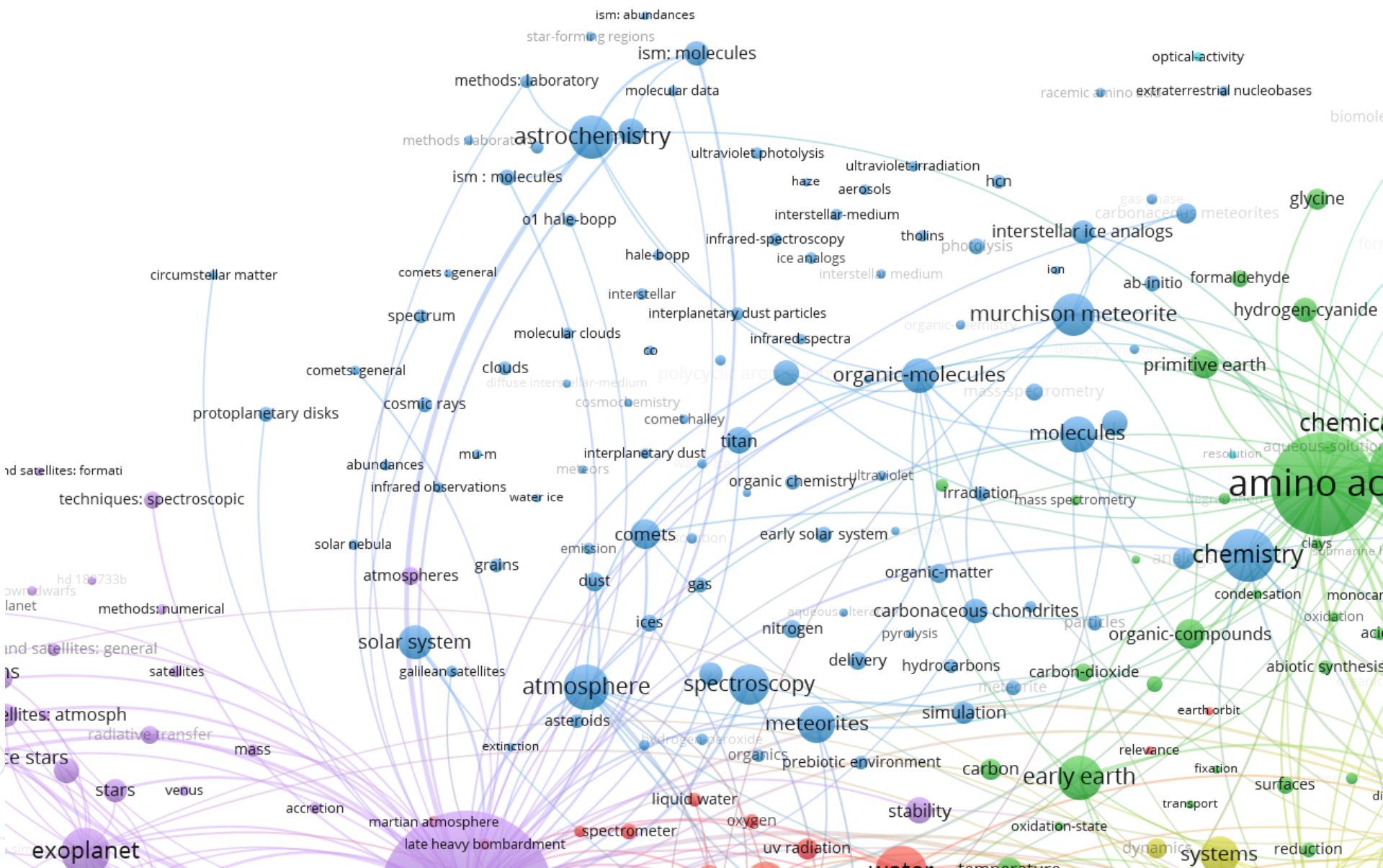




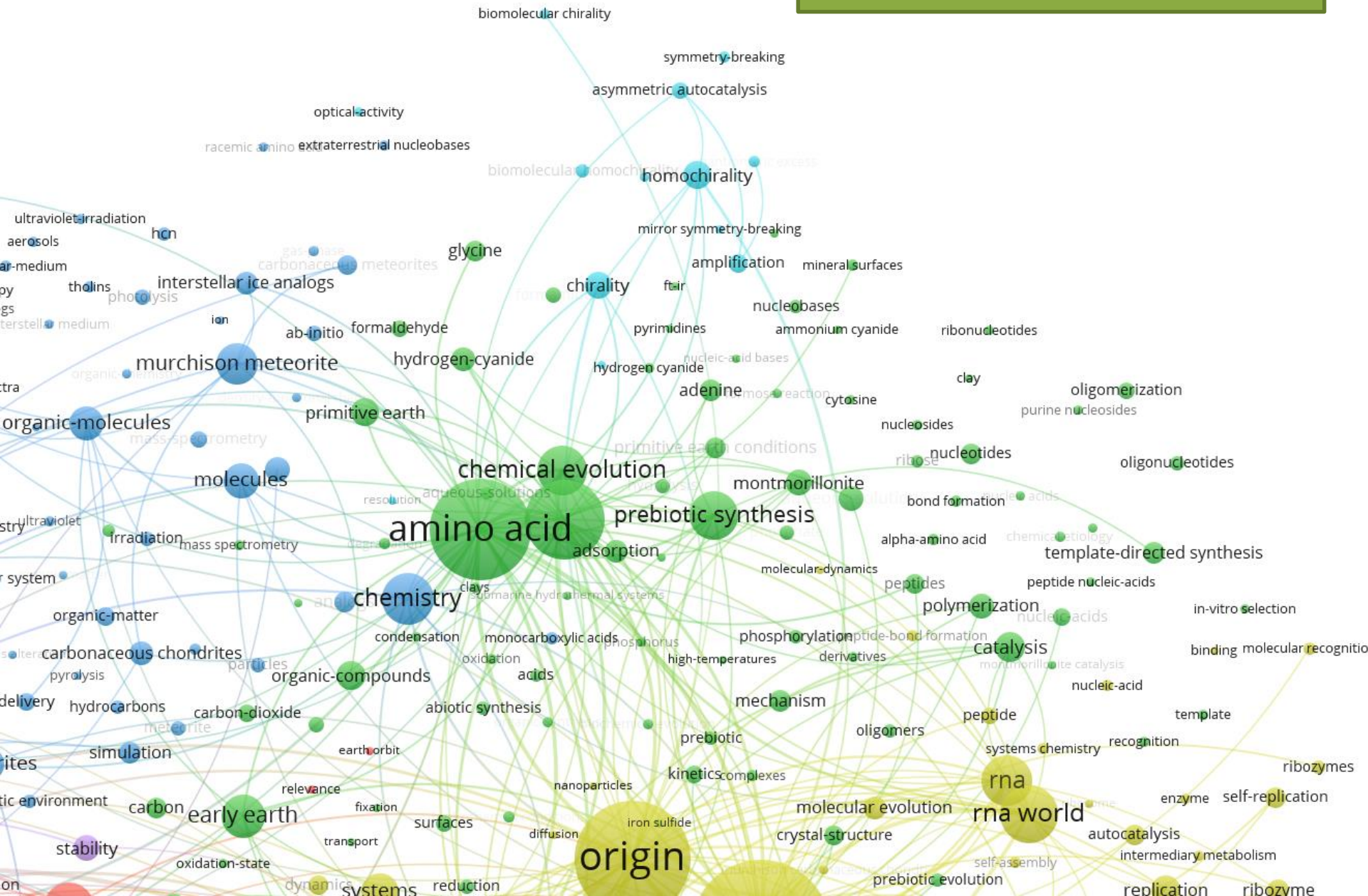


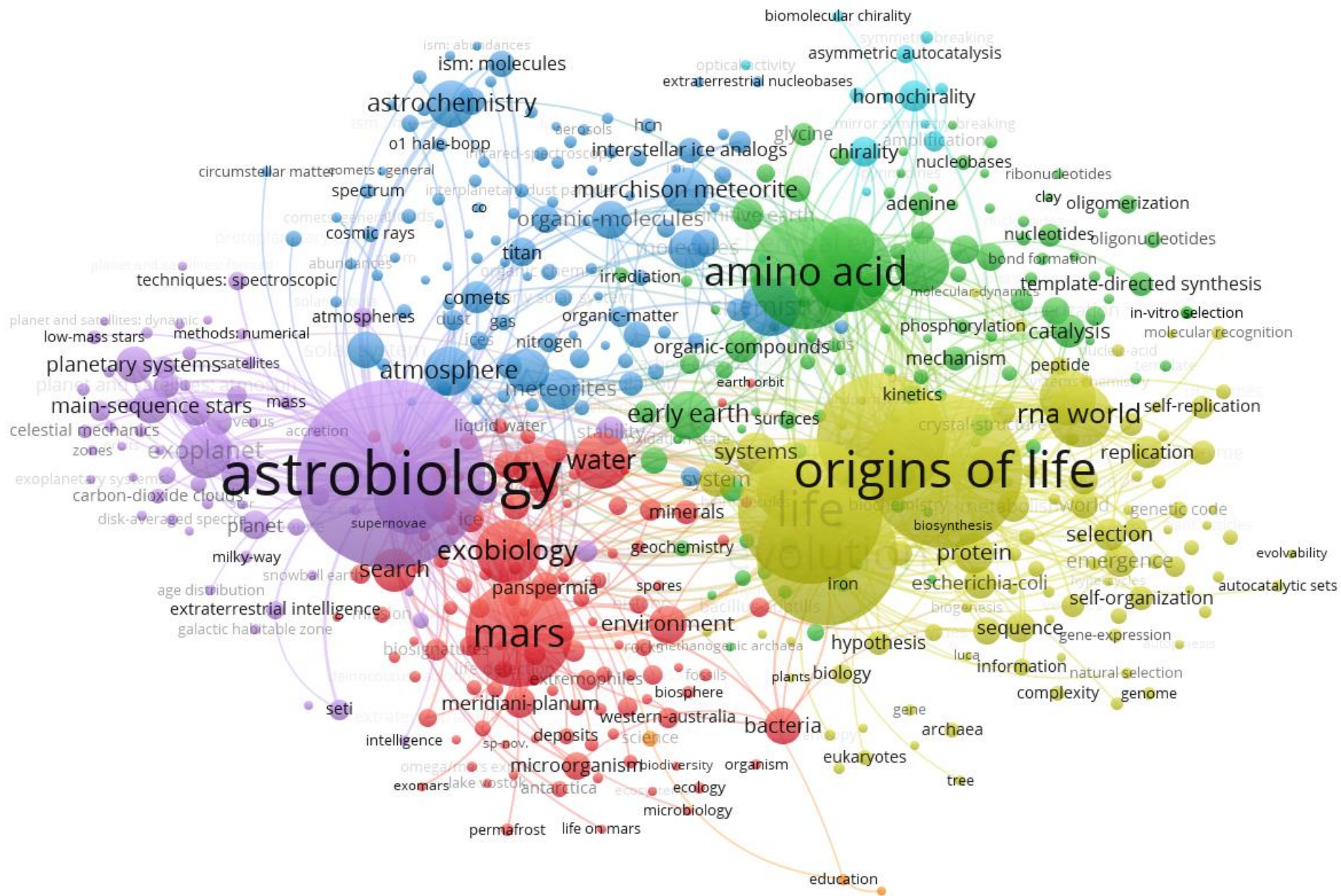


Astrokimya ve organik kimya



Amino asitler ve prebiyotik kimya



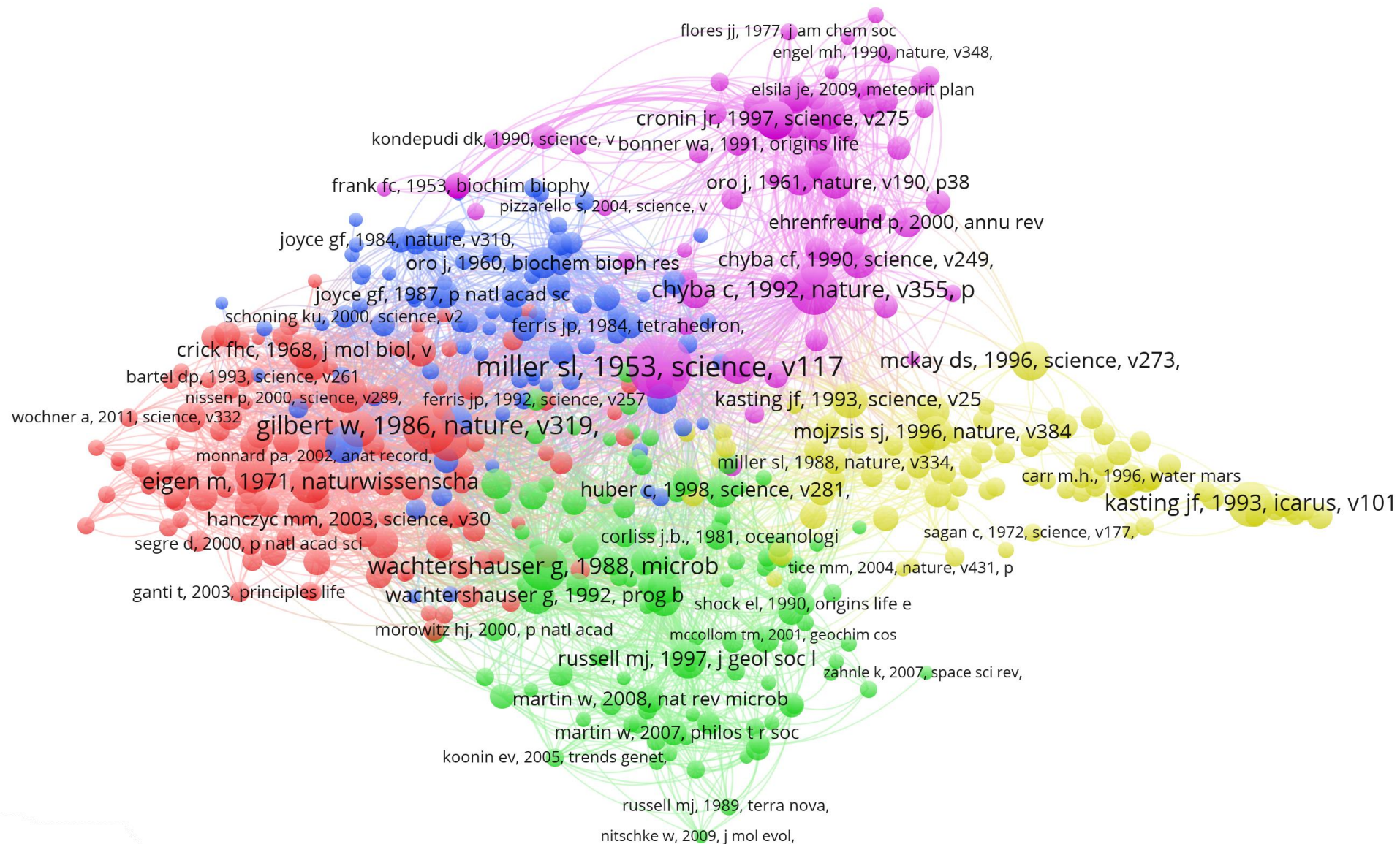




Çekirdek Yayınlar

En çok atıf yapılan yayınlar

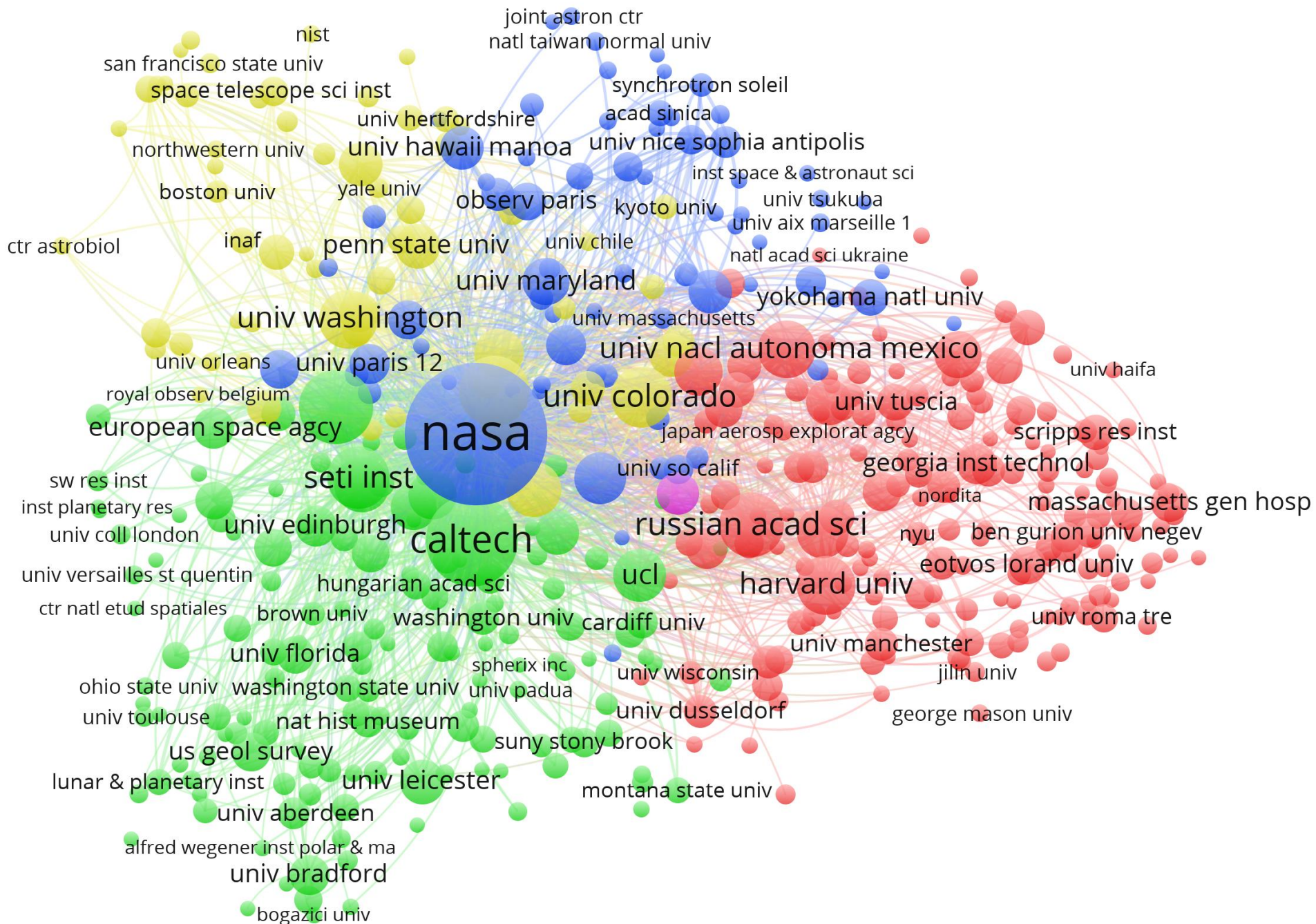




A decorative network diagram in the top-left corner, featuring a complex web of interconnected nodes and lines. The nodes are