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Catalogue of video meteor orbits. Part 1.

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The catalogue of the heliocentric orbits of 817 meteors recorded within the double station program of the video observation of meteors at the Ondřejov observatory in years 1998 – 2001 is presented. The electronic version of the catalogue is available on http://www.asu.cas.cz/~meteor/catalogues.

Keywords: meteors – meteor showers – heliocentric orbit

1 Introduction

Double station observations of meteors by a videotechnique started at the Ondřejov observatory in 1998. Observations are made during the periods of the activity of major meteor showers. Records of several thousands of meteors have been collected during the first four years. Majority of them are the double station ones. The second station lies at the distance 92.5 km and azimuth 340°. This configuration allows us to compute heliocentric and atmospheric trajectories of double station meteors.

In this paper the catalogue of their heliocentric trajectories is given. This catalogue contains the sporadic meteors as well as the meteor showers members. The Leonid meteor shower was also observed within given time period but these meteors are not included in this catalogue. We intend to publish their trajectories in another catalogue.

2 Instrumentation and data processing

The double station observations are made on the baseline Ondřejov – Kunžak. The coordinates of both station are shown in Table I. Each station operates the system which consists of the commercial camcorder Panasonic S-VHS, the second generation image intensifier Dedal-41 and Arsat 1.5/50 mm lens. This system provides field of view approximately 25 degrees according to the zoom of camera. Its limiting magnitude is $+6^m$ for moving objects as meteors are. Moreover two other systems were introduced in recent years. The first one equipped with the same objective lens and spectral grating is used for taking meteor spectra, the second one outfitted with the lens Zenitar 2.8/16 mm provides wider field of view.

Observed data are recorded in the S-VHL PAL system with time resolution 0.04 second. Initially, time authority was provided by the DCF77 signal receivers, recently the GPS receivers were introduced. In both cases time is directly included into the video signal. Records are searched using automatic detection software MetRec (Molau, 1999), found meteor images are digitalized with a PC framegrabber, transformed into 768 x 576 pixel, 8-bit monochrome images and stored as sequences in the non-compressed AVI format.

Original software MetPho was developed for processing of the digitalized records. The processing of these records can be divided into two important steps. The identification of the stars and the calibration of the image is the first step and the measurement of the position and brightness of the meteor is the second one. Detailed description of the method is given in Koten (2002). Finally, atmospheric trajectory and heliocentric orbit of each meteor is computed by means of our standard procedures (Borovička, 1990).

Table I: The coordinates of the stations.

	Ondřejov	Kunžak
eastern longitude	14°46′48.75″	15°12′2.75″
northern latitude	49°54′36.8″	49°06′27.2″
altitude [m]	524	652
distance of stations	92.5 km	
azimuth of stations	340°	

3 Observational strategy

The observation was aimed at one particular meteor shower each night. To sample a considerable volume of atmosphere and, at the same time, avoid too distant meteors, the cameras were pointed to intermediate elevations (40 to 60 degrees above horizon). The centers of the fields at both stations were adjusted so that they intersected at the presumed meteor heights (105 km for fast meteors like Leonids, 90 km for slower meteors like Geminids). The difference between the camera elevations at both stations was limited to be no more than 10 degrees. From the range of possible solutions, that which satisfied additional criteria was selected. First, the field of view must not be too close to the radiant at neither station. Second, the angle between the meteor planes (i.e. the planes containing the station and the meteor trajectory) must not be too small. The violation of these criteria would make the computation of meteor trajectory and velocity from the observed data difficult or impossible. Of course, this sometimes happened for sporadic meteors. If the Moon was above horizon, its passage close to the fields must have been avoided. If no solution was found to satisfy all criteria during the whole observing period, the cameras were re-adjusted in the course of night.

4 The catalogue

Data of all meteors are given in the Table II, parts 1-28. Data are arranged in four groups, which complete information about each meteor. Table III provides list of all observational nights. Finally, Table IV provides list of meteor showers whose members are included in the catalogue.

The first group (first column) provides identification of the meteor, date and time of the event. Date is encoded in the meteor number. This number is given in the form YYMDDXXX where YY are the last two digits of the year, M is the month: 1 to 9 - January to September, A - October, B - November, C - December, DD is the day (evening date) and XXX is number of the meteor, which counting starts at the beginning of the night. It means that the actual day of the event is equal to DD if time $T > 12$ UT and DD+1 if $T < 12$ UT. The time in UT is given in the second row. The letter "P" in the field XXX means that the meteor was included in database additionally.

The second group of data consists of four columns. α_G, δ_G are the right ascension and the declination of the geocentric radiant, v_G is the geocentric velocity. The velocity is computed as an average value of data from both stations. The deceleration is not taken into account. Standard deviation for each value are given in the second row. The photometric mass m computed by integration of the meteor light curve (Ceplecha et al., 1998) and the maximum brightness of the meteor converted to the distance of 100 km M_{max} are given in the last column of this group. Masses of meteors which enter or leave field of view are marked by asterisk*. Such mass is only a lower limit of real value.

The third group provides the heliocentric orbit parameters. The notation has the following meaning: a is semimajor axis, e is eccentricity, q is perihelion distance, ω is argument of perihelion, Ω is longitude of the ascending node and i is inclination. Again, the errors of these values are given in the second row. Sometimes, there is symbol of ∞ in the field of semimajor axis value. It does not mean the parabolic or hyperbolic orbit with the eccentricity $e > 1.0$. Actually, this symbol expresses the fact, that the eccentricity is very close to the value 1.0 (i.e. within the 3σ) what results in great uncertainty in determination of the semimajor axis.

Finally, the fourth group gives the meteor shower membership computed on the basis of the D-criterion (Southworth, Hawkins, 1963). The mean orbit of each meteor shower is taken from Cook (1973). Q is the angle between meteor planes as seen from both stations which describes quality of the trajectory determination. If the angle is less than about 10 degrees, the meteor trajectory is usually hard to determine. Nevertheless, the consistency of the results can be checked by to convergence of velocity solution from both stations. So, some meteors with low Q angle but good velocity solution have been included.

5 Conclusion

In this catalogue we present the heliocentric orbits of 817 meteors computed on the base of the double station observations in years 1998 – 2001. Recently we published several papers (and prepare others) dealing with the atmospheric trajectories and light curves (e.g. Borovička et al., 2002, Koten & Borovička, 2001, Koten et al., 2001) of these fainter meteors. Because our research is not focused on the orbits, we would like to provide them to the wider meteoric community.

The electronic version of the catalogue is available on http://www.asu.cas.cz/~meteor/catalogues.

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Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 1).

Meteor	α_G	δ_G	v_G	m [g]	a	e	q	ω	Ω	i	Shower
Time	[°]	[°]	[km/s]	M_{abs}	[AU]	[°]	[AU]	[°]	[°]	[°]	Q
98422003	343.	85.0	18.35	5.2E-03	3.52	0.721	0.982	160.7	32.538	26.13	SPO
20:35:57	3.	0.3	0.14	3.7	0.15	0.011	0.001	0.3	0.001	0.18	32.
98422007	276.7	63.5	7.93	1.2E-02	1.03	0.019	0.989	144.	32.577	14.1	SPO
21:32:51	1.6	0.5	0.19	4.4	0.01	0.002	0.007	9.	0.001	0.4	52.
98422009	219.07	-18.81	29.38	1.0E-02	2.51	0.852	0.372	111.7	212.586	4.01	SPO
21:44:04	0.13	0.11	0.10	2.9	0.04	0.003	0.002	0.3	0.001	0.13	18.
98422012	236.5	54.32	18.16	3.4E-03	1.82	0.469	0.966	208.8	32.592	28.89	SPO
21:55:50	0.5	0.17	0.14	4.4	0.03	0.008	0.001	0.3	0.001	0.19	71.
98422013	244.6	-7.74	32.12	2.7E-03	1.049	0.864	0.143	328.3	32.599	29.2	SPO
22:06:00	0.3	0.10	0.12	3.7	0.011	0.002	0.002	0.4	0.001	0.4	34.
98422015	230.4	-22.1	34.58	2.6E-03	1.93	0.907	0.179	136.7	212.606	7.1	α SCO
22:14:48	0.4	0.4	0.11	3.7	0.06	0.002	0.005	0.8	0.001	0.8	14.
98422017	341.4	48.7	8.4	1.1E-02	0.949	0.196	0.763	62.0	32.630	13.3	SPO
22:51:33	0.8	0.8	0.2	4.5	0.006	0.004	0.007	1.7	0.001	0.5	43.
98422020	235.3	-7.82	22.06	7.1E-03	0.982	0.666	0.328	313.3	32.635	11.6	SPO
22:59:22	0.2	0.13	0.17	3.9	0.006	0.004	0.003	0.4	0.001	0.2	24.
98422022	292.6	65.5	9.5	6.8E-03	1.058	0.077	0.976	126.	32.644	18.0	SPO
23:12:57	1.5	0.3	0.5	4.0	0.012	0.006	0.005	6.	0.001	0.8	55.
98422023	273.3	58.83	27.90	2.7E-03	2.76	0.635	1.005	183.3	32.651	46.7	δ DRA
23:22:12	0.4	0.15	0.19	3.9	0.09	0.012	0.001	0.4	0.001	0.2	58.
98422028	262.2	62.4	24.6	1.6E-03	2.78	0.64	1.003	186.6	32.666	40.1	δ DRA
23:44:56	1.2	0.3	0.3	4.2	0.17	0.02	0.001	0.7	0.001	0.4	64.
98422030	284.5	46.2	38.0	5.9E-04	3.2	0.69	1.005	182.6	32.678	66.1	SPO
00:02:24	1.5	0.3	0.8	3.8	0.6	0.06	0.001	2.3	0.001	0.9	46.
98422034	240.9	62.0	20.6	3.4E-03	2.60	0.62	0.992	195.0	32.697	32.3	SPO
00:30:37	0.2	0.1	0.2	4.5	0.07	0.01	0.001	0.2	0.001	0.2	65.
98810004	46.45	56.9	59.71	1.3E-02*	∞	0.972	0.944	149.34	138.037	114.4	PER
20:41:59	0.05	0.1	0.06	0.2	-	0.007	0.001	0.13	0.001	0.1	34.
98810005	43.89	58.69	58.9	5.6E-04	∞	0.98	0.958	152.8	138.040	111.3	PER
20:47:02	0.12	0.11	0.5	3.0	-	0.04	0.002	0.7	0.001	0.3	38.
98810014	47.	57.6	57.2	3.3E-03*	4.9	0.81	0.928	144.3	138.081	111.9	PER
21:48:26	2.	0.8	0.2	1.3	0.9	0.03	0.019	4.1	0.001	1.0	44.
98810016	44.82	57.00	57.66	2.4E-03	5.2	0.817	0.948	149.0	138.089	112.8	PER
21:59:40	0.10	0.15	0.13	1.7	0.3	0.011	0.001	0.3	0.001	0.2	41.
98811011	286.3	-5.8	12.60	7.2E-02	2.55	0.643	0.911	222.2	138.982	5.8	SPO
20:22:15	0.4	0.7	0.16	3.1	0.07	0.010	0.002	0.5	0.001	0.3	9.
98811025	47.86	60.9	57.5	4.1E-04	∞	0.96	0.938	148.0	139.014	108.1	PER
21:09:33	0.14	0.2	0.5	3.5	-	0.04	0.002	0.8	0.001	0.4	41.
98811027	49.07	39.9	66.5	2.6E-04	11.	0.92	0.964	154.0	139.021	143.4	SPO
21:19:04	0.19	0.3	0.4	3.6	4.	0.03	0.002	0.7	0.001	0.5	39.
98811033	47.33	58.83	57.8	1.1E-03	8.4	0.89	0.941	148.0	139.030	110.9	PER
21:33:24	0.11	0.12	0.3	2.7	1.5	0.02	0.001	0.5	0.001	0.2	38.
98811034	45.7	56.6	58.4	7.5E-04*	6.1	0.84	0.953	150.6	139.032	114.1	PER
21:35:53	0.3	0.2	0.3	2.6	1.1	0.03	0.003	0.8	0.001	0.3	36.
98811038	47.76	60.12	57.16	5.3E-03	9.2	0.898	0.937	147.2	139.046	108.86	PER
21:56:27	0.08	0.09	0.11	1.6	0.8	0.009	0.001	0.2	0.001	0.14	44.
98811041	48.8	55.6	59.3	2.7E-04	7.5	0.88	0.933	146.2	139.055	116.4	PER
22:09:56	0.4	0.3	0.5	3.4	2.3	0.04	0.004	1.2	0.001	0.5	39.
98811045	15.5	24.3	61.2	5.5E-04	3.6	0.85	0.539	271.	139.067	144.1	SPO
22:29:13	0.5	0.3	0.8	2.9	0.8	0.03	0.019	3.	0.001	0.9	37.
98811089	47.91	58.53	58.98	6.5E-03	∞	0.969	0.942	149.0	139.151	112.19	PER
00:34:24	0.14	0.12	0.14	0.6	-	0.012	0.001	0.3	0.001	0.18	37.
98811092	14.4	18.9	60.8	8.0E-04	3.5	0.882	0.416	285.	139.151	151.6	SPO
00:34:60	0.5	0.7	0.5	2.3	0.5	0.016	0.016	2.	0.001	1.4	17.
98811093	15.2	53.3	52.8	7.3E-04	2.5	0.62	0.962	210.	139.153	104.3	SPO
00:37:58	0.9	0.5	0.5	2.5	0.3	0.04	0.006	2.	0.001	0.7	29.
98811094	46.7	58.7	59.2	1.9E-03	∞	0.99	0.951	151.2	139.155	112.0	PER
00:40:46	0.2	0.3	0.3	1.8	-	0.03	0.002	0.6	0.001	0.4	31.
98811095	48.65	57.3	58.70	1.0E-02	9.0	0.896	0.935	146.7	139.157	113.7	PER
00:43:38	0.17	0.3	0.19	0.4	1.5	0.018	0.002	0.5	0.001	0.4	35.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 2).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
98811096	45.1	60.2	57.2	2.0E-03	10.	0.90	0.955	151.5	139.160	108.7	PER
00:47:41	0.3	0.7	0.4	1.5	4.	0.04	0.002	0.8	0.001	0.9	43.
98811097	37.	83.69	39.38	1.3E-03	3.24	0.708	0.948	147.6	139.162	68.80	SPO
00:51:30	3.	0.13	0.14	2.7	0.11	0.010	0.004	1.1	0.001	0.18	58.
99420010	226	41.2	11.9	3.6E-03	1.25	0.27	0.909	236.	30.406	17.8	ϕ BOO
22:17:33	2	0.7	0.4	4.5	0.04	0.02	0.006	3.	0.001	0.6	51.
99420014	217.1	14.56	11.54	4.7E-03	1.179	0.338	0.781	263.2	30.423	10.15	SPO
22:42:13	0.3	0.16	0.16	4.4	0.008	0.005	0.002	0.6	0.001	0.17	56.
99420017	245.7	29.25	35.4	3.2E-03*	3.7	0.808	0.706	250.5	30.428	53.9	SPO
22:48:52	0.6	0.19	0.2	2.8	0.3	0.016	0.003	0.7	0.001	0.5	38.
99420020	270.4	34.4	46.4	1.6E-04*	∞	0.98	0.924	213.	30.438	78.2	LYR
23:04:10	1.0	0.2	0.4	2.7	-	0.04	0.006	1.	0.001	0.6	36.
99420024	266.4	34.58	45.0	9.8E-04*	∞	0.98	0.897	218.4	30.454	74.8	LYR
23:27:29	0.5	0.09	0.5	3.6	-	0.04	0.003	0.8	0.001	0.5	30.
99420025	227.3	39.0	23.85	6.9E-03	3.08	0.723	0.852	230.3	30.455	32.3	SPO
23:29:24	0.7	0.2	0.19	4.4	0.17	0.015	0.002	0.6	0.001	0.3	58.
99420026	300.2	47	34.6	3.7E-03	1.8	0.47	0.956	148.	30.462	63	SPO
23:39:08	1.3	3	0.2	2.8	0.4	0.12	0.012	6.	0.001	2	37.
99420042	264.2	37.8	34.7	7.4E-04	2.0	0.55	0.887	228.	30.484	61.1	SPO
00:11:26	0.8	0.3	1.0	3.9	0.2	0.05	0.007	2.	0.001	1.3	45.
99420047	262.2	8.5	52.5	3.5E-04	4.5	0.90	0.470	277.2	30.487	99.9	SPO
00:16:30	0.5	0.3	0.6	3.5	1.0	0.02	0.011	1.9	0.001	0.9	37.
99420049	206.9	64.9	10.80	1.0E-02	1.619	0.383	0.999	192.2	30.494	16.34	SPO
00:26:05	0.8	0.3	0.12	4.1	0.017	0.007	0.001	0.3	0.001	0.17	52.
99420P01	290.3	44.15	39.8	4.1E-04	3.0	0.67	1.001	172.0	30.495	70.2	SPO
00:27:40	0.4	0.15	0.4	4.5	0.2	0.03	0.001	0.7	0.001	0.4	45.
99420061	243.7	73.9	17.02	6.3E-03	2.22	0.547	1.005	180.1	30.505	26.84	SPO
00:43:17	1.3	0.3	0.10	4.1	0.04	0.008	0.001	0.4	0.001	0.15	47.
99420066	279.9	8.22	60.29	7.5E-04	5.7	0.856	0.823	232.5	30.510	121.3	SPO
00:50:12	0.3	0.09	0.18	2.7	0.5	0.013	0.005	0.8	0.001	0.2	30.
99420069	161.0	52.6	12.45	2.3E-02	4.4	0.772	1.000	188.5	30.517	11.84	SPO
01:00:00	0.8	0.5	0.16	3.7	0.2	0.012	0.001	0.4	0.001	0.19	39.
99420070	284.1	-18.80	67.43	9.8E-04	5.3	0.858	0.747	243.6	30.517	172.3	SPO
01:00:37	0.4	0.15	0.16	2.9	0.5	0.013	0.009	1.2	0.001	0.3	19.
99420071	286.7	-26.2	69.82	4.8E-04	∞	0.991	0.815	51.7	210.518	173.2	SPO
01:02:13	0.6	0.3	0.16	3.8	-	0.015	0.012	1.6	0.001	0.5	13.
99420075	312.8	39.0	41.7	3.8E-04	2.3	0.64	0.830	124.	30.524	75.5	SPO
01:10:43	1.2	0.3	0.6	4.0	0.2	0.03	0.015	3.	0.001	0.7	39.
99420080	241.69	38.93	33.17	5.6E-03	11.9	0.930	0.838	229.08	30.527	48.35	SPO
01:15:27	0.09	0.05	0.14	2.5	1.4	0.008	0.001	0.17	0.001	0.15	71.
99420081	316.9	70.6	22.76	3.3E-02*	2.65	0.638	0.959	151.9	30.530	35.85	SPO
01:19:55	0.8	0.2	0.06	1.9	0.04	0.006	0.001	0.4	0.001	0.11	39.
99420089	306.64	6.13	60.1	5.5E-04	1.93	0.539	0.891	132.5	30.547	134.1	SPO
01:44:13	0.18	0.12	0.2	3.2	0.07	0.016	0.005	1.3	0.001	0.2	33.
99420093	272.1	33.42	46.58	3.9E-03	13	0.926	0.927	212.9	30.549	79.8	LYR
01:48:16	0.3	0.12	0.15	1.6	2	0.012	0.002	0.5	0.001	0.2	55.
99420094	210.4	-0.7	15.58	2.9E-03	1.42	0.511	0.693	265.2	30.550	5.6	SPO
01:49:54	0.6	0.4	0.17	4.7	0.02	0.007	0.006	1.1	0.001	0.2	79.
99420098	285.1	48.57	39.6	1.1E-03	8.3	0.88	1.005	178.3	30.555	66.3	SPO
01:56:46	0.4	0.11	0.4	3.1	2.0	0.03	0.001	0.5	0.001	0.4	51.
99420107	225.28	-18.0	29.06	5.0E-03	1.519	0.819	0.274	127.89	210.568	1.2	α SCO
02:13:31	0.06	0.3	0.06	3.3	0.009	0.001	0.001	0.18	0.001	0.4	36.
99420111	325.1	29.8	43.8	1.0E-03	1.90	0.708	0.556	85.6	30.569	81.9	SPO
02:16:28	0.7	0.4	0.4	3.4	0.11	0.016	0.013	2.0	0.001	0.8	36.
99420114	288.0	9.4	61.9	2.7E-04	6	0.84	0.958	206.	30.576	124.6	SPO
02:27:36	0.9	0.3	0.9	3.5	3	0.07	0.010	3.	0.001	0.7	36.
99422001	298.0	61.2	11.9	3.8E-03	1.040	0.088	0.948	107.	32.469	22.7	SPO
01:01:23	1.2	0.2	0.7	4.2	0.014	0.006	0.008	8.	0.001	1.3	58.
99422005	271.66	33.00	47.0	5.0E-04	∞	0.97	0.914	215.4	32.477	79.7	LYR
01:12:19	0.18	0.13	0.8	3.4	-	0.05	0.003	1.0	0.001	0.7	54.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 3).

