Supplementary Materials:

Table S1. Clusters and keywords resulting from the analysis of keywords for the string "astrobiology".

Cluster	Color	Keywords	Links	Total Link Strength	Occurrences
1	Red	adaptation	96	244	19
		antarctica	111	289	24
		archaea	116	409	28
		archaeon	112	390	26
		article	173	1517	137
		bacteria	169	1158	81
		bacteria (microorganisms)	98	204	19
		bacterium	162	1154	76
		biodiversity	118	366	25
		biomass	75	163	17
		biosphere	97	207	22
		biotechnology	77	195	20
		classification	94	320	18
		controlled study	112	417	36
		cosmic radiation	115	335	31
		cyanobacteria	99	292	27
		cyanobacterium	104	328	27
		desert climate	102	279	17
		dna	84	217	24
		ecosystem	138	597	45
		extreme environment	122	367	32
		extreme environments	94	220	17
		extremophile	108	333	31
		extremophiles	120	485	61
		fluorescence	91	159	21
		fungi	109	323	30
		fungus	98	264	22
		genetics	142	769	57
		growth, development and aging	123	399	29
		habitat	103	242	18
		ionizing radiation	81	172	23
		isolation and purification	136	724	47
		lakes	72	186	17
		metabolism	169	1135	100
		microbial community	98	334	31
		microbial viability	77	216	18
		microbiology	161	1123	85
		microbiota	124	488	35
2	Green	amino acid	108	328	32
		amino acids	104	292	37
		astrobiology	199	9156	1513
		astrochemistry	70	406	119
		astrophysics	69	186	47

		biology	121	307	59
		carbon dioxide	137	433	48
		chemical analysis	81	169	20
		cosmology	71	192	39
		dust	109	224	21
		earth	103	263	43
		earth (planet)	179	1179	115
		enceladus	76	221	27
		europa	99	287	39
		extrasolar planets	65	229	42
		extraterrestrial life	113	318	51
		geochemistry	81	165	24
		hydrogen	124	333	29
		ice	129	491	54
		intelligence	57	127	17
		interplanetary flight	65	198	32
		irradiation	92	152	17
		ism: molecules	24	192	59
		jupiter	82	219	20
		life detection	109	354	46
		martian surface analysis	55	132	29
		mass spectrometry	103	322	45
		methane	124	486	47
		methods: numerical	21	128	47
		molecular processes	31	132	36
		molecules	69	260	52
		moon	136	509	57
		nasa	73	189	41
		nitrogen	116	278	26
		oceans and seas	110	454	34
		orbits	66	329	66
		planetary atmosphere	79	212	25
		planetary exploration	98	246	27
		planetary systems	33	120	53
		planets	175	1693	181
		planets and satellites: atmospheres	32	285	99
		planets and satellites: terrestrial planets	23	239	80
		prebiotic chemistry	74	216	42
		satellites	52	213	33
		saturn	97	313	24
		sea	114	501	38
		seti	55	180	42
		solar system	151	573	69
		space research	67	172	36
		stars	55	289	57
		terrestrial planets	35	156	26
		thermodynamics	110	278	30
3	Blue	basalt	97	289	23
		biological marker	113	394	26

		biomarker	100	193	17
		biomarkers	125	455	40
		biosignature	81	200	22
		carbon	126	325	29
		chemistry	183	3390	274
		devices	147	850	62
		fossil	108	400	30
		fossils	107	391	28
		geologic sediments	132	795	55
		heat	101	253	18
		iron	123	409	39
		mars	187	3266	348
		mass fragmentography	82	238	17
		meteoroids	94	287	28
		mineral	135	681	52
		minerals	128	600	53
		organic chemicals	98	348	26
		organic compound	108	437	36
		oxidation reduction reaction	90	270	21
		oxidation-reduction	88	259	19
		perchlorate	71	210	20
		procedures	178	2282	178
		raman spectrometry	100	378	31
		raman spectroscopy	90	259	33
		sediment	142	897	63
		silicate	116	414	30
		silicates	116	392	34
		silicon dioxide	101	302	22
		space simulation	97	331	23
		spectrum analysis, raman	97	367	30
4	Yellow	animal	80	254	24
		animals	80	254	24
		biogenesis	160	901	88
		biological evolution	107	425	38
		environment	98	223	18
		evolution	139	661	74
		evolution, chemical	84	253	20
		exobiology	194	6083	550
		geology	116	299	32
		government	95	354	25
		history	75	226	26
		human	153	1200	110
		humans	136	801	72
		life	147	663	62
		note	92	271	22
		origin of life	166	1072	124
		planetary science	105	387	38
		priority journal	165	1287	98
		robotics	85	226	30
		scientist	84	287	21

		space flight	183	1876	159
		spacecraft	141	762	61
		telescope	79	293	19
		telescopes	79	241	25
		trends	74	225	20
		united states	113	464	39
		united states national aeronautics and space administration	93	328	22
		venus	62	147	22
		volcano	97	241	17
5	Violet	analysis	112	383	26
		astronomy	193	5580	507
		atmosphere	170	1320	98
		biosignatures	145	769	83
		climate	100	337	31
		evolution, planetary	80	266	22
		exoplanets	95	490	68
		extraterrestrial environment	192	4318	346
		gas	96	298	20
		gases	77	250	22
		habitability	136	610	82
		microclimate	130	461	34
		models, theoretical	124	556	46
		oxygen	114	409	32
		planet	71	178	17
		remote sensing	79	174	23
		space	191	4135	336
		spectroscopy	124	462	50
		spectrum analysis	96	298	24
		stars, celestial	71	259	22
		temperature	164	789	71
		theoretical model	130	574	47
		time factor	97	344	27
		time factors	99	365	30
		water	169	1186	88
6	Light Blue	earth, planet	142	654	56

Table S2. Clusters and keywords resulting from the analysis of keywords for the string "astrobiology" AND "biomining" OR "bioleaching".

Cluster	Color	Label	Links	Total Link Strength	Occurrences
1	Red	acidophile	26	30	2
		astrobiology	28	52	5
		astronomy	26	31	2
		bacteria	11	15	2
		bioleaching	29	46	4
		earth (planet)	9	10	2
		international space station	10	11	2
		iron	27	41	3
		metabolism	22	34	4
		microbiology	27	38	3
		minerals	25	26	2
2	Green	extreme environment	15	19	2
		extremophiles	11	11	2
		hydrogen-ion concentration	26	42	3
		microbial metabolism	26	31	2
		nonhuman	28	50	4
		ph	26	42	3
		proteobacteria	26	31	2
3	Blue	acidophiles	24	31	3
		geomicrobiology	24	26	2
		iberian pyrite belt	23	28	2
		iron cycle	23	28	2
		mars	27	39	4
		río tinto	23	28	2
		sulfur cycle	23	28	2
4	Yellow	acidithiobacillus	25	34	2
		acidithiobacillus ferrooxidans	25	34	2
		mineral	25	34	2
		sulfide	25	34	2
		sulfur	25	34	2