represented by small circles, some of which are solid grey and others are hollow with a grey outline. The lines connecting them are thin and grey, creating a dense, organic structure.

Kurumlar Arası İş Birlięi Aęı

A decorative network diagram in the bottom-right corner, similar to the one in the top-left. It shows a cluster of interconnected nodes and lines, with some nodes being solid grey and others hollow with a grey outline. The lines are thin and grey, forming a complex, web-like pattern.





Katkı Sağlayan Ülkeler

Rank	Country	Frequency	Centrality	Rank	Country	Frequency	Centrality
1	USA	2123	0.28	11	China	116	0
2	France	429	0.3	12	Switzerland	84	0.04
3	England	411	0.24	13	Brazil	80	0
4	Germany	306	0.13	14	Austria	77	0.02
5	Italy	261	0.1	15	Mexico	76	0.01
6	Spain	210	0.05	16	Scotland	72	0.03
7	Japan	203	0.06	17	Israel	69	0
8	Russia	137	0.05	18	Australia	65	0
9	Netherlands	128	0.03	19	Belgium	59	0.06
10	Canada	127	0.04	19	India	59	0



A decorative network diagram in the top-left corner, featuring a complex web of interconnected nodes and lines. The nodes are represented by circles of varying sizes, some with concentric rings, and the lines are thin and grey. The diagram is partially cut off by the left edge of the frame.

Kategorik İş Birliđi Ađı

A decorative network diagram in the bottom-right corner, similar to the one in the top-left. It shows a cluster of interconnected nodes and lines, with nodes represented by circles of varying sizes and some having concentric rings. The lines are thin and grey. The diagram is partially cut off by the right and bottom edges of the frame.



Sonuç

- ◎ Yeni başlayanlar için yaşamın kökleri araştırmaları
- ◎ Nereden başlamalı, hangi kurumları takip etmeli, hangi dergileri okumalı...
- ◎ Disiplinlerarası çalışma fırsatı
- ◎ Yeni disiplinlerin doğuşu vb.

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