Meteor	α_G	δ_G	v_G	m [g]	a	e	q	ω	Ω	i	Shower
Time	[°]	[°]	[km/s]	M_{abs}	[AU]	[°]	[AU]	[°]	[°]	[°]	Q
99422006	266.6	-1.3	25.9	1.2E-03	0.644	0.803	0.127	344.2	32.478	43.4	SPO
01:14:53	0.5	0.4	0.3	5.2	0.004	0.005	0.004	0.4	0.001	1.2	29.
99422007	284.9	68.7	27.90	2.8E-02*	7.	0.86	0.998	169.7	32.478	43.4	δ DRA
01:15:06	0.5	1.4	0.07	1.9	2.	0.04	0.001	0.4	0.001	0.7	47.
99422008	213.5	-5.6	17.99	2.0E-03	1.49	0.581	0.626	271.5	32.479	4.5	SPO
01:16:23	0.4	0.3	0.12	5.0	0.02	0.004	0.004	0.8	0.001	0.2	72.
99422010	269.4	69.35	18.6	2.1E-03	1.79	0.439	1.004	175.3	32.480	31.4	SPO
01:17:58	0.9	0.18	0.3	4.3	0.04	0.013	0.001	0.5	0.001	0.4	63.
99422011	261.35	37.42	38.53	1.1E-03	4.7	0.811	0.878	224.1	32.481	63.7	SPO
01:19:29	0.18	0.11	0.17	3.4	0.3	0.011	0.002	0.4	0.001	0.2	72.
99422026	272.2	32.9	46.8	1.4E-03	∞	0.95	0.916	215.2	32.509	79.9	LYR
02:00:23	0.2	0.2	0.3	2.6	-	0.02	0.002	0.6	0.001	0.3	73.
99422033	319.14	7.76	63.3	9.5E-04	11.	0.936	0.705	112.5	32.522	135.71	SPO
02:19:07	0.14	0.06	0.2	2.3	2.	0.014	0.005	0.8	0.001	0.16	37.
99422035	298.6	40.39	44.0	6.4E-04	3.7	0.74	0.981	160.8	32.526	78.4	SPO
02:25:48	0.4	0.17	0.7	3.3	0.6	0.04	0.002	1.0	0.001	0.7	70.
99422040	278.45	35.34	46.6	9.2E-04	10.	0.91	0.969	202.6	32.536	80.6	LYR
02:39:33	0.12	0.07	0.3	3.1	2.	0.02	0.001	0.4	0.001	0.3	73.
99423002	275.23	33.25	46.53	3.6E-03	8.5	0.891	0.934	211.99	33.426	80.56	LYR
00:35:06	0.07	0.02	0.11	2.3	0.6	0.007	0.001	0.16	0.001	0.10	54.
99423003	283.09	4.78	61.3	2.9E-04	4.5	0.82	0.801	236.7	33.428	127.6	SPO
00:38:08	0.18	0.11	0.4	3.4	0.7	0.03	0.006	1.4	0.001	0.3	35.
99423004	210.8	46.2	15.2	2.6E-03	2.23	0.575	0.950	211.9	33.430	19.7	τ HER
00:40:39	0.6	0.7	0.2	4.7	0.07	0.013	0.003	0.8	0.001	0.3	45.
99423005	274.61	32.22	48.14	1.3E-03	∞	0.975	0.925	213.0	33.435	82.47	LYR
00:48:21	0.13	0.06	0.18	2.7	-	0.013	0.001	0.3	0.001	0.18	49.
99423006	187.38	-16.92	14.16	2.3E-02	2.112	0.599	0.846	54.78	213.436	5.14	SPO
00:49:27	0.08	0.09	0.04	4.0	0.010	0.002	0.001	0.10	0.001	0.04	63.
99423007	282.1	26.22	37.8	2.9E-04	1.02	0.225	0.788	280.	33.438	78.4	SPO
00:52:54	0.9	0.15	0.5	4.3	0.03	0.016	0.016	5.	0.001	0.8	53.
99423008	316.13	44.71	39.5	1.6E-03	2.87	0.704	0.849	128.6	33.443	69.0	SPO
01:00:18	0.15	0.06	0.3	3.4	0.14	0.014	0.002	0.7	0.001	0.3	48.
99423010	291.3	38.7	35.27	2.8E-03	1.27	0.209	1.004	173.	33.451	68.8	SPO
01:11:31	1.2	0.4	0.16	2.6	0.03	0.016	0.002	6.	0.001	0.4	48.
99423012	281.3	-3.79	60.4	2.9E-04	2.20	0.715	0.626	264.6	33.454	139.7	SPO
01:15:26	0.5	0.16	0.3	2.9	0.14	0.017	0.012	1.7	0.001	0.4	29.
99423015	210.9	-6.0	22.96	4.9E-03	2.79	0.783	0.605	264.7	33.471	4.6	χ SCO
01:42:20	0.5	0.4	0.12	3.8	0.11	0.007	0.005	0.9	0.001	0.3	62.
99505002	8.86	17.74	35.33	4.9E-03*	1.414	0.909	0.128	33.6	45.107	32.3	SPO
01:12:16	0.10	0.16	0.08	3.7	0.011	0.001	0.002	0.3	0.001	0.3	47.
99505004	337.50	-1.12	64.17	7.6E-04*	4.8	0.885	0.547	91.5	45.114	163.31	η AQR
01:22:29	0.03	0.06	0.13	3.1	0.3	0.006	0.003	0.5	0.001	0.12	43.
99505005	243.15	-21.81	34.92	5.4E-03	2.19	0.916	0.184	135.25	225.116	1.3	α SCO
01:23:27	0.08	0.15	0.07	3.2	0.02	0.001	0.001	0.17	0.001	0.3	32.
99505007	337.69	-0.43	65.87	5.9E-04*	∞	0.975	0.575	97.4	45.119	162.4	η AQR
01:30:40	0.06	0.11	0.18	3.4	-	0.009	0.004	0.7	0.001	0.2	41.
99505011	337.61	-1.49	65.19	2.4E-03	7.8	0.928	0.567	95.2	45.128	164.37	η AQR
01:42:52	0.03	0.06	0.09	2.2	0.5	0.004	0.002	0.3	0.001	0.11	38.
99505012	295.80	15.5	60.9	3.9E-04	∞	0.99	0.934	211.6	45.127	116.9	SPO
01:42:52	0.08	0.6	0.4	3.3	-	0.04	0.004	1.2	0.001	0.7	13.
99505013	337.48	-1.24	64.73	3.0E-03*	6.1	0.908	0.560	93.7	45.131	163.67	η AQR
01:47:40	0.03	0.04	0.08	1.9	0.3	0.004	0.002	0.3	0.001	0.08	41.
99505014	339.79	-1.99	65.35	1.3E-03*	15.5	0.966	0.524	91.2	45.132	166.71	η AQR
01:49:18	0.03	0.05	0.09	2.8	2.0	0.004	0.002	0.3	0.001	0.10	38.
99505015	184.34	-4.0	9.28	4.0E-02	1.934	0.506	0.956	32.34	225.139	0.50	SPO
01:51:16	0.15	0.2	0.09	3.8	0.019	0.005	0.001	0.11	0.001	0.06	57.
99505017	292.57	42.1	42.4	1.0E-03	3.8	0.73	1.006	186.7	45.140	75.0	SPO
02:02:24	0.14	0.4	0.5	3.1	0.5	0.03	0.001	0.6	0.001	0.5	40.
99505018	3.54	22.1	32.22	2.2E-03	1.104	0.844	0.172	35.7	45.141	38.6	SPO
02:03:05	0.07	0.2	0.13	4.1	0.008	0.002	0.003	0.4	0.001	0.3	60.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 4).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
99505019	337.6	-1.0	64.1	5.6E-04*	4.6	0.882	0.543	90.9	45.142	163.1	η AQR
02:05:07	0.3	0.6	0.4	2.4	0.8	0.019	0.011	1.7	0.001	1.3	38.
99808007	41.2	56.9	59.18	5.9E-04	∞	0.956	0.958	152.4	135.865	113.1	PER
20:31:58	0.3	0.3	0.19	3.1	-	0.019	0.002	0.5	0.001	0.4	33.
99808014	308.1	-11.0	20.32	3.4E-03	3.03	0.774	0.685	255.1	135.886	4.8	α CAP
21:03:36	0.7	0.6	0.16	4.1	0.16	0.011	0.007	1.1	0.001	0.4	19.
99808020	282.31	48.45	21.28	8.7E-03	3.09	0.685	0.974	205.36	135.900	32.27	κ CYG
21:24:42	0.07	0.05	0.10	3.2	0.05	0.005	0.001	0.09	0.001	0.11	87.
99808022	303.4	33.03	27.80	1.5E-03	6.8	0.882	0.804	236.1	135.905	36.8	SPO
21:31:10	0.3	0.17	0.19	4.3	0.6	0.011	0.002	0.4	0.001	0.2	61.
99808032	318.3	15.38	26.93	3.4E-03	2.26	0.762	0.537	275.0	135.922	28.01	SPO
21:57:50	0.2	0.11	0.11	3.8	0.05	0.004	0.003	0.6	0.001	0.15	37.
99808041	42.8	55.8	58.9	1.5E-03	8.4	0.89	0.946	149.1	135.937	114.4	PER
22:19:12	0.2	0.3	0.2	2.1	1.6	0.02	0.002	0.5	0.001	0.5	45.
99808053	41.3	58.52	57.6	1.7E-04	10.	0.90	0.953	150.7	135.945	109.9	PER
22:31:30	0.5	0.17	0.6	3.9	5.	0.05	0.004	1.2	0.001	0.5	41.
99808062	308.33	15.75	21.60	1.9E-03	2.20	0.683	0.696	256.9	135.959	21.91	SPO
22:52:56	0.17	0.11	0.17	4.6	0.04	0.006	0.002	0.4	0.001	0.18	60.
99808088	317.40	-5.6	25.74	4.4E-02	3.33	0.844	0.522	273.5	135.992	9.2	α CAP
23:43:00	0.19	0.3	0.03	2.3	0.07	0.003	0.002	0.4	0.001	0.3	6.
99808100	41.3	58.3	58.7	3.2E-04	∞	0.98	0.957	152.3	136.003	110.9	PER
23:58:55	0.6	0.3	0.4	3.3	-	0.04	0.004	1.1	0.001	0.5	41.
99808136	322.94	-7.54	25.84	4.4E-03	2.32	0.805	0.452	284.05	136.042	6.55	α CAP
00:57:23	0.04	0.12	0.08	4.1	0.02	0.002	0.001	0.10	0.001	0.12	31.
99808142	47.8	53.27	59.8	2.5E-04	6.7	0.87	0.907	140.7	136.051	119.0	PER
01:11:13	0.4	0.09	0.3	3.6	1.3	0.03	0.004	1.0	0.001	0.3	48.
99808149	49.10	33.92	67.15	1.6E-03	6.5	0.856	0.937	146.7	136.055	152.93	SPO
01:17:13	0.12	0.05	0.09	1.9	0.4	0.008	0.002	0.4	0.001	0.10	44.
99808150	19.1	24.80	64.3	8.1E-04	4.7	0.847	0.720	248.4	136.056	149.6	SPO
01:17:53	0.2	0.07	0.2	2.2	0.4	0.014	0.005	0.9	0.001	0.3	40.
99808167	40.5	59.60	57.4	2.1E-04	14.	0.932	0.958	152.2	136.068	108.37	PER
01:36:48	0.3	0.09	0.2	4.1	3.	0.016	0.002	0.5	0.001	0.18	48.
99808178	39.9	-3.29	66.2	3.8E-04	5.9	0.84	0.932	34.7	316.079	148.1	SPO
01:53:42	0.3	0.17	0.3	3.3	0.9	0.02	0.004	1.1	0.001	0.3	25.
99812003	47.5	56.7	59.70	8.3E-03*	17.	0.94	0.952	151.0	139.728	115.1	PER
21:08:60	0.6	0.5	0.16	0.3	7.	0.03	0.004	1.1	0.001	0.7	31.
99812006	54.74	56.39	59.43	1.4E-02	12.0	0.926	0.893	138.8	139.742	115.7	PER
21:29:58	0.14	0.17	0.09	0.2	1.5	0.009	0.002	0.3	0.001	0.2	34.
99812010	44.7	59.2	58.79	8.1E-04*	∞	0.974	0.966	154.9	139.755	111.1	PER
21:49:26	0.6	0.3	0.13	2.3	-	0.016	0.003	0.9	0.001	0.4	35.
99812030	49.7	58.9	58.1	3.4E-04	10.	0.91	0.933	147.	139.827	111.4	PER
23:38:18	1.9	0.3	0.3	3.0	2.	0.02	0.014	3.	0.001	0.4	38.
99812033	47.0	60.4	57.4	1.0E-03*	11.	0.91	0.950	150.0	139.830	108.8	PER
23:42:47	1.3	0.4	0.4	1.8	4.	0.03	0.008	2.0	0.001	0.6	33.
99812055	49.5	53.67	60.7	1.2E-02	9.5	0.901	0.942	148.3	139.849	120.1	PER
00:11:21	0.4	0.10	0.2	0.1	1.8	0.019	0.003	0.8	0.001	0.2	37.
99812082	58.6	26.9	67.0	4.8E-04	3.8	0.78	0.867	132.	139.903	168.1	SPO
01:31:56	0.7	0.2	0.3	2.1	0.4	0.03	0.013	2.	0.001	0.4	40.
99812089	44.15	-11.16	63.53	7.8E-03	8.2	0.887	0.918	36.8	319.916	132.46	SPO
01:51:37	0.11	0.06	0.07	1.0	0.4	0.006	0.002	0.4	0.001	0.11	21.
99812092	49.3	60.02	58.46	4.9E-03	∞	0.981	0.940	148.6	139.919	110.16	PER
01:55:30	0.2	0.04	0.15	0.7	-	0.011	0.001	0.4	0.001	0.11	45.
99812094	47.4	58.53	58.5	5.6E-04	12.	0.92	0.951	150.7	139.921	112.0	PER
01:59:09	0.3	0.10	0.6	2.6	7.	0.04	0.003	1.0	0.001	0.4	50.
99812095	47.0	57.60	57.5	5.1E-03*	4.9	0.81	0.950	149.3	139.922	112.5	PER
02:00:55	0.7	0.17	0.5	0.5	0.9	0.04	0.005	1.5	0.001	0.4	39.
99812096	344.44	-7.6	38.18	2.1E-03	3.19	0.961	0.126	142.0	319.925	2.3	S ι AQR
02:02:40	0.19	0.3	0.16	3.5	0.13	0.002	0.003	0.5	0.001	0.8	18.
99812097	47.3	58.0	59.2	7.6E-04	∞	0.96	0.954	151.7	139.924	113.1	PER
02:02:50	0.7	0.2	0.4	2.1	-	0.03	0.004	1.2	0.001	0.4	53.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 5).

