

Table SPBS-19

## S&amp;E articles in astronomy and astrophysics, whole count, by region, country, or economy: 1996–2020

(Number)

Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
World	8,374	9,845	8,522	8,116	8,811	9,728	10,117	10,779	11,579	12,832	14,944	12,541	12,089	12,822	12,408	13,377	14,510	13,511	13,931	14,171	14,375	14,254	14,084	14,767	14,507
North America	4,047	4,321	4,155	4,075	4,288	4,455	4,465	5,213	5,447	5,886	6,750	6,155	5,701	6,286	6,311	6,542	6,877	6,627	6,516	6,881	6,904	7,085	7,033	7,275	7,226
Canada	356	397	393	330	419	368	382	489	524	601	732	709	696	766	919	924	980	973	949	875	944	955	957	1,058	1,025
Greenland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Mexico	126	154	196	193	211	232	243	310	232	272	285	322	284	295	290	422	276	299	361	386	417	411	391	421	372
United States	3,798	4,014	3,847	3,787	3,952	4,126	4,118	4,760	5,072	5,410	6,220	5,666	5,204	5,805	5,821	5,965	6,400	6,124	5,972	6,396	6,387	6,566	6,528	6,754	6,741
Central America and Caribbean	18	24	18	14	22	19	18	22	20	25	39	43	32	40	47	39	27	47	27	41	34	35	34	30	24
Antigua and Barbuda	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bahamas, The	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barbados	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	5	2	0	0	0	0	0	0	0
Belize	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Costa Rica	1	2	0	1	2	1	0	0	1	0	0	1	0	3	2	0	3	5	2	4	4	3	6	2	5
Cuba	0	1	3	0	0	1	0	0	1	3	7	3	2	5	2	2	1	7	6	13	0	9	5	13	2
Dominica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dominican Republic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
El Salvador	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grenada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0
Guatemala	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	1	0	2
Haiti	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Honduras	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	0	0	0	0	0	0	0	0	0
Jamaica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Nicaragua	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	1	2
Panama	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	2	0	0	1	0	1	0	0	0	0
Puerto Rico	17	21	14	12	20	17	17	22	16	20	29	37	26	28	34	29	17	33	18	23	25	18	19	14	10
Saint Kitts and Nevis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saint Lucia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saint Vincent and the Grenadines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trinidad and Tobago	0	0	1	0	0	0	1	0	2	2	3	2	1	2	3	1	0	0	0	0	0	4	1	0	2
South America	356	526	411	409	435	507	560	617	635	742	998	816	838	955	888	1,183	1,034	1,164	1,418	1,398	1,529	1,526	1,588	1,656	1,682
Argentina	59	106	90	98	91	123	138	123	117	136	168	134	174	159	166	227	164	173	187	183	212	213	201	223	253
Bolivia	2	1	0	2	0	0	0	1	1	0	2	0	1	1	0	2	1	0	1	0	1	1	0	0	0
Brazil	143	205	168	147	180	155	184	184	185	210	323	222	238	295	240	326	288	326	426	437	471	462	473	532	462
Chile	150	192	150	167	172	231	245	338	330	425	559	494	498	528	519	687	666	758	913	906	1,002	1,008	1,064	1,099	1,153
Colombia	5	6	1	0	1	2	2	4	5	1	4	1	10	7	6	11	13	18	27	25	25	25	30	33	27

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(Number)

Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Ecuador	1	1	0	0	0	0	0	1	0	0	2	0	1	1	0	1	3	0	2	6	2	7	11	13	8
Guyana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Paraguay	1	1	2	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	1
Peru	0	0	1	1	0	1	3	4	3	2	6	1	4	0	1	8	3	2	1	4	2	8	4	9	5
Suriname	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Uruguay	4	10	5	3	5	7	11	4	3	3	7	1	3	3	0	3	5	1	6	3	5	3	6	12	6
Venezuela	10	34	22	19	15	21	16	20	25	29	38	26	19	53	22	34	15	20	29	14	15	14	21	9	1
Europe	4,918	6,323	5,252	4,815	5,271	5,847	6,380	6,846	7,510	8,494	9,763	8,066	7,675	8,133	8,009	8,467	9,347	8,629	8,953	9,056	9,541	9,287	9,251	9,646	9,421
EU-27 and UK <sup>a</sup>	4,303	5,575	4,749	4,306	4,664	5,177	5,649	6,240	6,859	7,754	8,954	7,376	7,031	7,429	7,396	7,647	8,598	7,840	8,102	8,225	8,705	8,432	8,446	8,823	8,562
UK	1,103	1,397	1,297	1,180	1,231	1,329	1,503	1,794	1,883	2,036	2,533	2,200	1,910	2,186	2,342	2,450	2,554	2,458	2,685	2,916	3,042	3,092	3,124	3,228	3,212
EU-27 <sup>b</sup>	3,568	4,759	3,999	3,645	3,938	4,343	4,697	5,241	5,846	6,723	7,652	6,301	6,136	6,449	6,459	6,686	7,613	6,975	7,179	7,203	7,688	7,440	7,456	7,787	7,593
Austria	44	103	84	86	86	78	153	144	136	216	188	174	193	214	273	260	276	268	286	276	278	256	284	304	300
Belgium	126	160	133	88	118	132	166	225	255	314	340	303	290	349	397	428	452	446	495	449	449	467	421	526	503
Bulgaria	19	24	25	29	32	30	31	24	33	34	92	46	77	52	61	62	90	46	82	103	66	73	74	58	69
Croatia	4	6	5	9	10	13	21	13	20	17	31	27	17	24	38	53	62	42	52	55	51	68	79	34	41
Cyprus	0	0	0	0	0	0	2	4	3	3	5	1	3	5	1	1	9	5	3	6	9	11	10	6	9
Czechia	60	76	59	69	59	74	107	84	106	161	221	135	136	160	166	181	192	156	209	203	236	265	272	294	306
Denmark	88	161	136	125	133	93	108	163	188	188	217	159	134	161	220	287	281	287	398	398	414	379	424	477	471
Estonia	11	20	16	15	14	14	18	14	9	20	27	23	23	13	17	31	25	23	36	25	28	35	39	22	28
Finland	82	98	101	93	106	94	128	117	151	179	238	172	171	171	172	187	217	190	251	259	326	269	249	264	281
France	876	1,239	963	873	903	964	1,039	1,288	1,540	1,828	2,117	1,666	1,622	1,864	2,014	1,884	2,113	2,005	2,032	2,171	2,225	2,107	2,137	2,228	2,214
Germany	1,265	1,567	1,245	1,182	1,271	1,304	1,389	1,714	1,958	2,365	2,428	2,310	2,238	2,329	2,515	2,621	3,034	2,805	2,841	2,883	3,091	3,111	3,096	3,224	3,114
Greece	71	60	63	71	78	91	116	99	124	130	200	108	109	149	147	154	170	151	180	163	222	171	174	186	209
Hungary	45	51	44	43	61	53	81	86	91	75	89	117	92	119	116	110	122	138	138	157	190	193	218	267	219
Ireland	27	43	35	51	45	24	38	53	76	118	105	86	101	121	146	162	136	110	131	106	169	164	160	155	177
Italy	677	973	865	859	866	987	996	1,196	1,341	1,498	1,779	1,609	1,322	1,740	1,668	1,711	1,816	1,721	1,780	1,746	1,990	1,945	1,954	2,023	1,929
Latvia	4	11	7	3	3	2	0	6	1	8	4	2	4	6	5	9	7	7	4	9	5	12	4	8	19
Lithuania	5	19	20	11	10	10	19	40	19	26	25	14	25	17	18	19	18	22	33	25	27	24	30	34	36
Luxembourg	0	3	0	1	1	1	2	1	0	1	2	2	1	4	0	0	0	1	0	3	1	0	0	1	3
Malta	0	0	0	0	0	0	0	0	2	0	1	1	0	0	0	1	1	5	5	8	7	12	8	6	9
Netherlands	454	680	461	511	495	460	560	708	814	879	930	819	704	737	849	821	1,033	925	964	1,012	1,187	1,227	1,166	1,225	1,153
Poland	165	155	194	199	200	193	197	244	271	267	314	268	277	310	364	383	387	351	447	455	522	547	493	477	557
Portugal	21	30	48	30	50	46	42	91	103	109	142	115	125	128	158	148	204	172	191	172	190	166	201	192	233
Romania	8	18	7	10	15	7	18	13	29	15	30	24	23	26	37	42	34	32	66	44	61	34	38	62	48
Slovakia	20	30	22	15	13	21	56	48	40	43	49	37	67	55	58	80	73	66	80	90	64	73	61	73	94