Meteor	α_G	δ_G	v_G	m [g]	a	e	q	ω	Ω	i	Shower
Time	[°]	[°]	[km/s]	M_{abs}	[AU]	[°]	[AU]	[°]	[°]	[°]	Q
99813001	51.60	56.41	59.57	6.4E-03*	10.6	0.913	0.930	146.0	140.647	116.0	PER
20:07:35	0.08	0.18	0.07	1.1	1.1	0.009	0.001	0.2	0.001	0.3	28.
99813003	46.97	58.32	58.68	6.8E-03*	11.6	0.917	0.960	153.03	140.649	112.50	PER
20:10:13	0.06	0.11	0.10	1.1	1.3	0.009	0.001	0.17	0.001	0.16	31.
99813004	49.58	57.53	57.9	3.1E-03*	5.4	0.827	0.940	147.2	140.655	113.21	PER
20:18:44	0.09	0.10	0.2	1.5	0.5	0.016	0.001	0.4	0.001	0.19	36.
99813005	47.0	60.5	57.7	6.7E-04	15.	0.94	0.958	152.4	140.658	109.1	PER
20:23:45	0.2	0.3	0.3	2.6	6.	0.03	0.001	0.5	0.001	0.4	29.
99813015	273.6	60.03	20.67	3.6E-03	2.36	0.573	1.008	189.7	140.672	33.7	κ CYG
20:44:16	0.3	0.16	0.17	4.0	0.05	0.010	0.001	0.3	0.001	0.2	71.
99813020	50.5	60.1	58.5	2.3E-04	∞	0.982	0.939	148.5	140.682	110.3	PER
21:00:19	0.5	0.7	1.2	3.7	-	0.100	0.006	1.9	0.001	1.2	30.
99813022	49.14	59.22	57.79	5.6E-03	8.3	0.887	0.944	148.8	140.683	110.9	PER
21:01:44	0.11	0.16	0.18	1.0	1.1	0.015	0.001	0.3	0.001	0.2	35.
99813023	51.19	58.71	58.8	3.7E-03	16.	0.94	0.934	147.0	140.692	112.4	PER
21:14:25	0.06	0.11	0.3	0.9	6.	0.02	0.001	0.5	0.001	0.3	35.
99813029	49.19	58.0	58.1	8.4E-04	6.6	0.86	0.944	148.5	140.702	112.8	PER
21:29:24	0.15	0.4	0.3	2.4	1.2	0.03	0.002	0.6	0.001	0.6	38.
99813035	276.01	53.83	19.86	1.4E-02	2.62	0.619	0.998	196.00	140.712	31.17	κ CYG
21:45:38	0.07	0.06	0.09	3.1	0.03	0.005	0.001	0.07	0.001	0.11	74.
99813036	52.67	56.57	58.84	2.4E-03	6.8	0.866	0.919	143.1	140.715	115.3	PER
21:49:60	0.15	0.17	0.17	1.6	0.7	0.014	0.002	0.4	0.001	0.3	35.
99813038	48.48	59.53	58.83	1.4E-03	∞	0.979	0.953	151.5	140.718	111.2	PER
21:53:36	0.18	0.18	0.20	2.4	-	0.017	0.001	0.4	0.001	0.3	38.
99813049	47.4	59.4	57.86	9.8E-03*	9.3	0.897	0.956	151.8	140.735	110.7	PER
22:19:43	0.3	0.4	0.12	0.4	1.6	0.017	0.002	0.6	0.001	0.5	38.
99813050	49.3	59.00	59.38	1.1E-03	∞	1.000	0.949	150.8	140.737	112.3	PER
22:21:47	0.4	0.16	0.16	2.3	-	0.015	0.003	0.6	0.001	0.2	35.
99813051	9.1	38.38	59.5	3.6E-03	∞	0.979	0.716	246.0	140.737	117.8	SPO
22:22:52	0.2	0.19	0.2	0.6	-	0.013	0.005	0.8	0.001	0.3	40.
99813053	47.73	58.4	59.5	1.6E-03	∞	0.99	0.959	153.1	140.740	113.0	PER
22:26:08	0.17	0.2	0.2	1.6	-	0.02	0.001	0.4	0.001	0.3	35.
99813063	336.5	-5.17	27.57	7.7E-03	1.63	0.808	0.314	303.0	140.755	5.4	N ι AQR
22:49:31	0.2	0.15	0.07	3.3	0.02	0.001	0.003	0.5	0.001	0.2	21.
99813066	49.0	59.60	58.8	5.4E-04	∞	0.98	0.949	150.0	140.756	111.1	PER
22:51:01	0.8	0.7	1.3	2.5	-	0.11	0.006	2.0	0.001	1.2	32.
99813067	331.0	-7.5	28.62	3.5E-03	2.70	0.859	0.381	290.5	140.756	4.7	N ι AQR
22:51:59	0.3	0.3	0.13	4.0	0.08	0.004	0.004	0.6	0.001	0.3	16.
99813068	284.62	54.59	23.58	8.9E-02	3.53	0.721	0.986	200.66	140.757	36.71	κ CYG
22:52:16	0.06	0.03	0.05	1.3	0.04	0.003	0.001	0.06	0.001	0.06	60.
99813069	348.3	-3.1	24.26	5.1E-03	0.946	0.768	0.220	323.5	140.756	2.4	SPO
22:52:25	0.3	0.3	0.19	4.1	0.008	0.004	0.004	0.5	0.001	0.4	28.
99813078	355.2	-8.8	40.88	1.2E-03	2.04	0.975	0.052	157.3	320.767	27.9	S δ AQR
23:06:57	0.4	0.4	0.17	3.9	0.07	0.001	0.003	0.7	0.001	1.6	24.
99813079	49.9	57.1	59.1	1.7E-04	0.90	0.90	0.943	149.	140.767	114.6	PER
23:07:03	1.3	1.0	1.4	3.9	0.12	0.12	0.011	3.	0.001	1.6	35.
99813086	46.05	58.46	59.37	1.8E-02	∞	0.978	0.968	155.6	140.781	112.71	PER
23:27:42	0.12	0.08	0.10	-0.4	-	0.009	0.001	0.2	0.001	0.12	41.
99813097	50.96	18.52	68.6	1.7E-03	4.1	0.76	1.007	350.7	320.78	179.85	SPO
23:40:02	0.10	0.10	0.2	1.5	0.4	0.02	0.001	0.4	0.03	0.17	40.
99813102	46.83	58.69	58.70	5.3E-03	14.0	0.933	0.963	153.7	140.795	112.05	PER
23:49:18	0.13	0.06	0.12	0.8	2.0	0.009	0.001	0.3	0.001	0.10	43.
99813103	59.96	24.82	67.97	3.0E-03	5.1	0.829	0.876	134.5	140.796	172.37	SPO
23:49:42	0.08	0.09	0.09	1.0	0.2	0.007	0.002	0.4	0.001	0.16	41.
99813112	48.3	58.11	59.3	8.4E-04	∞	0.96	0.956	152.1	140.806	113.4	PER
00:06:15	0.3	0.13	0.3	2.7	-	0.03	0.002	0.7	0.001	0.3	42.
99813115	67.20	35.93	63.7	1.1E-03	3.5	0.807	0.672	104.2	140.811	151.7	SPO
00:12:55	0.18	0.16	0.3	2.0	0.3	0.015	0.007	1.3	0.001	0.3	38.
99813116	47.08	58.20	59.0	1.7E-03	14.	0.93	0.962	153.5	140.811	112.89	PER
00:13:00	0.14	0.04	0.3	1.6	5.	0.02	0.001	0.4	0.001	0.19	43.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 6).

Meteor	α_G	δ_G	v_G	m [g]	a	e	q	ω	Ω	i	Shower
Time	[°]	[°]	[km/s]	M_{abs}	[AU]	[°]	[AU]	[°]	[°]	[°]	Q
99813133	60.3	24.63	67.7	2.2E-04	4.6	0.81	0.869	133.1	140.832	172.8	SPO
00:44:32	0.2	0.18	0.3	3.8	0.6	0.03	0.005	1.2	0.001	0.3	39.
99813134	47.4	56.18	60.7	5.0E-04	∞	0.99	0.965	154.8	140.832	116.7	PER
00:45:22	0.4	0.16	0.4	2.8	-	0.04	0.002	0.80	0.001	0.3	40.
99813155	49.4	57.42	60.2	5.8E-03*	∞	0.99	0.951	151.3	140.856	114.9	PER
01:20:19	0.4	0.07	0.3	0.3	-	0.02	0.002	0.7	0.001	0.2	39.
99813164	16.7	37.17	61.8	5.1E-04	12.	0.93	0.779	238.5	140.868	127.5	SPO
01:38:22	0.2	0.09	0.5	2.6	5.	0.03	0.006	1.3	0.001	0.3	53.
99813171	46.2	59.05	58.4	1.2E-03	12.	0.92	0.966	154.6	140.871	111.3	PER
01:43:15	0.4	0.17	0.2	1.8	3.	0.02	0.002	0.7	0.001	0.3	44.
99813179	55.7	59.34	58.9	3.0E-03	∞	0.99	0.904	141.6	140.889	111.7	PER
02:10:36	0.5	0.11	0.3	1.0	-	0.02	0.004	0.8	0.001	0.2	39.
99813181	58.6	13.4	70.4	3.8E-03*	∞	0.992	0.956	332.5	320.891	168.1	SPO
02:13:32	0.5	0.3	0.5	-0.3	-	-	0.007	1.7	0.001	0.5	26.
99A19015	33.25	15.04	18.44	8.2E-03*	1.232	0.594	0.501	289.56	206.152	1.08	SPO
23:38:37	0.08	0.08	0.09	4.0	0.005	0.003	0.002	0.15	0.001	0.06	70.
99A19017	91.6	-5.6	60.5	3.1E-04*	10.	0.93	0.693	68.3	26.156	121.9	SPO
23:47:20	0.3	0.4	0.4	3.2	3.	0.02	0.009	1.5	0.001	0.7	29.
99A19021	92.88	15.40	65.70	3.4E-03	7.6	0.926	0.565	84.2	26.162	162.94	ORI
23:55:14	0.04	0.06	0.17	0.6	0.9	0.008	0.003	0.6	0.001	0.14	42.
99A19023	92.9	15.19	64.7	3.4E-04*	4.6	0.880	0.546	88.0	26.170	162.2	ORI
00:07:10	0.3	0.11	0.4	3.0	0.7	0.016	0.009	1.5	0.001	0.3	45.
99A19034	95.04	16.08	67.53	2.4E-03*	26.	0.975	0.640	74.0	26.179	165.27	ORI
00:19:55	0.10	0.06	0.11	1.0	7.	0.007	0.003	0.4	0.001	0.12	37.
99A19039	136.18	26.22	66.95	7.6E-04*	3.64	0.781	0.797	123.1	206.185	162.7	SPO
00:30:03	0.12	0.15	0.18	2.1	0.21	0.012	0.004	0.8	0.001	0.3	44.
99A19070	205.45	69.84	40.6	1.3E-03	8.9	0.892	0.969	160.43	206.216	67.2	SPO
01:14:41	0.11	0.12	0.3	3.5	1.3	0.016	0.001	0.30	0.001	0.2	35.
99A19074	93.28	15.15	65.55	3.0E-03	6.5	0.913	0.571	83.9	26.221	162.48	ORI
01:21:17	0.07	0.04	0.16	0.7	0.6	0.007	0.003	0.6	0.001	0.09	38.
99A19077	36.48	10.28	25.53	3.0E-03	1.740	0.774	0.393	112.81	26.223	4.04	S TAU
01:24:55	0.05	0.05	0.09	4.5	0.013	0.002	0.001	0.11	0.001	0.05	84.
99A19086	93.55	15.48	65.9	2.2E-04	8.	0.92	0.581	82.4	26.231	163.3	ORI
01:35:08	0.10	0.09	0.4	3.5	2.	0.02	0.008	1.5	0.001	0.2	38.
99A19088	93.50	15.15	66.97	4.7E-03	30.	0.980	0.602	78.5	26.232	162.89	ORI
01:37:40	0.06	0.04	0.07	0.6	6.	0.004	0.002	0.3	0.001	0.09	37.
99A19089	94.3	13.40	65.4	7.6E-04*	5.6	0.89	0.601	81.	26.232	159.2	ORI
01:37:40	0.2	0.18	0.6	2.0	1.5	0.03	0.011	2.	0.001	0.4	31.
99A19094	54.94	16.06	42.0	8.7E-04	2.53	0.981	0.048	157.3	26.235	15.7	SPO
01:41:54	0.08	0.11	0.4	3.7	0.16	0.002	0.002	0.4	0.001	0.7	87.
99A19112	120.71	41.7	64.0	3.4E-04	2.4	0.60	0.989	191.4	206.256	142.7	SPO
02:11:32	0.12	0.2	0.4	3.0	0.2	0.04	0.001	0.6	0.001	0.4	29.
99A19129	94.9	-10.5	59.50	4.4E-03*	9.	0.91	0.798	54.3	26.262	116.4	SPO
02:20:12	0.4	0.6	0.15	1.3	2.	0.02	0.009	1.6	0.001	0.8	13.
99A19131	94.01	15.53	66.30	1.4E-03	8.9	0.933	0.597	80.1	26.263	163.6	ORI
02:21:28	0.07	0.15	0.18	1.8	1.3	0.009	0.004	0.7	0.001	0.3	26.
99A19132	146.88	9.81	63.35	3.1E-04	4.5	0.916	0.377	252.5	26.264	171.71	SPO
02:23:22	0.03	0.05	0.19	3.9	0.3	0.005	0.004	0.7	0.001	0.12	51.
99A19134	102.99	33.33	59.5	3.1E-04	1.25	0.517	0.60	279.	206.266	158.0	SPO
02:27:15	0.12	0.07	0.9	3.1	0.10	0.015	0.03	6.	0.001	0.4	73.
99A19136	16.92	25.50	18.52	1.6E-02	1.729	0.628	0.643	265.3	206.269	10.13	SPO
02:30:06	0.11	0.13	0.06	3.1	0.010	0.002	0.001	0.2	0.001	0.09	45.
99A19141	119.6	25.	71.2	9.0E-04*	∞	0.93	0.996	180.	206.275	173	SPO
02:40:23	0.6	3.	0.7	1.3	-	0.07	0.001	3.	0.001	6	5.
99A19151	94.68	15.3	65.2	4.2E-04	4.5	0.869	0.592	82.6	26.281	163.1	ORI
02:48:54	0.12	0.2	0.3	2.6	0.5	0.012	0.006	1.0	0.001	0.4	34.
99A19154	39.26	9.66	28.23	4.9E-03	1.93	0.826	0.336	117.76	26.284	6.53	S TAU
02:52:54	0.09	0.09	0.11	3.7	0.02	0.002	0.002	0.19	0.001	0.11	44.
99A19181	93.52	15.68	66.4	8.7E-04	11.	0.948	0.587	81.0	26.301	163.8	ORI
03:17:14	0.08	0.12	0.4	2.2	4.	0.019	0.007	1.4	0.001	0.3	36.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 7).

Meteor	α_G	δ_G	v_G	m [g]	a	e	q	ω	Ω	i	Shower
Time	[°]	[°]	[km/s]	M_{abs}	[AU]	[°]	[AU]	[°]	[°]	[°]	Q
99A19184	52.1	17.6	38.7	1.4E-03*	2.02	0.960	0.080	151.3	26.302	4.0	SPO
03:19:15	0.3	0.2	0.4	3.4	0.10	0.003	0.003	0.6	0.001	0.7	47.
99A19197	96.37	16.60	67.8	1.6E-03	18.	0.963	0.667	71.0	26.313	166.64	ORI
03:34:35	0.10	0.05	0.3	1.3	8.	0.017	0.005	1.0	0.001	0.11	38.
99A19200	39.84	10.67	26.85	2.9E-02	1.639	0.793	0.339	119.47	26.314	5.32	S TAU
03:36:10	0.04	0.05	0.04	2.3	0.006	0.001	0.001	0.09	0.001	0.05	48.
99A19203	144.13	47.4	56.9	4.6E-04	1.80	0.52	0.858	127.	206.318	120.7	SPO
03:41:40	0.06	0.3	0.6	2.8	0.13	0.03	0.009	3.	0.001	0.5	33.
99A19208	95.8	15.5	67.2	4.0E-04	∞	0.95	0.65	74.	26.320	164.3	ORI
03:45:26	0.3	0.3	1.2	2.7	-	0.07	0.02	4.	0.001	0.6	36.
99A19219	93.1	15.0	66.2	2.2E-03	11	0.948	0.578	82.1	26.330	162.3	ORI
03:59:12	0.3	0.5	0.3	1.4	3	0.015	0.009	1.2	0.001	0.9	32.
99A19225	122.34	43.22	64.7	4.3E-04	3.3	0.70	0.993	186.9	206.335	140.3	SPO
04:07:01	0.09	0.10	0.4	2.7	0.3	0.03	0.001	0.4	0.001	0.2	79.
99A19226	126.62	36.53	64.0	5.2E-04	1.97	0.50	0.982	163.6	206.336	149.3	SPO
04:07:39	0.09	0.05	0.5	2.6	0.15	0.04	0.001	1.0	0.001	0.2	61.
99C13026	112.51	32.35	35.16	2.2E-03	1.451	0.904	0.139	324.00	261.515	24.1	GEM
23:21:04	0.09	0.05	0.17	3.4	0.019	0.002	0.001	0.14	0.001	0.3	63.
99C13032	113.9	55.84	30.3	1.9E-03	1.50	0.713	0.432	290.4	261.526	40.2	SPO
23:37:13	0.4	0.17	0.3	3.8	0.04	0.007	0.003	0.6	0.001	0.5	65.
99C13033	112.97	32.57	34.5	9.1E-04	1.36	0.896	0.142	324.18	261.532	24.0	GEM
23:46:08	0.09	0.07	0.3	3.9	0.03	0.004	0.002	0.15	0.001	0.4	71.
99C13034	112.65	33.04	33.87	7.5E-04	1.340	0.887	0.152	323.1	261.534	23.8	GEM
23:48:05	0.16	0.12	0.15	4.3	0.015	0.002	0.002	0.3	0.001	0.3	77.
99C13036	111.5	32.43	35.0	6.8E-04	1.50	0.902	0.148	322.4	261.535	23.1	GEM
23:49:54	0.3	0.15	0.5	4.3	0.06	0.006	0.004	0.4	0.001	0.7	62.
99C13039	112.96	32.05	33.13	2.1E-03	1.254	0.881	0.149	324.3	261.538	21.4	GEM
23:54:11	0.14	0.10	0.15	3.7	0.012	0.002	0.002	0.2	0.001	0.3	65.
99C13040	113.40	32.88	33.92	2.2E-03	1.302	0.888	0.145	324.27	261.538	24.19	GEM
23:54:17	0.09	0.05	0.11	3.5	0.010	0.001	0.001	0.13	0.001	0.19	65.
99C13055	171.21	16.35	65.1	7.2E-04	1.82	0.49	0.928	214.3	261.562	158.56	SPO
00:28:17	0.06	0.07	0.5	2.5	0.12	0.03	0.003	1.8	0.001	0.17	55.
99C13059	111.14	30.85	34.6	2.3E-03	1.46	0.902	0.143	323.31	261.566	19.5	GEM
00:34:04	0.09	0.09	0.2	3.1	0.03	0.003	0.002	0.17	0.001	0.3	47.
99C13060	112.71	32.05	33.5	3.5E-03*	1.295	0.886	0.148	324.0	261.567	21.7	GEM
00:34:56	0.11	0.13	0.2	3.2	0.017	0.003	0.002	0.2	0.001	0.4	70.
99C13062	112.98	32.5	33.5	4.9E-03	1.284	0.883	0.150	323.9	261.568	22.6	GEM
00:36:42	0.15	0.2	0.2	2.9	0.019	0.003	0.002	0.3	0.001	0.5	66.
00502010	258.3	21.86	39.68	1.0E-03	4.2	0.852	0.614	261.3	42.774	62.3	SPO
21:35:39	0.5	0.14	0.08	4.0	0.3	0.010	0.003	0.5	0.001	0.4	36.
00502012	273.5	42.13	30.6	1.6E-03	1.59	0.413	0.933	221.7	42.778	55.24	SPO
21:41:58	0.5	0.14	0.1	4.2	0.02	0.009	0.002	0.5	0.001	0.18	40.
00502027	209.63	-16.6	18.83	3.2E-03	2.43	0.705	0.717	72.4	222.822	2.4	SPO
22:49:16	0.09	0.4	0.11	5.0	0.04	0.005	0.002	0.3	0.001	0.2	63.
00502038	258.00	-2.61	33.00	4.6E-03*	1.042	0.834	0.173	325.22	42.873	43.4	SPO
00:02:24	0.10	0.06	0.09	3.3	0.005	0.001	0.001	0.16	0.001	0.2	45.
00502040	234.44	-31.22	35.15	3.5E-03	3.39	0.923	0.260	123.06	222.881	19.5	SPO
00:15:20	0.03	0.15	0.08	3.9	0.06	0.001	0.001	0.07	0.001	0.2	27.
00502042	253.41	25.17	39.60	2.6E-03	∞	0.998	0.679	249.76	42.888	57.80	SPO
00:24:58	0.08	0.03	0.08	3.2	-	0.004	0.001	0.14	0.001	0.11	80.
00502044	232.30	-9.72	21.48	1.6E-02	1.364	0.649	0.479	289.48	42.889	7.29	μ VIR
00:25:58	0.02	0.07	0.05	3.8	0.004	0.001	0.001	0.07	0.001	0.06	88.
00502058	336.68	-1.7	63.96	5.6E-04	5.1	0.900	0.514	88.0	42.924	163.3	η AQR
01:18:51	0.04	0.3	0.08	3.7	0.2	0.004	0.002	0.3	0.001	0.6	31.
00502059	305.8	24.8	55.1	6.1E-04	3.7	0.73	1.002	170.	42.927	106.2	SPO
01:22:38	0.3	0.3	0.6	3.3	0.7	0.05	0.001	1.	0.001	0.6	22.
00502061	227.64	1.15	28.74	6.2E-03	6.4	0.916	0.539	268.5	42.928	17.40	SPO
01:25:00	0.16	0.17	0.05	3.2	0.3	0.003	0.002	0.4	0.001	0.16	39.
00502064	336.67	-2.97	63.71	7.9E-04*	4.14	0.876	0.513	87.1	42.948	166.0	η AQR
01:53:53	0.03	0.10	0.10	2.8	0.15	0.004	0.002	0.4	0.001	0.2	31.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 8).