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Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Slovenia	5	5	4	2	7	3	7	7	16	26	18	16	23	17	21	23	20	28	29	28	31	43	55	30	34
Spain	406	653	597	456	452	604	593	777	775	931	1,152	1,006	944	1,048	1,411	1,252	1,517	1,348	1,488	1,348	1,633	1,448	1,474	1,422	1,545
Sweden	154	196	135	127	154	155	159	178	200	277	336	244	259	258	429	346	367	315	392	493	535	579	618	619	598
Other Europe	887	1,163	863	850	972	993	1,138	1,177	1,334	1,545	1,627	1,453	1,304	1,493	1,462	1,728	1,698	1,698	1,839	1,940	2,041	2,150	2,082	2,065	2,206
Other Europe, 2020 <sup>b</sup>	1,959	2,492	2,100	1,967	2,137	2,273	2,568	2,847	3,061	3,413	3,946	3,463	3,055	3,454	3,512	3,897	3,961	3,884	4,136	4,441	4,587	4,727	4,693	4,769	4,816
Albania	0	0	0	1	0	0	0	0	0	1	0	1	0	0	1	0	1	0	0	2	4	1	1	0	0
Andorra	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Belarus	2	0	0	0	1	0	1	1	8	0	2	3	2	1	0	5	3	0	1	1	2	2	4	2	4
Bosnia and Herzegovina	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	0	0	2	0	0	1
Holy See (Vatican City)	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	4	0	0	1	1	1	1	2	9	6
Iceland	2	1	1	1	5	4	4	2	7	13	6	11	3	8	12	31	37	27	18	19	23	30	31	40	27
Kosovo	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	1	0	0	3	0	0	0	1	0
Liechtenstein	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Moldova	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Monaco	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	7	1	12	5
Montenegro <sup>c</sup>	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	1
North Macedonia	0	0	0	0	0	0	0	1	0	1	1	4	1	0	3	0	2	0	1	2	4	3	1	2	3
Norway	40	77	37	32	42	37	34	66	76	115	81	105	61	64	56	101	64	82	88	115	156	121	94	100	160
Russia	610	736	556	551	661	671	746	673	719	768	790	717	661	753	693	898	805	857	868	912	926	990	962	1,001	1,002
San Marino	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
Serbia <sup>c</sup>	0	0	0	0	0	0	0	0	0	0	0	44	67	48	50	59	68	41	103	52	60	43	59	67	80
Serbia and Montenegro <sup>d</sup>	11	11	21	12	17	15	19	26	31	29	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Switzerland	115	212	174	171	151	156	202	295	409	468	494	460	360	490	527	497	526	508	585	693	784	807	746	689	789
Turkey	22	26	15	11	19	31	29	46	50	62	106	71	55	68	75	85	116	117	112	107	116	107	106	110	129
Ukraine	125	157	101	122	135	130	155	134	103	176	179	119	168	153	137	170	188	190	239	208	207	206	208	202	195
Middle East	158	160	132	179	201	210	225	255	272	261	315	278	309	336	313	438	553	539	585	567	590	634	621	679	709
Armenia	45	16	10	50	51	48	43	47	57	52	59	55	65	59	40	56	58	48	71	43	30	35	53	39	46
Azerbaijan	1	4	3	0	2	5	6	2	5	8	5	10	6	3	6	3	6	6	4	8	5	10	2	7	10
Bahrain	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1
Gaza Strip <sup>e</sup>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Georgia	7	10	8	17	12	23	19	16	20	34	29	20	22	29	28	34	35	33	31	40	42	43	36	40	37
Iran	5	5	7	2	8	10	15	19	24	14	34	25	28	38	44	92	118	113	99	93	92	98	100	104	99
Iraq	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	6	6	4	8	9	8	6
Israel	95	114	98	105	115	117	135	154	154	147	172	156	179	191	184	216	269	262	260	277	279	304	304	324	351
Jordan	0	4	3	0	4	3	1	2	2	5	1	2	1	2	3	0	3	1	4	0	5	3	5	7	1







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(Number)

Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Palau	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Samoa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solomon Islands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tonga	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tuvalu	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vanuatu	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unassigned	130	93	81	136	104	81	121	86	61	137	141	130	135	154	64	49	61	63	114	101	136	147	161	189	135

EU = European Union; UK = United Kingdom.

<sup>a</sup> The UK was a part of the EU for data purposes from 1973 to 2019.

<sup>b</sup> Beginning in 2020, the UK was no longer a member of the EU.

<sup>c</sup> Beginning in 2006, Serbia and Montenegro represented individual countries.

<sup>d</sup> Serbia and Montenegro represented a single country for data purposes from 1992 to 2006.

<sup>e</sup> West Bank and Gaza Strip are separate entities in this list but are grouped in the World Bank Lending Groups classification list. Here, the economic status of the group is applied to both individual regions.

**Note(s):**

Article counts refer to publications from selected journals and conference papers in S&E from Scopus. Articles are classified by their year of publication and are assigned to a region, country, or economy on the basis of the institutional address(es) of author(s) listed in the article. Articles are credited on a whole count basis. In whole counting, each region, country, or economy with a collaborating author on an article is credited with one count. The sum of the whole count for regions, countries, or economies does not add to the world total because of multiple counts of coauthored publications. Some publications have incomplete address information for coauthored publications in the Scopus database. The Unassigned category count is the sum of whole counts for publications that cannot be assigned to a region, country, or economy.

**Source(s):**

National Center for Science and Engineering Statistics; Science-Metrix; Elsevier, Scopus abstract and citation database, accessed May 2021.

*Science and Engineering Indicators*