Meteor	α_G	δ_G	v_G	m [g]	a	e	q	ω	Ω	i	Shower
Time	[°]	[°]	[km/s]	M_{abs}	[AU]	[°]	[AU]	[°]	[°]	[°]	Q
00502065	335.79	-2.88	66.27	2.0E-03*	23.	0.975	0.584	98.5	42.948	165.9	η AQR
01:54:23	0.02	0.12	0.09	2.3	5.	0.005	0.002	0.3	0.001	0.2	26.
00502068	303.66	58.00	35.8	1.2E-03	7.1	0.86	0.980	160.0	42.959	58.9	SPO
02:09:54	0.16	0.07	0.5	3.9	1.7	0.03	0.001	0.4	0.001	0.5	90.
00503005	202.3	24.7	11.04	6.6E-03	1.92	0.508	0.944	215.9	43.722	9.38	SPO
21:02:28	0.3	0.2	0.11	4.9	0.03	0.007	0.001	0.3	0.001	0.11	78.
00503010	245.9	-13.0	28.11	1.0E-03	1.186	0.799	0.238	316.0	43.782	12.3	SPO
22:32:19	0.5	0.3	0.09	4.7	0.019	0.002	0.005	0.8	0.001	0.5	27.
00503011	276.2	71.58	23.43	2.7E-03	3.18	0.684	1.003	171.0	43.787	37.41	δ DRA
22:40:25	0.5	0.05	0.10	4.6	0.07	0.007	0.001	0.2	0.001	0.12	33.
00503022	199.66	-5.07	15.57	4.5E-02	3.11	0.726	0.853	230.77	43.846	1.30	SPO
00:03:46	0.05	0.07	0.10	4.4	0.06	0.005	0.001	0.05	0.001	0.04	67.
00503023	231.41	-19.09	29.64	1.4E-02	2.63	0.861	0.366	112.14	223.839	0.44	SPO
00:07:24	0.03	0.09	0.08	3.1	0.03	0.002	0.001	0.08	0.002	0.11	41.
00503026	51.5	70.9	11.39	4.9E-03	1.61	0.418	0.939	140.1	43.868	14.8	SPO
00:40:34	2.0	0.7	0.12	4.9	0.03	0.008	0.002	0.9	0.001	0.2	18.
00503029	244.99	49.42	6.35	8.5E-03	1.055	0.076	0.975	238.3	43.879	11.27	ϕ BOO
00:56:12	0.17	0.10	0.11	4.6	0.002	0.002	0.001	0.6	0.001	0.19	81.
00503033	253.62	-26.2	28.87	7.6E-03*	0.923	0.857	0.132	152.01	223.892	7.0	α SCO
01:15:50	0.12	0.2	0.08	3.5	0.003	0.001	0.001	0.16	0.001	0.4	23.
00504001	94.5	44.2	5.3	4.1E-02	1.40	0.298	0.981	151.9	44.751	3.2	SPO
22:30:43	0.9	1.0	0.2	2.8	0.02	0.012	0.001	0.6	0.001	0.2	37.
00504002	300.62	0.89	64.50	8.9E-04	4.00	0.774	0.903	220.6	44.782	142.02	SPO
23:18:42	0.03	0.06	0.06	2.8	0.09	0.005	0.001	0.2	0.001	0.10	41.
00504003	228.3	-22.7	26.45	8.8E-03	2.20	0.799	0.442	105.3	224.807	4.7	SPO
23:55:33	0.5	0.4	0.01	2.6	0.08	0.005	0.007	1.1	0.001	0.4	25.
00504004	147.2	-22.7	3.11	4.5E-02	1.203	0.163	1.007	8.0	224.837	3.09	SPO
00:41:09	0.4	0.4	0.07	4.1	0.006	0.005	0.001	0.3	0.001	0.03	50.
00504005	252.09	-15.56	36.46	1.2E-02*	1.526	0.930	0.106	328.9	44.847	18.9	SPO
00:54:29	0.15	0.19	0.05	2.1	0.014	0.001	0.002	0.3	0.001	0.5	21.
00504006	234.4	-14.5	12.01	1.3E-02	1.004	0.383	0.619	293.1	44.858	2.09	SPO
01:09:15	0.3	0.2	0.04	4.0	0.003	0.001	0.002	0.5	0.001	0.09	33.
00504008	337.49	-0.85	65.71	8.7E-04*	15.	0.962	0.571	96.6	44.863	163.1	η AQR
01:19:02	0.10	0.11	0.12	2.8	3.	0.006	0.003	0.5	0.001	0.2	37.
00504013	24.39	32.07	28.27	6.9E-03	2.575	0.826	0.447	76.70	44.870	21.63	SPO
01:28:40	0.05	0.04	0.03	3.7	0.012	0.001	0.001	0.08	0.001	0.05	47.
00504015	260.83	-18.36	39.97	8.4E-03	1.247	0.979	0.027	345.54	44.885	29.5	SPO
01:51:17	0.12	0.11	0.05	2.1	0.008	0.001	0.001	0.17	0.001	0.6	24.
00504016	338.00	-1.74	65.50	8.7E-04*	11.2	0.950	0.559	94.9	44.885	165.1	η AQR
01:52:04	0.04	0.11	0.07	2.8	0.8	0.004	0.002	0.3	0.001	0.2	34.
00505003	218.64	-29.25	23.28	1.4E-02	2.47	0.761	0.590	87.7	225.723	10.32	SPO
22:37:23	0.14	0.17	0.10	3.8	0.04	0.004	0.002	0.3	0.001	0.12	18.
00505006	302.18	46.73	34.06	5.7E-04	1.501	0.340	0.992	158.8	45.726	64.10	SPO
22:40:57	0.18	0.05	0.08	4.9	0.010	0.004	0.001	0.6	0.001	0.11	73.
00505008	192.47	3.40	11.51	2.9E-02	2.400	0.611	0.933	216.62	45.732	2.55	SPO
22:47:47	0.06	0.08	0.03	4.0	0.012	0.002	0.001	0.06	0.001	0.03	49.
00505013	148.56	24.45	6.63	9.5E-02	1.924	0.476	1.009	181.63	45.747	2.01	SPO
23:10:20	0.07	0.16	0.02	3.5	0.007	0.002	0.001	0.05	0.001	0.03	52.
00505016	244.23	-9.80	35.56	1.2E-02*	2.22	0.894	0.238	308.34	45.749	16.6	SPO
23:15:04	0.06	0.13	0.09	2.8	0.03	0.002	0.001	0.17	0.001	0.2	16.
00505018	237.3	-24.5	25.91	1.7E-03	1.43	0.756	0.348	121.5	225.758	4.9	SPO
23:28:45	0.4	0.6	0.19	4.5	0.03	0.004	0.005	0.8	0.001	0.6	17.
00505021	268.37	49.86	19.24	4.1E-03	1.211	0.204	0.964	222.3	45.764	35.39	SPO
23:38:10	0.18	0.18	0.08	4.2	0.006	0.003	0.001	0.9	0.001	0.12	63.
00505023	217.11	23.86	12.15	8.0E-03	1.630	0.447	0.902	228.90	45.771	12.28	SPO
23:46:52	0.12	0.11	0.03	4.1	0.005	0.002	0.001	0.17	0.001	0.04	49.
00505025	23.19	35.72	10.90	6.3E-03	1.022	0.342	0.673	72.06	45.795	9.14	SPO
00:23:19	0.09	0.07	0.02	4.7	0.001	0.001	0.001	0.13	0.001	0.04	45.
00505027	282.96	33.45	25.1	3.4E-03	0.883	0.253	0.660	315.5	45.803	50.9	SPO
00:34:55	0.09	0.05	0.3	3.7	0.005	0.003	0.006	1.4	0.001	0.5	49.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 9).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
00505037	321.45	43.00	47.31	1.1E-02	12.9	0.932	0.883	137.8	45.829	82.13	SPO
01:14:05	0.07	0.03	0.12	0.5	1.5	0.008	0.001	0.2	0.001	0.11	70.
00505038	227.6	72.58	15.29	5.4E-03	2.16	0.533	1.009	179.1	45.832	23.66	SPO
01:18:51	0.8	0.18	0.14	4.3	0.04	0.008	0.001	0.2	0.001	0.19	71.
00505039	338.18	-1.00	64.7	1.9E-04	5.9	0.906	0.558	93.4	45.834	163.7	η AQR
01:21:27	0.06	0.14	0.3	4.0	1.0	0.015	0.007	1.3	0.001	0.3	36.
00505041	235.69	8.13	28.5	8.7E-04	3.7	0.850	0.562	268.0	45.850	25.5	SPO
01:45:30	0.12	0.14	0.3	4.9	0.2	0.008	0.002	0.3	0.001	0.3	48.
00505044	322.82	15.1	57.4	8.8E-04	1.88	0.569	0.810	117.2	45.860	125.7	SPO
02:00:08	0.08	0.4	0.2	3.6	0.07	0.015	0.004	1.3	0.001	0.6	27.
00505045	313.00	31.74	54.2	7.8E-04	11.	0.91	0.966	155.6	45.860	99.5	SPO
02:00:48	0.14	0.19	0.7	3.8	6.	0.05	0.002	0.9	0.001	0.6	24.
00801003	321.6	64.52	30.04	5.9E-03	1.56	0.368	0.988	205.7	129.871	55.37	SPO
20:29:46	0.5	0.04	0.11	2.6	0.02	0.008	0.001	0.4	0.001	0.19	39.
00801009	275.1	36.32	19.10	1.4E-02*	4.03	0.762	0.960	209.0	129.893	25.57	SPO
21:01:28	0.2	0.08	0.11	3.1	0.12	0.007	0.001	0.2	0.001	0.12	49.
00801013	302.2	-14.9	19.97	3.2E-03	3.0	0.766	0.692	254.6	129.900	3.1	α CAP
21:12:06	1.0	0.4	0.13	3.9	0.2	0.014	0.010	1.7	0.001	0.3	17.
00801016	54.47	43.40	62.22	1.0E-03*	7.4	0.905	0.701	110.4	129.909	133.5	SPO
21:26:16	0.04	0.18	0.13	3.1	0.7	0.008	0.002	0.5	0.001	0.3	32.
00801020	33.22	57.24	58.12	2.8E-03	34.	0.972	0.956	151.9	129.922	109.48	PER
21:46:29	0.13	0.12	0.15	2.1	15.	0.013	0.001	0.3	0.001	0.17	35.
00801022	298.0	29.79	24.8	3.4E-03	3.6	0.778	0.808	237.7	129.922	32.5	SPO
21:45:52	0.5	0.19	0.2	3.8	0.2	0.013	0.004	0.9	0.001	0.3	50.
00801023	269.80	61.75	22.26	1.9E-02	2.79	0.637	1.012	186.38	129.923	35.96	κ CYG
21:47:03	0.14	0.12	0.08	3.1	0.04	0.005	0.001	0.15	0.001	0.10	50.
00801025	294.0	62.46	26.1	3.9E-03	2.28	0.562	0.998	197.7	129.927	44.4	κ CYG
21:53:40	1.0	0.11	0.2	3.5	0.09	0.018	0.001	0.7	0.001	0.3	49.
00801026	13.7	36.3	55.8	4.8E-04	1.49	0.44	0.838	245.	129.927	126.0	SPO
21:53:41	0.6	0.5	0.6	3.3	0.10	0.03	0.017	5.	0.001	0.9	34.
00801031	119.6	73.6	32.1	2.2E-03	2.22	0.675	0.721	106.	129.947	51.0	SPO
22:23:13	1.8	0.8	0.3	4.0	0.12	0.016	0.013	2.	0.001	0.6	24.
00801051	272.4	47.6	18.7	4.9E-03	2.71	0.634	0.990	200.6	129.975	28.3	κ CYG
23:05:15	0.3	0.4	0.2	4.0	0.10	0.013	0.001	0.4	0.001	0.3	47.
00801052	331.3	-6.1	28.25	4.3E-03*	1.32	0.818	0.239	314.3	129.977	7.7	N ι AQR
23:08:03	0.4	0.3	0.14	3.5	0.02	0.003	0.005	0.8	0.001	0.5	20.
00801054	291.4	47.6	20.7	3.4E-03	1.91	0.508	0.939	218.9	129.981	33.3	SPO
23:15:12	0.9	0.5	0.3	3.9	0.07	0.016	0.004	1.2	0.001	0.4	43.
00801064	289.2	27.4	19.1	4.8E-03	2.56	0.658	0.874	229.4	130.003	24.1	SPO
23:47:10	0.3	0.2	0.2	4.3	0.07	0.010	0.002	0.4	0.001	0.2	41.
00801065	24.73	10.5	65.4	2.2E-04	2.6	0.69	0.808	240.	130.001	179.6	SPO
23:55:43	0.05	0.2	0.6	4.2	0.4	0.04	0.011	3.	0.009	0.4	30.
00801070	302.2	-2.3	20.68	1.8E-02	2.56	0.737	0.673	258.1	129.054	11.3	α CAP
23:59:44	0.4	0.6	0.06	2.9	0.07	0.006	0.004	0.8	0.001	0.4	30.
00801073	36.84	57.40	56.2	2.6E-04	5.6	0.83	0.924	143.4	130.012	108.4	PER
00:01:55	0.17	0.13	0.6	4.2	1.5	0.04	0.003	1.2	0.001	0.5	83.
00801084	329.12	-13.2	31.99	4.8E-03	2.29	0.891	0.250	126.8	310.022	0.9	S ι AQR
00:19:51	0.15	0.2	0.10	3.2	0.04	0.002	0.002	0.3	0.001	0.4	27.
00801085	47.82	27.69	69.2	6.8E-04	∞	0.99	0.883	137.6	130.026	162.9	SPO
00:21:55	0.10	0.18	0.3	2.4	-	0.03	0.003	0.8	0.001	0.3	88.
00801086	302.3	-11.4	20.03	4.2E-02	2.83	0.757	0.688	255.4	130.026	5.28	α CAP
00:22:16	0.3	0.2	0.08	2.4	0.06	0.004	0.003	0.4	0.001	0.15	33.
00801090	341.3	-16.4	39.55	3.6E-03	2.66	0.962	0.100	146.9	310.029	24.5	S ι AQR
00:27:12	0.5	0.4	0.20	3.2	0.15	0.002	0.004	0.8	0.001	1.2	16.
00801091	33.73	57.04	57.6	1.2E-03	12.	0.92	0.952	150.7	130.030	109.5	PER
00:27:55	0.08	0.18	0.3	3.0	4.	0.03	0.001	0.5	0.001	0.3	77.
00801093	34.9	53.62	59.0	7.6E-04	8.	0.89	0.951	150.1	130.032	115.0	PER
00:31:25	0.2	0.12	0.6	2.7	3.	0.05	0.003	1.0	0.001	0.4	86.
00801096	343.2	-16.0	38.73	2.8E-03	2.02	0.954	0.092	149.6	310.033	26.4	S ι AQR
00:33:00	0.3	0.5	0.15	3.0	0.07	0.002	0.004	0.8	0.001	1.2	18.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 10).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
00801098	52.72	27.37	66.2	2.1E-04	4.7	0.84	0.756	116.2	130.034	164.38	SPO
00:34:11	0.10	0.06	0.5	4.1	0.9	0.03	0.008	1.8	0.001	0.15	78.
00801103	341.9	-16.5	39.45	1.0E-03	2.50	0.961	0.099	147.4	310.042	25.7	S ι AQR
00:45:52	0.5	0.7	0.18	4.0	0.16	0.002	0.006	1.3	0.001	1.7	18.
00801106	7.3	18.15	62.0	4.8E-04	4.3	0.88	0.512	273.3	130.046	149.3	SPO
00:52:34	0.3	0.14	0.6	2.8	0.9	0.02	0.013	2.3	0.001	0.5	42.
00801109	10.1	65.6	51.5	8.3E-04*	∞	0.99	1.009	171.3	130.050	91.3	SPO
00:57:44	1.0	0.5	0.5	2.7	-	0.04	0.001	1.1	0.001	0.6	44.
00801116	355.2	-10.8	28.47	2.3E-03	0.767	0.895	0.081	161.6	310.060	20.2	S δ AQR
01:14:16	0.8	0.7	0.15	3.9	0.011	0.005	0.004	0.8	0.001	1.7	17.
00801121	28.6	41.8	39.8	3.6E-04	0.650	0.563	0.284	2.4	130.063	107.1	SPO
01:18:17	0.3	0.2	0.6	4.0	0.008	0.019	0.016	0.3	0.001	1.2	79.
00801124	40.39	44.28	62.5	1.3E-03	4.9	0.81	0.920	142.3	130.065	131.27	SPO
01:21:26	0.06	0.08	0.3	2.3	0.6	0.02	0.002	0.7	0.001	0.19	84.
00801130	35.97	55.15	59.3	1.0E-03	∞	0.966	0.943	149.0	130.075	113.32	PER
01:35:53	0.06	0.05	0.2	2.5	-	0.018	0.001	0.4	0.001	0.16	78.
00801132	341.4	-15.6	37.8	1.7E-03	2.04	0.948	0.106	147.2	310.077	20.8	S δ AQR
01:38:51	0.4	0.3	0.2	3.3	0.08	0.002	0.003	0.6	0.001	0.9	23.
00801136	341.7	-15.97	39.54	7.0E-03	2.54	0.962	0.096	147.9	310.080	24.2	S δ AQR
01:43:45	0.2	0.14	0.10	2.3	0.06	0.001	0.002	0.4	0.001	0.5	23.
00809001	182.21	38.78	11.77	9.3E-02	1.763	0.474	0.926	137.10	137.523	11.60	SPO
20:11:13	0.14	0.11	0.08	3.2	0.013	0.004	0.001	0.13	0.001	0.10	49.
00809002	267.5	63.49	21.79	4.4E-03	2.57	0.606	1.013	183.08	137.534	35.48	κ CYG
20:28:03	0.2	0.12	0.16	4.0	0.06	0.009	0.001	0.17	0.001	0.20	60.
00809006	309.50	-4.5	19.34	1.5E-02	2.39	0.711	0.690	256.6	137.558	8.16	α CAP
21:02:41	0.13	0.2	0.15	3.3	0.05	0.006	0.002	0.2	0.001	0.15	25.
00809008	44.3	56.42	59.2	7.2E-04*	11.	0.92	0.953	151.1	137.572	114.4	PER
21:24:23	0.2	0.15	0.5	3.0	5.	0.04	0.002	0.8	0.001	0.4	43.
00809010	346.08	2.73	36.59	4.3E-03	1.438	0.940	0.086	332.65	137.578	25.1	N ι AQR
21:33:25	0.07	0.06	0.10	3.4	0.012	0.001	0.001	0.12	0.001	0.3	38.
00809013	296.74	40.00	20.23	3.2E-03	2.10	0.573	0.896	226.99	137.585	29.97	SPO
21:43:53	0.07	0.09	0.13	4.6	0.03	0.006	0.001	0.17	0.001	0.16	64.
00809026	4.07	53.65	55.17	3.7E-03*	∞	1.01	0.944	210.3	137.628	100.30	SPO
22:48:34	0.14	0.08	0.09	1.3	-	0.01	0.001	0.3	0.001	0.12	50.
00809027	10.7	69.87	43.16	6.2E-04	2.15	0.529	1.011	173.2	137.633	80.9	SPO
22:56:30	0.9	0.18	0.18	3.7	0.07	0.015	0.001	0.9	0.001	0.3	59.
00809029	334.8	66.5	31.4	9.2E-04	1.41	0.30	0.977	212.2	137.635	59.4	SPO
22:58:59	0.8	0.3	0.4	4.2	0.04	0.02	0.003	1.9	0.001	0.6	68.
00809030	334.8	71.53	32.4	6.5E-04	1.58	0.361	1.009	190.2	137.636	60.3	SPO
23:00:32	0.5	0.11	0.4	4.4	0.05	0.020	0.001	0.5	0.001	0.5	71.
00809044	224.8	33.2	3.0	5.6E-02	1.160	0.127	1.013	173.80	137.666	4.1	SPO
23:45:05	0.9	0.8	0.2	4.2	0.013	0.010	0.001	0.12	0.001	0.4	70.
00809048	44.8	57.3	59.4	7.7E-04	∞	0.96	0.951	150.9	137.674	113.5	PER
23:58:09	0.6	0.3	0.2	2.6	-	0.02	0.004	1.0	0.001	0.5	46.
00809057	62.8	28.6	42.27	7.3E-04	0.614	0.860	0.086	11.6	137.685	152.3	SPO
00:14:30	0.2	0.4	0.13	3.5	0.002	0.004	0.002	0.3	0.001	1.3	51.
00809058	45.1	58.2	56.0	2.3E-04	3.7	0.75	0.936	145.2	137.689	110.0	PER
00:20:36	0.6	0.2	0.5	3.4	0.5	0.05	0.005	1.5	0.001	0.5	50.
00809061	44.2	58.11	55.5	3.8E-04	3.2	0.71	0.941	145.7	137.693	109.6	PER
00:26:52	0.2	0.14	0.3	3.8	0.3	0.02	0.002	0.9	0.001	0.3	58.
00809065	342.78	0.6	36.05	2.9E-03	1.74	0.931	0.119	326.1	137.696	18.9	N δ AQR
00:30:57	0.19	0.2	0.08	3.6	0.03	0.001	0.002	0.4	0.001	0.6	10.
00809067	45.17	-6.93	64.98	6.3E-04*	6.0	0.839	0.972	24.6	317.700	139.72	SPO
00:36:06	0.06	0.05	0.10	3.6	0.3	0.008	0.001	0.3	0.001	0.09	35.
00809070	31.1	30.72	62.7	2.3E-04	2.02	0.54	0.930	220.0	137.704	148.6	SPO
00:43:12	0.3	0.06	0.4	3.3	0.13	0.03	0.006	1.9	0.001	0.3	53.
00809072	6.2	52.3	49.4	2.6E-04	2.04	0.56	0.904	225.8	137.708	97.5	SPO
00:49:23	0.4	0.2	0.4	4.0	0.11	0.02	0.005	1.5	0.001	0.4	82.
00809074	182.74	44.89	12.44	1.2E-01	1.690	0.456	0.920	134.88	137.710	13.99	SPO
00:51:35	0.07	0.09	0.04	3.1	0.005	0.002	0.001	0.08	0.001	0.06	17.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 11).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
00809078	60.13	-8.0	58.9	3.6E-04*	1.99	0.520	0.953	325.7	317.725	128.7	SPO
01:14:17	0.20	0.4	0.3	3.8	0.09	0.020	0.004	1.5	0.001	0.5	34.
00809081	31.7	37.01	64.4	1.7E-04	4.1	0.76	0.990	199.1	137.729	140.2	SPO
01:20:09	0.2	0.14	0.2	3.2	0.4	0.02	0.002	0.7	0.001	0.3	65.
00809084	286.93	56.06	24.88	9.0E-03	3.52	0.721	0.985	201.21	137.732	39.3	κ CYG
01:24:47	0.19	0.04	0.18	4.3	0.13	0.010	0.001	0.16	0.001	0.2	62.
00809088	326.12	-13.47	26.09	1.2E-02	2.504	0.820	0.450	283.48	137.756	0.11	SPO
01:29:38	0.02	0.04	0.04	3.7	0.013	0.001	0.001	0.06	0.011	0.04	47.
00809089	357.70	62.84	42.51	4.0E-03	1.90	0.483	0.983	204.8	137.736	80.71	SPO
01:30:33	0.07	0.04	0.11	2.8	0.03	0.007	0.001	0.3	0.001	0.13	87.
00809090	45.4	54.78	59.5	1.8E-04	7.	0.87	0.947	149.3	137.736	116.9	PER
01:31:40	0.4	0.11	0.9	3.7	4.	0.06	0.004	1.5	0.001	0.6	54.
00809093	89.	82.9	31.51	1.3E-03	1.48	0.428	0.845	116.	137.739	57.3	SPO
01:35:41	4.	0.5	0.11	4.1	0.04	0.013	0.009	2.	0.001	0.4	51.
00809098	50.1	60.4	57.6	1.3E-04	∞	0.96	0.910	142.4	137.747	108.5	PER
01:48:01	0.9	0.3	0.6	4.1	-	0.05	0.007	1.6	0.001	0.5	62.
00811011	49.29	61.8	57.53	1.4E-03	∞	0.993	0.935	147.6	139.482	107.2	PER
21:12:09	0.12	0.3	0.14	2.7	-	0.015	0.001	0.3	0.001	0.3	40.
00811015	49.36	57.5	58.7	1.1E-03	9.	0.90	0.933	146.5	139.495	113.5	PER
21:32:10	0.14	0.4	0.5	2.7	4.	0.04	0.003	0.9	0.001	0.6	38.
00811021	50.4	56.0	59.7	2.7E-04	11.	0.92	0.928	145.5	139.525	116.3	PER
22:16:21	0.3	0.5	0.4	3.6	5.	0.04	0.003	0.9	0.001	0.7	40.
00811031	286.14	39.35	19.08	1.1E-02	2.87	0.671	0.946	213.4	139.567	26.92	SPO
23:20:18	0.18	0.18	0.12	3.8	0.06	0.006	0.001	0.2	0.001	0.15	28.
00811043	46.01	56.99	58.56	1.0E-03	7.1	0.866	0.957	151.8	139.598	113.86	PER
00:06:20	0.15	0.06	0.10	2.7	0.4	0.008	0.001	0.3	0.001	0.10	55.
00811044	47.18	56.88	57.97	6.9E-04	5.2	0.818	0.947	148.8	139.606	113.72	PER
00:18:43	0.18	0.06	0.19	2.7	0.4	0.015	0.002	0.5	0.001	0.16	55.
00811053	273.0	50.53	18.04	1.3E-02*	2.46	0.594	0.998	196.48	139.625	27.88	κ CYG
00:47:16	0.2	0.12	0.14	3.6	0.04	0.007	0.001	0.19	0.001	0.18	78.
00811055	9.1	28.83	53.7	2.3E-04	1.69	0.758	0.410	292.5	139.627	123.5	SPO
00:49:21	0.2	0.11	0.3	3.7	0.06	0.006	0.007	1.2	0.001	0.4	49.
00811057	47.0	58.62	58.7	4.2E-04	16.	0.94	0.952	151.1	139.630	111.90	PER
00:54:01	0.5	0.15	0.3	3.2	6.	0.02	0.003	0.8	0.001	0.3	53.
00811060	19.3	48.97	52.75	6.2E-04	1.70	0.456	0.923	224.2	139.630	110.3	SPO
00:54:51	0.3	0.20	0.13	2.9	0.03	0.010	0.004	1.2	0.001	0.3	83.
00811062	44.7	58.8	58.17	3.1E-04	10.	0.910	0.964	154.0	139.633	111.2	PER
00:58:54	0.5	0.2	0.20	3.2	2.	0.018	0.003	0.8	0.001	0.3	52.
00811065	328.86	6.1	30.65	5.4E-04	2.65	0.861	0.369	292.0	139.636	22.3	SPO
01:03:30	0.17	0.4	0.36	4.4	0.14	0.008	0.004	0.4	0.001	0.6	46.
00811066	50.2	57.55	58.8	2.3E-04	∞	0.913	0.929	145.8	139.637	113.6	PER
01:05:34	0.2	0.07	0.7	3.5	-	0.049	0.003	1.2	0.001	0.4	58.
00811080	47.5	57.68	57.6	7.5E-04	5.2	0.82	0.945	148.1	139.666	112.4	PER
01:48:55	0.3	0.11	0.3	2.7	0.6	0.02	0.002	0.7	0.001	0.3	59.
00811081	36.6	23.3	66.1	1.7E-04	2.8	0.67	0.937	216.	139.667	164.8	SPO
01:49:48	0.2	0.2	0.9	3.4	0.6	0.07	0.008	2.	0.001	0.5	55.
00811082	45.8	57.7	58.9	3.3E-04	12.	0.92	0.960	153.0	139.668	113.1	PER
01:51:12	0.5	0.2	0.3	3.5	4.	0.03	0.003	1.0	0.001	0.4	54.
00811088	25.9	24.6	53.6	2.4E-04	0.94	0.543	0.43	310.	139.672	149.8	SPO
01:57:00	0.6	0.4	0.9	3.7	0.05	0.017	0.04	2.	0.001	1.1	49.
00811093	37.4	48.7	54.2	2.5E-04	1.36	0.26	1.009	168.	139.680	119.9	SPO
02:09:03	0.6	0.3	1.0	3.8	0.12	0.07	0.002	3.	0.001	0.9	69.
00811094	326.49	-1.47	25.31	4.0E-03	1.98	0.774	0.447	286.32	139.682	10.92	α CAP
02:11:29	0.05	0.07	0.13	4.2	0.02	0.003	0.002	0.11	0.001	0.10	66.
00811095	45.0	57.77	59.2	9.2E-04	∞	0.95	0.966	154.6	139.684	113.2	PER
02:14:45	0.5	0.16	0.4	2.5	-	0.04	0.003	1.0	0.001	0.4	59.
00812002	48.9	58.29	59.25	1.4E-03*	∞	0.962	0.950	150.7	140.570	113.08	PER
00:24:31	0.4	0.07	0.19	1.4	-	0.015	0.003	0.7	0.001	0.16	46.
00812006	287.22	33.33	18.12	2.6E-03	2.97	0.686	0.933	216.43	140.582	23.8	SPO
00:43:31	0.15	0.12	0.20	4.8	0.09	0.010	0.001	0.17	0.001	0.2	84.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 12).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
00812007	17.7	18.3	62.8	1.5E-04	5.7	0.93	0.468	277.	140.583	156.9	SPO
00:44:32	0.5	0.3	0.6	3.8	1.6	0.02	0.014	2.	0.001	0.8	38.
00812012	52.6	58.10	58.5	8.2E-04*	9.	0.90	0.920	143.7	140.602	113.0	PER
01:13:00	0.4	0.15	0.4	2.0	2.	0.03	0.004	0.9	0.001	0.3	48.
00812013	50.81	57.27	60.21	2.0E-03	∞	0.997	0.939	148.7	140.602	115.17	PER
01:13:05	0.16	0.05	0.10	1.8	-	0.009	0.001	0.3	0.001	0.09	51.
00812014	1.6	46.38	48.5	1.9E-04	1.99	0.635	0.725	254.5	140.603	95.9	SPO
01:15:02	0.3	0.16	0.5	4.0	0.13	0.020	0.008	2.0	0.001	0.6	73.
00812016	50.4	57.31	59.4	5.2E-04	14.	0.93	0.939	148.0	140.605	114.6	PER
01:17:01	0.3	0.11	0.3	3.1	5.	0.03	0.002	0.7	0.001	0.3	58.
00812019	48.0	58.06	59.7	1.4E-04	∞	0.99	0.957	152.6	140.608	113.6	PER
01:22:13	0.4	0.13	1.1	4.2	-	0.08	0.004	1.5	0.001	0.7	55.
00812021	327.16	-6.26	29.27	6.6E-03	4.23	0.901	0.420	283.66	140.610	7.32	SPO
01:24:57	0.02	0.03	0.07	3.2	0.07	0.002	0.001	0.04	0.001	0.04	49.
00812035	47.3	58.92	59.28	2.3E-04	∞	0.991	0.960	153.5	140.627	112.18	PER
01:50:31	0.2	0.08	0.09	3.6	-	0.008	0.001	0.4	0.001	0.12	58.
00812036	24.81	50.05	52.90	1.3E-03	1.58	0.389	0.964	214.2	140.630	112.03	SPO
01:54:55	0.09	0.05	0.16	2.8	0.03	0.010	0.001	0.7	0.001	0.15	82.
00812038	48.13	58.35	58.55	2.2E-03	10.5	0.909	0.953	151.0	140.635	112.50	PER
02:02:11	0.06	0.02	0.12	1.8	1.1	0.010	0.001	0.2	0.001	0.09	57.
00812039	37.6	10.4	64.7	1.4E-04	2.2	0.63	0.826	59.	320.635	172.0	SPO
02:02:46	0.3	0.3	0.9	3.9	0.3	0.05	0.016	4.	0.001	0.5	35.
00812042	49.1	57.67	58.0	2.7E-04	5.9	0.84	0.944	148.3	140.637	113.1	PER
02:05:17	0.5	0.13	0.3	3.6	0.8	0.02	0.003	0.9	0.001	0.3	57.
00812048	51.14	58.53	58.2	2.3E-04	9.	0.90	0.931	146.0	140.653	112.3	PER
02:28:50	0.17	0.04	0.3	3.1	2.	0.03	0.002	0.6	0.001	0.2	60.
00812049	49.1	58.38	59.2	5.6E-04	∞	0.96	0.948	150.4	140.656	112.9	PER
02:33:44	0.4	0.10	0.8	2.2	-	0.06	0.004	1.2	0.001	0.5	55.
00A20003	42.0	10.46	26.80	6.9E-03	1.59	0.790	0.335	120.3	27.773	6.3	S TAU
21:06:19	0.5	0.17	0.08	3.2	0.04	0.002	0.005	0.9	0.001	0.3	26.
00A20002	22.42	9.62	20.57	2.9E-02	2.40	0.740	0.623	263.1	207.756	0.14	SPO
21:02:53	0.13	0.07	0.06	2.9	0.02	0.003	0.001	0.2	0.006	0.05	30.
00A20004	93.7	15.69	64.7	2.8E-04	5.1	0.897	0.527	89.8	27.777	163.1	ORI
21:12:39	0.3	0.15	0.3	2.8	0.6	0.012	0.008	1.2	0.001	0.3	36.
00A20006	44.1	12.0	28.55	3.9E-03	1.60	0.822	0.284	125.7	27.780	6.1	S TAU
21:15:44	0.4	0.2	0.08	3.2	0.03	0.002	0.005	0.8	0.001	0.3	25.
00A20007	38.2	17.21	26.87	9.3E-03	1.72	0.797	0.348	297.8	207.791	2.37	N TAU
21:33:07	0.3	0.15	0.10	3.1	0.03	0.002	0.003	0.5	0.001	0.18	29.
00A20009	94.97	15.78	64.72	6.2E-04	4.2	0.870	0.551	87.7	27.793	163.7	ORI
21:36:12	0.19	0.11	0.18	3.1	0.3	0.009	0.005	0.8	0.001	0.2	36.
00A20012	228.3	78.43	33.07	4.4E-03	2.48	0.598	0.995	181.86	207.803	57.12	SPO
21:50:16	1.0	0.05	0.11	3.0	0.06	0.009	0.001	0.20	0.001	0.17	27.
00A20015	17.8	40.91	28.1	5.3E-03	4.2	0.860	0.580	264.4	207.809	27.4	SPO
21:59:02	0.5	0.12	0.2	3.0	0.3	0.010	0.005	0.8	0.001	0.2	44.
00A20016	46.8	12.5	27.7	3.6E-03	1.34	0.804	0.262	130.8	27.810	6.5	S TAU
21:59:43	0.6	0.2	0.2	3.1	0.04	0.004	0.007	1.1	0.001	0.4	24.
00A20019	13.5	22.35	19.2	6.1E-03	2.38	0.712	0.687	255.3	207.816	8.96	SPO
22:08:45	0.5	0.19	0.3	3.8	0.09	0.011	0.005	0.8	0.001	0.18	43.
00A20020	97.27	17.15	66.80	8.4E-04	7.6	0.916	0.632	76.3	27.818	167.53	ORI
22:11:20	0.10	0.09	0.20	2.8	1.0	0.011	0.004	0.7	0.001	0.18	35.
00A20022	93.81	15.96	65.0	5.0E-04	5.6	0.906	0.531	88.9	27.823	163.8	ORI
22:18:18	0.20	0.16	0.3	3.1	0.8	0.012	0.007	1.1	0.001	0.4	34.
00A20026	93.32	15.39	65.67	8.7E-04	10.1	0.947	0.537	86.9	27.828	162.61	ORI
22:26:47	0.10	0.07	0.20	2.6	1.8	0.009	0.004	0.7	0.001	0.15	33.
00A20028	41.7	10.0	28.02	2.2E-03	1.79	0.817	0.327	119.5	27.829	7.0	S TAU
22:27:35	0.6	0.3	0.17	3.5	0.06	0.004	0.007	1.1	0.001	0.4	26.
00A20029	121.7	45.7	73.1	1.7E-04	-1.78	1.55	0.986	190.1	207.835	139.8	SPO
22:36:27	0.5	0.4	0.6	3.2	0.20	0.06	0.002	0.9	0.001	0.7	32.
00A20030	187.3	74.8	36.92	4.4E-03*	1.83	0.459	0.991	170.1	207.836	67.3	SPO
22:38:09	0.5	0.2	0.17	2.6	0.04	0.010	0.001	0.7	0.001	0.2	28.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 13).

Meteor	α_G	δ_G	v_G	m [g]	a	e	q	ω	Ω	i	Shower
Time	[°]	[°]	[km/s]	M_{abs}	[AU]	[°]	[AU]	[°]	[°]	[°]	Q
00A20033	41.0	10.79	27.46	2.6E-02	1.75	0.807	0.337	118.7	27.839	5.7	S TAU
22:40:51	0.4	0.15	0.07	2.0	0.04	0.002	0.004	0.7	0.001	0.2	25.
00A20034	116.18	34.64	70.4	7.0E-04	∞	0.99	0.963	200.8	207.840	157.3	SPO
22:43:19	0.17	0.16	0.3	2.4	-	0.02	0.001	0.5	0.001	0.3	32.
00A20035	5.0	26.98	12.88	1.0E-02	1.579	0.490	0.805	245.2	207.845	8.72	SPO
22:50:50	0.3	0.19	0.10	4.0	0.013	0.004	0.002	0.5	0.001	0.10	59.
00A20037	106.0	62.5	58.2	5.9E-04	∞	0.97	0.873	221.4	207.853	108.8	SPO
23:01:46	0.7	0.3	0.6	2.9	-	0.04	0.006	1.4	0.001	0.6	32.
00A20038	94.1	15.54	63.7	7.2E-04	3.4	0.851	0.512	93.3	27.854	162.6	ORI
23:03:27	0.3	0.19	0.4	2.8	0.4	0.017	0.011	1.8	0.001	0.4	32.
00A20040	94.89	15.55	66.04	1.3E-03	8.6	0.933	0.576	82.8	27.855	163.49	ORI
23:05:35	0.12	0.08	0.15	2.1	1.0	0.008	0.004	0.6	0.001	0.18	33.
00A20047	72.3	30.05	48.4	4.4E-04	1.47	0.975	0.037	341.9	207.881	128	SPO
23:42:32	0.3	0.18	0.6	3.3	0.08	0.001	0.003	1.0	0.001	2	37.
00A20051	37.7	62.3	34.3	1.8E-03	1.96	0.710	0.570	271.8	207.891	54.3	SPO
23:57:11	0.9	0.3	0.5	3.0	0.13	0.016	0.008	1.6	0.001	0.8	49.
00A20052	94.8	15.2	66.6	2.2E-03*	∞	0.96	0.585	80.	27.894	162.9	ORI
00:01:39	0.5	0.3	0.5	1.3	-	0.03	0.014	2.	0.001	0.7	23.
00A20054	123.5	26.1	69.3	1.6E-03	4.2	0.76	0.993	173.4	207.898	169.3	SPO
00:07:25	0.2	0.3	0.2	1.6	0.4	0.02	0.001	0.8	0.001	0.4	35.
00A20056	95.4	15.35	65.6	3.0E-03	5.9	0.902	0.579	83.2	27.899	163.1	ORI
00:09:14	0.2	0.10	0.2	1.1	0.8	0.012	0.007	1.0	0.001	0.2	26.
00A20057	106.8	1.67	63.3	3.1E-04	2.47	0.639	0.892	42.8	27.901	141.7	SPO
00:12:19	0.3	0.20	0.3	3.3	0.13	0.019	0.006	1.4	0.001	0.4	28.
00A20058	126.0	30.21	67.0	2.9E-04	2.64	0.627	0.986	167.6	207.904	161.1	SPO
00:15:18	0.2	0.20	0.2	3.2	0.13	0.018	0.001	0.9	0.001	0.4	34.
00A20059	304.9	65.1	21.32	6.9E-03	2.67	0.636	0.969	201.2	207.906	33.3	SPO
00:18:42	0.8	0.2	0.17	3.8	0.07	0.010	0.001	0.5	0.001	0.2	29.
00A20060	107.8	7.2	62.8	3.1E-04	1.74	0.51	0.860	54.	27.910	151.3	SPO
00:25:05	0.6	0.5	0.3	2.6	0.08	0.02	0.014	2.	0.001	0.8	31.
00A20062	92.5	16.17	65.7	1.1E-03	∞	0.96	0.515	89.	27.914	164.0	ORI
00:31:07	0.4	0.13	0.8	1.8	-	0.04	0.017	2.	0.001	0.4	30.
00A20063	95.4	16.12	65.6	4.2E-04	6.	0.90	0.573	84.	27.915	164.7	ORI
00:31:28	0.3	0.15	0.7	2.6	2.	0.03	0.015	2.	0.001	0.4	30.
00A20064	41.5	8.5	24.5	7.8E-03	1.45	0.738	0.380	117.2	27.921	7.3	S TAU
00:39:34	0.7	0.5	0.5	3.4	0.06	0.013	0.011	1.4	0.001	0.6	24.
00A20066	84.6	21.5	60.9	7.9E-04	4.4	0.941	0.259	121.8	27.924	174.6	SPO
00:45:54	0.4	0.2	0.5	2.4	0.8	0.010	0.011	1.8	0.001	0.6	29.
00A20067	40.3	17.69	26.4	2.5E-03	1.51	0.782	0.329	301.8	207.928	2.2	N TAU
00:52:30	0.3	0.19	0.4	3.6	0.04	0.009	0.006	0.6	0.001	0.2	40.
00A20068	93.0	15.71	65.6	2.8E-03	11.	0.952	0.526	88.2	27.930	163.13	ORI
00:54:15	0.2	0.08	0.2	1.0	3.	0.011	0.006	0.9	0.001	0.20	24.
00A20069	35.3	9.73	25.2	4.6E-03	1.99	0.782	0.434	106.5	27.931	3.9	S TAU
00:54:39	0.4	0.19	0.3	3.3	0.06	0.007	0.005	0.7	0.001	0.2	32.
00A20073	40.1	11.31	28.14	5.7E-03	1.95	0.826	0.340	117.2	27.938	4.88	S TAU
01:05:17	0.2	0.13	0.16	3.2	0.04	0.004	0.003	0.4	0.001	0.17	49.
00A20077	158.6	36.70	60.9	6.6E-04	8.3	0.928	0.602	100.2	207.948	125.3	LEO MIN
01:19:09	0.2	0.19	0.2	3.2	1.5	0.012	0.006	0.9	0.001	0.4	34.
00A20083	95.1	15.1	65.0	2.8E-04	4.8	0.88	0.56	86.	27.952	162.2	ORI
01:25:06	0.6	0.4	0.9	2.9	1.8	0.04	0.02	3.	0.001	0.8	28.
00A20084	137.7	13.3	69.7	3.3E-04	∞	1.00	0.742	299.	27.953	174.6	SPO
01:26:59	0.5	0.2	0.9	2.8	-	0.06	0.016	3.	0.001	0.5	32.
00A20087	96.6	15.8	65.9	3.9E-04	5.7	0.894	0.605	80.3	27.958	164.3	ORI
01:33:45	0.6	0.2	0.3	2.8	1.0	0.019	0.014	1.6	0.001	0.5	28.
00A20091	43.0	12.5	29.31	3.1E-03	1.80	0.840	0.288	123.8	27.968	5.2	S TAU
01:47:28	0.5	0.4	0.13	3.5	0.05	0.003	0.006	0.9	0.001	0.5	14.
00A20092	85.4	14.9	52.9	3.4E-04	1.26	0.876	0.156	143.6	27.968	151.2	SPO
01:49:13	0.5	0.3	0.4	3.0	0.05	0.006	0.008	1.3	0.001	1.1	28.
00A20094	20.85	6.67	19.5	5.4E-02	2.45	0.729	0.663	78.01	27.973	1.19	SPO
01:53:27	0.08	0.08	0.2	2.4	0.06	0.008	0.003	0.17	0.001	0.03	50.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 14).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
00A20095	120.0	19.7	71.1	2.9E-04	10.	0.90	0.995	1.	27.971	178.4	SPO
01:54:54	0.8	0.6	1.1	2.8	3.	0.11	0.001	3.	0.001	1.0	31.
00A20097	92.87	18.88	64.5	4.2E-04	4.8	0.90	0.483	95.	27.978	169.8	ORI
02:04:05	0.15	0.08	1.0	2.5	1.9	0.04	0.020	4.	0.001	0.3	29.
00A20099	164.3	40.2	57.2	5.3E-04	5.2	0.89	0.593	98.	207.980	112.9	SPO
02:05:38	0.3	0.4	0.8	2.5	1.7	0.04	0.015	3.	0.001	0.8	37.
00A20105	106.8	9.3	67.1	9.6E-04	4.3	0.79	0.88	43.	27.994	156.0	SPO
02:27:04	1.5	1.0	0.4	1.6	0.8	0.04	0.03	5.	0.001	1.8	20.
00A20109	338.1	71.7	30.60	1.4E-02	7.1	0.873	0.899	217.6	208.000	46.3	SPO
02:34:58	0.5	0.2	0.19	2.1	0.7	0.012	0.001	0.3	0.001	0.2	30.
00A20114	93.8	15.40	64.30	3.6E-03	4.4	0.883	0.516	91.5	28.015	162.4	ORI
02:57:36	0.4	0.12	0.19	0.5	0.4	0.012	0.010	1.1	0.001	0.3	31.
00A20118	156.51	6.95	59.01	2.1E-03	3.85	0.957	0.164	225.0	28.022	170.7	SPO
03:07:26	0.10	0.07	0.14	2.4	0.17	0.002	0.002	0.4	0.001	0.3	34.
00A20120	94.9	15.32	66.2	1.9E-03	11.	0.948	0.576	82.2	28.025	163.0	ORI
03:11:23	0.5	0.14	0.3	1.0	4.	0.019	0.012	1.5	0.001	0.3	22.
00A20124	96.5	15.9	67.4	4.5E-04	∞	0.97	0.63	76.	28.031	165.0	ORI
03:19:43	1.1	0.3	0.7	2.3	-	0.05	0.03	3.	0.001	0.7	22.
00A20126	43.42	11.08	28.1	2.4E-03	1.64	0.814	0.305	123.1	28.034	6.66	SPO
03:24:04	0.12	0.15	0.3	4.0	0.03	0.005	0.003	0.3	0.001	0.19	63.
00A20127	96.7	14.8	64.9	7.8E-04	3.9	0.849	0.593	83.2	28.036	162.2	ORI
03:26:44	0.4	0.3	0.4	2.1	0.5	0.018	0.011	1.7	0.001	0.6	31.
00A20131	94.4	41.52	61.9	1.1E-03	3.7	0.85	0.557	268.	208.042	140.7	SPO
03:35:53	0.4	0.12	0.8	1.7	0.9	0.03	0.016	3.	0.001	0.5	45.
00A20132	94.9	15.91	63.0	2.9E-04	2.7	0.81	0.51	96.	28.045	163.4	ORI
03:40:11	0.2	0.11	1.0	3.3	0.6	0.03	0.02	5.	0.001	0.4	26.
00A20135	158.1	37.5	62.27	6.0E-03	∞	0.990	0.644	106.9	208.047	125.9	LEO MIN
03:43:40	0.3	0.3	0.16	0.7	-	0.011	0.007	0.9	0.001	0.5	28.
00A20137	93.8	15.73	65.0	4.5E-04	6.1	0.91	0.527	89.	28.049	163.2	ORI
03:46:49	0.3	0.08	0.6	2.4	2.0	0.03	0.014	2.	0.001	0.3	29.
00A20138	93.1	17.6	67.	1.7E-04*	∞	0.99	0.54	86.	28.051	167.4	ORI
03:48:30	0.8	0.4	3.	3.0	-	0.15	0.06	3.	0.001	1.0	43.
00A20139	131.7	48.59	62.9	3.3E-03	4.3	0.77	0.993	174.2	208.051	128.7	SPO
03:49:21	0.5	0.13	0.5	0.6	0.7	0.04	0.001	1.2	0.001	0.3	29.
00A20144	139.1	7.97	64.3	6.0E-04	2.6	0.774	0.597	274.8	28.057	164.2	SPO
03:57:37	0.3	0.19	0.4	2.6	0.2	0.017	0.011	1.9	0.001	0.4	27.
00A20145	94.5	15.38	66.0	1.0E-03	10.	0.945	0.562	84.0	28.058	162.9	ORI
03:59:23	0.4	0.16	0.4	2.2	3.	0.019	0.011	1.5	0.001	0.4	29.
00A20147	136.7	19.05	66.4	1.7E-03*	2.7	0.73	0.752	115.	208.060	175.4	SPO
04:00:57	0.5	0.14	0.5	1.0	0.4	0.03	0.014	2.	0.001	0.4	30.
00A20154	94.3	16.6	66.3	4.6E-04	∞	0.96	0.56	84.	28.064	165.4	ORI
04:08:18	0.3	0.9	0.3	2.6	-	0.05	0.05	2.	0.001	1.0	20.
00A20156	94.4	14.68	65.3	8.9E-04	6.5	0.915	0.552	86.1	28.070	161.3	ORI
04:16:00	0.3	0.10	0.4	2.4	1.3	0.017	0.009	1.4	0.001	0.3	26.
00A20157	118.6	37.9	68.7	1.2E-03	10.	0.90	0.973	198.	208.074	150.9	SPO
04:22:12	1.0	0.2	1.0	1.1	2.	0.09	0.007	3.	0.001	0.5	34.
00A20159	97.8	15.5	66.40	5.1E-03	6.1	0.895	0.640	75.9	28.075	164	ORI
04:23:15	0.4	1.3	0.18	-0.1	0.8	0.013	0.011	1.5	0.001	2	25.
00A20163	93.9	15.31	65.9	2.6E-03	11.	0.95	0.549	85.4	28.078	162.61	ORI
04:28:27	0.3	0.05	0.5	0.4	4.	0.02	0.011	1.9	0.001	0.19	29.
00A21003	113.5	37.6	63.8	4.1E-04*	2.00	0.56	0.876	228.	208.765	151.5	SPO
21:01:35	0.2	0.6	0.6	2.9	0.19	0.04	0.008	2.	0.001	1.0	34.
00A21004	9.52	-12.40	13.09	4.6E-02*	2.31	0.626	0.862	49.19	28.768	5.54	SPO
21:06:06	0.13	0.15	0.13	3.5	0.04	0.007	0.001	0.15	0.001	0.04	17.
00A21011	38.58	17.95	27.38	6.5E-02*	1.836	0.810	0.348	296.88	208.790	3.09	N PSC
21:39:02	0.08	0.04	0.01	1.5	0.008	0.001	0.001	0.15	0.001	0.05	28.
00A21017	95.5	16.2	66.3	5.5E-04	∞	0.94	0.57	84.	28.802	164.8	ORI
21:56:23	0.5	0.9	0.9	2.8	-	0.05	0.02	3.	0.001	1.8	31.
00A21020	42.25	11.12	27.28	1.0E-02	1.699	0.802	0.336	119.2	28.816	5.74	S TAU
22:16:13	0.18	0.07	0.06	2.8	0.018	0.001	0.002	0.4	0.001	0.11	27.

Table III: Geocentric radiants and heliocentric trajectories of video meteors (part 15).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
00A21022	303.7	53.6	12.61	1.4E-02	1.71	0.427	0.981	197.9	208.818	19.4	SPO
22:18:38	0.4	0.3	0.17	3.5	0.02	0.008	0.001	0.3	0.001	0.2	69.
00A21026	34.9	24.92	30.90	1.3E-02	3.14	0.889	0.348	292.5	208.826	13.3	N TAU
22:30:46	0.3	0.15	0.14	2.8	0.11	0.004	0.003	0.5	0.001	0.2	38.
00A21029	61.71	-4.52	40.2	6.3E-03	2.75	0.909	0.250	124.9	28.834	55.2	SPO
22:41:40	0.20	0.09	0.2	2.5	0.12	0.004	0.002	0.4	0.001	0.5	21.
00A21035	117.6	22.2	68.1	8.5E-04	2.9	0.66	0.977	197.3	208.844	178.0	SPO
22:55:35	0.3	0.2	0.3	1.9	0.2	0.03	0.002	1.2	0.001	0.4	37.
00A21042	95.5	16.6	64.2	3.6E-04	3.7	0.860	0.523	91.5	28.856	165.2	ORI
23:13:31	0.4	0.3	0.5	3.3	0.6	0.019	0.013	2.0	0.001	0.7	32.
00A21043	96.9	15.5	67.2	5.3E-04	∞	0.98	0.617	77.	28.856	164.1	ORI
23:13:33	0.6	0.5	0.6	3.0	-	0.04	0.016	2.	0.001	0.9	28.
00A21044	40.86	12.09	28.64	9.4E-03	2.04	0.837	0.333	117.4	28.856	4.37	S TAU
23:13:53	0.18	0.05	0.10	3.1	0.03	0.002	0.002	0.4	0.001	0.10	26.
00A21046	95.8	15.68	66.5	8.4E-04	∞	0.96	0.579	81.6	28.860	163.9	ORI
23:20:33	0.2	0.16	0.6	2.3	-	0.03	0.011	2.0	0.001	0.4	29.
00A21048	96.7	16.6	66.8	2.6E-04	∞	0.95	0.69	80.	28.862	166.0	ORI
23:23:26	0.8	0.5	1.2	3.2	-	0.06	0.03	4.	0.001	1.1	28.
00A21050	72.6	61.35	40.5	1.0E-03	1.29	0.648	0.452	292.8	208.866	77.8	SPO
23:29:00	0.7	0.09	0.6	3.5	0.05	0.009	0.008	1.9	0.001	1.0	37.
00A21053	38.0	9.4	25.7	3.4E-03	1.91	0.784	0.413	109.3	28.872	5.2	S TAU
23:37:05	0.7	0.5	0.7	4.2	0.13	0.017	0.011	1.3	0.001	0.6	30.
00A21054	47.6	10.8	21.63	1.3E-02	1.075	0.673	0.352	127.4	28.873	6.4	S TAU
23:37:58	0.7	0.3	0.13	3.2	0.018	0.003	0.007	1.1	0.001	0.3	24.
00A21055	98.6	15.1	66.7	2.8E-04	7.	0.91	0.646	75.	28.873	163.6	ORI
23:38:26	0.4	0.3	0.8	3.0	2.	0.04	0.017	3.	0.001	0.6	25.
00a21058	159.79	36.99	61.17	1.4E-02*	12.0	0.949	0.617	102.70	208.877	124.50	LEO MIN
23:44:01	0.01	0.03	0.06	1.1	0.7	0.003	0.001	0.19	0.001	0.05	32.
00A21076	96.8	15.4	67.3	9.8E-04	∞	0.981	0.615	76.8	28.908	163.7	ORI
00:29:47	0.5	0.2	0.3	1.8	-	0.019	0.012	1.5	0.001	0.5	26.
00A21078	188.6	76.1	34.4	2.2E-03	1.53	0.35	0.994	175.	208.913	63.7	SPO
00:35:51	1.8	1.5	0.6	3.4	0.09	0.04	0.002	3.	0.001	0.9	24.
00A21079	118.5	36.2	66.6	3.2E-04	3.2	0.70	0.960	204.	208.913	153.1	SPO
00:35:56	1.5	0.8	0.6	2.5	0.5	0.05	0.013	3.	0.001	1.4	30.
00A21083	54.3	14.29	42.4	9.4E-04	4.8	0.984	0.077	149.4	28.915	18.4	SPO
00:39:25	0.4	0.12	0.3	3.2	0.6	0.002	0.003	0.7	0.001	0.8	28.
00A21087	112.0	11.4	71.48	3.1E-04	∞	0.995	0.995	358.5	28.917	164.6	SPO
00:41:51	0.5	0.3	0.19	3.1	-	0.018	0.001	1.5	0.001	0.5	30.
00A21089	99.9	15.76	68.4	5.5E-04	∞	0.99	0.699	66.5	28.922	165.6	ORI
00:49:31	0.5	0.15	0.3	2.8	-	0.02	0.011	1.5	0.001	0.3	27.
00A21094	95.7	15.6	66.0	1.7E-03	9.	0.937	0.568	83.5	28.924	163.6	ORI
00:53:06	0.3	1.7	0.2	1.9	2.	0.015	0.013	1.8	0.001	2.0	27.
00A21097	112.1	23.9	63.7	3.9E-04	1.51	0.439	0.845	240.	208.929	176.1	SPO
00:59:02	0.4	0.2	0.3	2.8	0.06	0.019	0.010	3.	0.001	0.5	29.
00A21101	95.2	16.2	65.2	5.6E-04	6.	0.91	0.54	88.	28.939	164.5	ORI
01:14:09	0.6	0.4	0.9	2.6	2.	0.04	0.02	3.	0.001	0.9	33.
00A21102	98.3	47.71	59.4	1.7E-03	2.74	0.770	0.631	260.9	208.941	129.0	SPO
01:16:58	0.4	0.09	0.3	1.8	0.18	0.014	0.008	1.3	0.001	0.3	29.
00A21105	102.8	0.0	33.71	3.2E-03	0.576	0.817	0.105	171.2	28.944	90.4	SPO
01:20:54	0.7	0.2	0.15	3.2	0.003	0.004	0.002	0.4	0.001	0.8	23.
00A21106	96.3	16.14	65.7	8.4E-04	6.2	0.91	0.57	84.	28.945	164.8	ORI
01:23:34	0.9	0.20	0.4	1.6	1.8	0.03	0.02	2.	0.001	0.5	23.
00A21107	95.1	15.1	65.7	6.7E-04	9.	0.94	0.550	86.	28.948	162.3	ORI
01:27:47	0.5	0.2	0.6	2.3	4.	0.03	0.016	2.	0.001	0.6	27.
00A21114	97.8	14.5	66.2	4.7E-04	7.	0.91	0.62	78.	28.956	162.0	ORI
01:38:10	0.8	0.6	0.8	2.7	3.	0.05	0.02	3.	0.001	1.2	26.
00A21115	95.0	15.99	66.7	5.8E-04	∞	0.99	0.564	82.8	28.957	164.3	ORI
01:40:32	0.4	0.15	0.6	2.5	-	0.03	0.013	2.0	0.001	0.4	23.
00A21118	100.0	35.8	66.7	1.7E-04	∞	0.95	0.67	251.	208.960	154.8	SPO
01:44:02	1.4	0.6	1.7	2.9	-	0.11	0.05	3.	0.001	1.3	33.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 16).

Meteor	α_G	δ_G	v_G	m [g]	a	e	q	ω	Ω	i	Shower
Time	[°]	[°]	[km/s]	M_{abs}	[AU]	[°]	[AU]	[°]	[°]	[°]	Q
00A21121	94.5	16.1	63.8	3.7E-04	3.7	0.87	0.494	95.	28.962	163.6	SPO
01:48:01	0.7	0.3	0.6	2.9	0.8	0.03	0.019	3.	0.001	0.7	25.
00A21122	290.7	76.02	28.55	3.7E-02	3.37	0.710	0.975	198.06	208.963	46.40	SPO
01:48:14	0.4	0.03	0.11	2.2	0.07	0.006	0.001	0.16	0.001	0.13	26.
00A21124	93.9	16.4	66.5	3.7E-04	∞	0.99	0.535	86.	28.964	164.7	ORI
01:49:40	0.4	0.9	0.5	3.0	-	0.03	0.020	3.	0.001	1.6	25.
00A21128	96.4	15.4	67.2	1.9E-03	∞	0.99	0.605	77.9	28.971	163.7	ORI
02:00:53	0.4	0.2	0.4	1.5	-	0.02	0.011	1.5	0.001	0.5	26.
00A21130	96.8	14.4	65.3	1.7E-02	5.1	0.89	0.585	83.	28.977	161.4	ORI
02:08:55	0.5	0.3	0.5	-1.0	1.2	0.03	0.014	2.	0.001	0.6	28.
00A21132	172.0	70.8	45.69	1.1E-03	3.8	0.739	0.987	168.5	208.978	81.2	SPO
02:10:39	0.5	0.3	0.19	3.0	0.2	0.015	0.001	0.8	0.001	0.3	35.
00A21135	95.0	16.3	66.0	3.5E-04	10.	0.95	0.55	86.	28.981	164.9	ORI
02:15:29	1.2	0.5	0.6	2.8	4.	0.04	0.03	3.	0.001	1.1	24.
00A21137	93.4	29.7	63.4	3.4E-04	3.8	0.88	0.45	280.	208.983	165.4	SPO
02:17:42	1.1	0.2	0.7	2.8	0.9	0.03	0.02	3.	0.001	0.6	29.
00A21138	96.8	15.2	65.9	8.1E-04	7	0.91	0.59	82.	28.984	163.0	ORI
02:19:06	1.1	0.4	0.4	2.2	2	0.03	0.03	2.	0.001	1.0	21.
00A21142	97.9	16.4	66.1	3.1E-04	6.	0.89	0.61	80.	28.989	165.9	ORI
02:26:53	1.0	0.3	1.5	2.6	3.	0.08	0.04	22.	0.001	0.7	26.
00A21146	123.2	49.6	51.8	7.1E-04	0.98	0.153	0.83	283.	208.994	121.4	SPO
02:33:09	0.7	0.1	0.9	2.6	0.05	0.015	0.05	4.	0.001	0.9	38.
00A21151	97.4	15.7	65.0	8.0E-04	4.0	0.86	0.579	84.6	28.998	164.04	ORI
02:39:19	0.3	0.1	0.3	2.3	0.3	0.01	0.007	0.9	0.001	0.19	29.
00A21152	101.6	26.7	67.2	4.4E-03	5.8	0.88	0.681	250.9	208.999	172.6	SPO
02:40:29	0.7	0.4	0.4	0.3	1.2	0.02	0.015	1.9	0.001	0.8	35.
00A21162	347.3	46.90	17.59	5.6E-02	2.42	0.643	0.864	228.5	209.011	21.09	SPO
02:58:30	0.4	0.18	0.06	2.5	0.03	0.004	0.002	0.4	0.001	0.09	19.
00A21165	160.6	49.7	52.8	1.2E-03	2.05	0.62	0.777	115.	209.013	105.2	SPO
03:01:28	1.1	0.6	0.3	2.1	0.15	0.03	0.014	2.	0.001	0.9	29.
00A21173	84.4	21.40	58.5	6.9E-04	2.71	0.926	0.199	131.5	29.026	173.9	SPO
03:19:60	0.3	0.11	0.3	2.7	0.18	0.005	0.006	1.0	0.001	0.4	36.
00A21181	95.4	16.06	65.2	6.6E-04	6.	0.91	0.54	88.	29.031	164.2	ORI
03:27:09	0.7	0.19	0.9	2.2	2.	0.04	0.02	3.	0.001	0.5	22.
00A21186	95.5	15.78	66.1	6.9E-04	10.	0.95	0.560	84.	29.038	163.9	ORI
03:37:13	0.7	0.12	0.6	1.4	5.	0.03	0.017	2.	0.001	0.4	31.
00A21194	7.4	66.6	29.16	6.5E-03	2.82	0.723	0.777	241.5	209.044	43.7	SPO
03:46:18	0.7	0.3	0.13	2.9	0.09	0.008	0.004	0.7	0.001	0.2	31.
00A21197	130.7	14.64	66.4	5.4E-04	2.23	0.61	0.874	313.	29.049	173.6	SPO
03:54:05	0.4	0.14	0.5	2.4	0.20	0.04	0.010	2.	0.001	0.3	27.
00A21199	95.3	15.89	66.43	1.1E-03	17.	0.97	0.563	83.4	29.052	164.1	ORI
03:57:10	0.3	0.10	0.18	1.6	5.	0.01	0.007	0.8	0.001	0.2	27.
00A21200	95.9	15.3	66.3	4.1E-04	∞	0.95	0.58	82.	29.052	163.1	ORI
03:58:05	1.1	0.3	1.9	2.7	-	0.10	0.04	3.	0.001	0.9	27.
00A21201	96.7	16.59	66.1	1.6E-03	7.	0.92	0.582	82.	29.053	165.9	ORI
03:58:53	0.6	0.20	0.5	1.2	2.	0.03	0.017	2.	0.001	0.5	23.
00A21206	96.0	16.2	65.5	3.1E-04	6.	0.91	0.558	86.	29.057	164.7	ORI
04:05:32	0.6	0.2	0.7	3.2	2.	0.04	0.019	3.	0.001	0.5	34.
00A21208	95.6	15.96	64.1	1.2E-03	3.6	0.856	0.521	91.	29.060	163.8	ORI
04:08:49	0.3	0.12	0.5	1.7	0.5	0.018	0.012	2.	0.001	0.3	31.
00a21210	115.18	44.53	64.79	7.3E-03	4.36	0.790	0.913	215.5	209.062	139.11	SPO
04:12:06	0.08	0.02	0.07	0.4	0.12	0.006	0.001	0.3	0.001	0.05	38.
00A21213	95.1	16.21	65.6	4.5E-04	8.	0.93	0.541	87.	29.069	164.5	ORI
04:21:51	0.3	0.18	0.7	2.6	3.	0.03	0.016	2.	0.001	0.4	35.
00A22009	339.5	71.6	2.5	3.3E-02	0.993	0.049	0.945	275.	209.772	4.4	SPO
21:20:14	2.0	0.7	0.4	3.5	0.002	0.007	0.007	2.	0.001	0.7	47.
00A22012	45.1	17.9	38.4	4.2E-03*	10.	0.982	0.184	310.1	209.780	1.8	SPO
21:31:37	0.6	0.4	0.2	2.0	3.	0.005	0.007	1.4	0.001	0.8	28.
00A22013	106.1	37.2	64.6	4.7E-04	3.1	0.76	0.735	247.	209.782	151.7	SPO
21:32:46	0.4	1.8	0.3	2.9	0.4	0.03	0.012	2.	0.001	1.3	31.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 17).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
00A22022	96.0	16.0	64.9	1.1E-03	5.1	0.90	0.530	89.	29.809	163.9	ORI
22:13:08	0.4	0.4	0.7	2.2	1.5	0.03	0.016	2.	0.001	0.8	32.
00A22026	5.2	55.78	17.10	7.3E-02	1.403	0.446	0.778	253.0	209.818	23.43	SPO
22:25:38	0.3	0.09	0.06	2.3	0.007	0.002	0.002	0.4	0.001	0.08	43.
00A22028	10.5	14.9	17.8	1.1E-02	3.2	0.764	0.762	242.7	210.821	4.9	SPO
22:35:22	0.9	0.4	0.3	3.0	0.3	0.019	0.007	1.2	0.001	0.3	43.
00A22029	96.4	15.9	66.0	8.0E-04	13.	0.959	0.537	86.5	30.826	164.0	ORI
22:43:16	0.4	0.4	0.3	2.5	5.	0.016	0.011	1.4	0.001	0.9	34.
00A22042	106.0	31.4	65.8	5.1E-04	3.4	0.79	0.71	249.	210.850	162.8	SPO
23:17:16	0.6	0.6	1.1	2.6	1.2	0.06	0.02	4.	0.001	1.3	39.
00A22045	100.1	29.2	67.2	9.9E-04	∞	0.96	0.611	257.9	210.853	167.4	SPO
23:20:39	0.5	0.4	0.4	2.4	-	0.02	0.012	1.7	0.001	0.8	27.
00A22047	95.2	17.0	66.0	1.0E-03	∞	0.98	0.507	90.	30.854	165.9	ORI
23:22:44	0.6	0.7	0.5	2.3	-	0.03	0.016	2.	0.001	1.5	27.
00A22052	93.8	17.9	65.2	3.4E-04*	∞	0.97	0.46	95.	30.860	167.4	ORI
23:32:07	1.8	0.9	0.6	2.4	-	0.04	0.04	3.	0.001	2.0	29.
00A22053	23.7	17.02	20.6	1.0E-02	2.29	0.729	0.619	264.0	210.860	4.39	Ann AND
23:32:27	0.5	0.19	0.2	3.7	0.08	0.009	0.005	0.8	0.001	0.16	46.
00A22054	43.8	11.43	27.03	9.8E-03	1.71	0.798	0.346	118.0	30.862	5.78	S TAU
23:33:47	0.2	0.08	0.08	2.9	0.02	0.002	0.003	0.5	0.001	0.13	29.
00A22055	114.1	35.1	67.0	1.5E-04	4.	0.78	0.88	223.	210.863	155.6	SPO
23:36:26	1.4	1.2	1.9	3.8	2.	0.15	0.03	5.	0.001	2.0	36.
00A22059	95.2	16.4	65.1	5.1E-04	9.	0.942	0.492	92.4	30.865	164.4	ORI
23:38:50	0.6	0.4	0.3	2.9	2.	0.017	0.014	1.6	0.001	1.0	29.
00A22060	51.7	54.1	42.9	1.0E-03	4.9	0.918	0.401	284.3	210.867	66.3	SPO
23:41:18	0.9	0.2	0.3	3.5	0.7	0.011	0.007	1.2	0.001	0.7	42.
00A22063	25.8	20.4	16.1	2.0E-02	1.44	0.551	0.645	269.4	210.871	4.9	SPO
23:47:36	0.6	0.3	0.3	3.1	0.03	0.009	0.007	1.1	0.001	0.2	30.
00A22068	94.2	17.8	65.0	6.1E-04	7.	0.93	0.485	94.	29.888	167.3	ORI
00:06:38	0.6	0.2	0.5	2.4	2.	0.02	0.015	2.	0.001	0.6	25.
00A22070	143.3	46.2	57.0	5.5E-04	1.57	0.42	0.904	134.	209.889	123.5	SPO
00:08:20	0.3	0.4	0.9	2.9	0.16	0.05	0.013	3.	0.001	0.9	39.
00A22072	119.0	61.4	58.5	4.5E-04	10.	0.91	0.932	210.0	209.892	110.5	SPO
00:12:39	1.1	0.4	0.8	2.8	3.	0.07	0.007	1.9	0.001	0.8	31.
00A22073	95.32	16.32	66.92	1.4E-03	∞	1.004	0.551	83.7	29.892	164.93	ORI
00:12:45	0.15	0.07	0.19	2.0	-	0.010	0.005	0.7	0.001	0.16	28.
00A22074	97.1	15.92	66.6	6.6E-04	13.	0.955	0.585	81.0	29.892	164.6	ORI
00:12:57	0.3	0.12	0.3	2.7	4.	0.016	0.008	1.2	0.001	0.3	24.
00A22079	98.4	15.18	65.1	2.8E-03	4.2	0.860	0.588	83.4	29.900	163.1	ORI
00:23:44	0.4	0.12	0.3	0.8	0.5	0.016	0.010	1.4	0.001	0.3	27.
00A22081	160.92	36.09	60.44	1.8E-02*	6.8	0.912	0.594	98.9	209.902	124.44	LEO MIN
00:26:25	0.04	0.09	0.06	0.2	0.2	0.003	0.002	0.3	0.001	0.11	31.
00A22082	97.4	15.10	66.9	3.0E-03	∞	0.972	0.602	78.6	29.904	163.1	ORI
00:29:33	0.3	0.17	0.3	1.3	-	0.015	0.007	1.1	0.001	0.4	22.
00A22084	93.1	18.1	65.7	8.9E-04	∞	0.98	0.47	93.	29.907	167.8	ORI
00:33:56	0.8	1.6	0.3	2.1	-	0.03	0.05	3.	0.001	1.5	23.
00A22085	40.7	66.95	42.1	1.5E-03	∞	0.976	0.667	250.6	209.908	65.4	SPO
00:35:22	0.4	0.13	0.3	2.8	-	0.015	0.003	0.6	0.001	0.4	45.
00A22089	95.6	15.9	66.0	1.9E-04	∞	0.96	0.54	86.	29.913	163.9	ORI
00:43:33	0.8	0.4	1.4	3.1	-	0.07	0.03	5.	0.001	0.9	28.
00A22091	85.4	14.71	57.9	5.8E-04	2.7	0.919	0.217	129.2	29.917	153.2	SPO
00:49:06	0.3	0.15	0.4	2.7	0.2	0.005	0.007	1.2	0.001	0.5	28.
00A22092	114.58	6.84	70.16	5.8E-03	∞	0.99	0.974	16.5	29.920	155.10	SPO
00:52:43	0.12	0.05	0.18	0.6	-	0.02	0.001	0.4	0.001	0.11	26.
00A22094	108.3	21.1	70.3	4.3E-04	∞	0.97	0.84	46.	29.921	177.7	SPO
00:55:37	1.2	0.7	1.6	2.2	-	0.13	0.03	5.	0.001	1.3	25.
00A22095	97.5	15.23	66.2	6.0E-04	8.1	0.927	0.589	81.2	29.922	163.2	ORI
00:55:39	0.3	0.17	0.3	2.9	1.9	0.017	0.009	1.3	0.001	0.4	27.
00A22098	94.5	16.6	64.4	1.0E-03	5.3	0.91	0.484	95.	29.928	164.7	ORI
01:05:09	0.5	0.3	0.8	1.8	1.9	0.03	0.019	3.	0.001	0.7	31.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 18).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
00A22099	138.8	19.7	66.0	4.1E-04	2.5	0.70	0.750	114.	209.930	172.9	SPO
01:07:26	0.3	0.2	1.0	3.2	0.5	0.05	0.019	4.	0.001	0.5	34.
00A22100	92.0	7.61	60.6	8.6E-04	3.2	0.860	0.442	101.6	29.931	142.6	SPO
01:09:23	0.4	0.15	0.2	2.2	0.2	0.011	0.009	1.1	0.001	0.4	20.
00A22101	96.5	16.	66.2	9.1E-04	11.	0.949	0.564	84.0	29.932	164.	ORI
01:10:27	0.5	2.	0.3	2.0	4.	0.018	0.018	2.0	0.001	5.	22.
00A22110	57.69	14.66	38.0	5.6E-03	1.77	0.952	0.086	151.0	29.943	16.8	SPO
01:26:23	0.16	0.06	0.4	2.4	0.07	0.003	0.003	0.4	0.001	0.5	37.
00A22113	97.7	15.61	65.5	4.8E-04	5.4	0.89	0.576	84.0	29.950	163.9	ORI
01:36:18	0.5	0.20	0.6	2.8	1.6	0.03	0.016	2.0	0.001	0.5	24.
00A22116	95.4	15.7	65.1	9.4E-04	7.	0.92	0.520	89.7	29.953	163.2	ORI
01:41:05	0.3	1.5	0.6	2.3	2.	0.02	0.016	2.0	0.001	1.3	30.
00A22118	159.8	71.04	45.8	1.5E-03	2.6	0.61	0.994	177.4	209.961	84.1	SPO
01:52:26	0.5	0.19	0.7	2.8	0.3	0.05	0.001	0.6	0.001	0.7	34.
00A22121	96.6	15.59	66.4	1.1E-03	∞	0.96	0.571	82.	29.962	163.7	ORI
01:53:52	0.4	0.17	0.7	1.9	-	0.04	0.015	2.	0.001	0.4	21.
00A22122	258.0	73.77	27.98	2.0E-02	2.60	0.617	0.994	183.5	209.964	46.9	SPO
01:57:03	0.7	0.13	0.18	2.6	0.07	0.010	0.001	0.3	0.001	0.2	25.
00A22123	73.2	47.01	52.6	5.9E-04	4.3	0.933	0.288	298.2	209.965	104.1	SPO
01:58:12	0.3	0.10	0.7	3.4	1.0	0.013	0.008	1.8	0.001	1.0	56.
00A22125	121.6	15.07	66.8	5.7E-04	2.2	0.54	0.995	359.1	29.966	170.8	SPO
02:00:26	0.4	0.18	0.7	2.4	0.3	0.05	0.001	2.0	0.001	0.4	25.
00A22128	96.3	16.2	65.4	3.3E-04	6	0.91	0.54	87.	29.968	164.6	ORI
02:02:02	1.3	0.5	0.7	2.8	3	0.04	0.03	3.	0.001	1.1	24.
00A22129	133.8	53.0	58.8	9.2E-04	2.6	0.61	0.995	181.2	209.970	119.8	SPO
02:04:56	0.5	0.2	0.6	2.4	0.3	0.05	0.001	1.3	0.001	0.5	29.
00A22135	94.9	17.4	66.8	1.6E-03	∞	1.00	0.532	86.	29.979	166.9	ORI
02:18:21	0.5	0.4	0.8	1.3	-	0.04	0.018	3.	0.001	0.9	26.
00A22137	11.5	-0.4	14.0	1.9E-02	2.21	0.629	0.821	56.8	29.987	1.98	SPO
02:27:34	0.3	0.4	0.5	3.3	0.09	0.018	0.007	0.6	0.001	0.05	86.
00A22138	96.4	16.2	66.9	1.5E-04	∞	0.98	0.57	82.	29.987	164.9	ORI
02:30:22	0.9	0.5	2.0	3.6	-	0.10	0.04	6.	0.001	1.1	28.
00A22139	40.5	18.4	29.4	7.0E-03	2.15	0.852	0.318	298.6	209.987	3.3	N TAU
02:30:21	0.3	0.2	0.6	3.0	0.13	0.012	0.007	0.6	0.001	0.3	70.
00A22141	111.4	51.1	57.9	5.5E-04	1.9	0.58	0.805	241.	209.997	124.5	SPO
02:44:40	1.0	0.2	0.8	2.7	0.2	0.05	0.019	4.	0.001	0.7	30.
00A22143	97.1	15	64.1	3.8E-04	3.5	0.85	0.54	90.	30.001	162.8	ORI
02:49:39	0.7	3	0.7	2.8	0.8	0.03	0.03	4.	0.001	1.4	27.
00A22144	94.9	15.86	66.1	6.9E-04	∞	0.97	0.528	87.2	30.001	163.6	ORI
02:49:54	0.3	0.12	0.5	2.5	-	0.03	0.012	1.9	0.001	0.3	27.
00A22147	139.3	29.7	66.1	4.4E-04	3.0	0.72	0.849	130.	210.009	155.3	SPO
03:01:59	0.7	0.4	0.6	2.7	0.5	0.04	0.013	2.	0.001	0.8	32.
00A22148	95.1	16.5	66.8	7.1E-04	∞	1.00	0.541	85.	30.012	165.2	ORI
03:06:47	0.5	0.3	0.7	2.2	-	0.04	0.016	2.	0.001	0.6	21.
00A22153	96.3	17.6	66.6	7.4E-04	∞	0.97	0.555	84.	30.019	167.9	ORI
03:16:55	0.7	0.3	0.7	2.3	-	0.04	0.019	3.	0.001	0.7	21.
00A22153	96.3	17.6	66.6	7.4E-04	∞	0.97	0.555	84.	30.019	167.9	ORI
03:16:55	0.7	0.3	0.7	2.3	-	0.04	0.019	3.	0.001	0.7	21.
00A22158	98.3	15.0	66.3	2.0E-03	8	0.92	0.61	79.	30.030	164.0	ORI
03:32:20	0.8	0.3	0.8	1.4	4	0.05	0.02	3.	0.001	0.7	20.
00A22163	98.3	14.23	66.3	1.3E-03	8	0.93	0.612	79.	30.033	161.4	ORI
03:35:54	0.6	0.20	0.6	2.1	3	0.03	0.015	2.	0.001	0.5	20.
00A22166	97.3	48.53	63.0	6.1E-04	∞	1.00	0.666	250.1	210.036	129.1	SPO
03:40:37	0.3	0.08	0.6	2.3	-	0.03	0.008	1.7	0.001	0.4	48.
00A22168	96.6	16.2	66.7	6.4E-04	∞	0.97	0.570	82.	30.038	164.9	ORI
03:44:09	0.6	0.3	0.7	2.5	-	0.04	0.017	2.	0.001	0.7	21.
00A22174	162.0	35.93	61.35	1.4E-02*	∞	0.974	0.599	101.2	210.044	124.3	LEO MIN
03:51:58	0.3	0.15	0.20	-0.4	-	0.012	0.005	0.7	0.001	0.4	27.
00A22176	98.1	14.6	66.0	5.9E-04	∞	0.91	0.60	80.	30.049	163.0	ORI
03:59:59	1.4	0.7	1.6	2.1	-	0.09	0.04	6.	0.001	1.6	18.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 19).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
00A22182	96.4	14.75	65.1	8.3E-04	5.9	0.91	0.545	87.	30.054	161.5	ORI
04:07:00	0.4	0.16	0.6	2.0	1.9	0.03	0.015	2.	0.001	0.4	29.
00A22185	98.4	15.81	65.3	4.5E-04	4.4	0.87	0.584	83.7	30.058	164.4	ORI
04:12:42	0.3	0.11	0.5	2.8	0.8	0.02	0.011	1.9	0.001	0.3	27.
01812006	46.79	59.39	57.73	1.6E-03	9.1	0.895	0.955	151.4	140.197	110.4	PER
21:13:33	0.17	0.18	0.20	2.0	1.5	0.017	0.001	0.4	0.001	0.3	34.
01812011	48.05	59.1	58.4	4.4E-04	15.	0.94	0.949	150.4	140.201	111.3	PER
21:20:25	0.12	0.3	0.4	3.5	7.	0.03	0.001	0.6	0.001	0.4	36.
01812014	49.42	58.84	58.82	5.6E-03	22.	0.956	0.941	148.8	140.204	112.01	PER
21:23:58	0.20	0.13	0.06	0.9	4.	0.007	0.001	0.3	0.001	0.17	35.
01812015	49.02	57.91	58.85	5.8E-04	12.	0.919	0.943	148.9	140.206	113.2	PER
21:28:20	0.14	0.13	0.19	3.5	2.	0.016	0.001	0.4	0.001	0.2	33.
01812021	46.2	58.1	59.3	3.4E-03	∞	0.97	0.963	154.2	140.229	113.0	PER
22:01:24	0.3	0.4	0.5	0.0	-	0.05	0.002	0.8	0.001	0.6	41.
01812022	343.0	-2.07	26.91	1.5E-02	1.147	0.800	0.230	317.7	140.231	6.77	N ι AQR
22:03:28	0.2	0.08	0.10	2.1	0.009	0.002	0.003	0.4	0.001	0.15	33.
01812024	330.5	4.19	28.49	4.6E-03	1.99	0.815	0.368	294.8	140.234	18.15	SPO
22:09:39	0.3	0.10	0.18	3.3	0.05	0.004	0.004	0.6	0.001	0.19	27.
01812026	130.8	82.4	13.12	1.2E-02	0.921	0.193	0.743	49.7	140.237	24.34	SPO
22:13:56	1.5	0.3	0.09	3.9	0.003	0.003	0.005	0.7	0.001	0.19	36.
01812028	48.35	57.08	58.41	5.5E-03	6.4	0.852	0.946	149.0	140.241	113.99	PER
22:19:59	0.08	0.05	0.09	1.3	0.3	0.007	0.001	0.2	0.001	0.09	42.
01812033	48.60	59.83	57.0	1.8E-04	6.4	0.86	0.941	147.8	140.243	109.4	PER
22:23:13	0.20	0.12	0.5	4.1	1.6	0.04	0.002	0.9	0.001	0.4	38.
01812035	328.0	54.6	30.2	1.0E-02	1.54	0.46	0.837	243.	141.204	53.9	SPO
22:24:10	1.3	0.3	0.5	1.8	0.08	0.02	0.009	3.	0.001	0.8	56.
01812041	45.53	57.49	57.1	8.0E-04	4.1	0.768	0.961	151.8	140.246	112.3	PER
22:27:02	0.16	0.12	0.2	3.2	0.3	0.017	0.001	0.5	0.001	0.2	40.
01812044	49.48	59.10	58.90	3.6E-02	35.	0.973	0.942	149.0	140.247	111.74	PER
22:29:51	0.16	0.09	0.12	-0.4	13.	0.010	0.001	0.3	0.001	0.14	33.
01812046	291.2	54.6	25.7	2.4E-02	4.1	0.761	0.973	204.8	141.211	40.0	κ CYG
22:35:07	0.2	0.2	0.3	2.0	0.3	0.016	0.001	0.3	0.001	0.3	72.
01812052	46.1	56.9	59.71	1.0E-01	18.	0.946	0.965	154.6	140.257	114.8	PER
22:43:26	0.4	0.3	0.11	-3.3	5.	0.015	0.002	0.7	0.001	0.4	36.
01812058	50.4	57.49	57.8	1.2E-02	5.3	0.824	0.929	144.7	140.261	113.1	PER
22:50:08	0.4	0.18	0.2	0.6	0.5	0.018	0.004	0.9	0.001	0.3	41.
01812059	49.30	58.62	59.0	3.5E-03	∞	0.963	0.943	149.2	140.264	112.46	PER
22:54:27	0.10	0.07	0.2	1.2	-	0.018	0.001	0.4	0.001	0.17	36.
01812076	262.8	58.86	19.4	1.7E-01	2.56	0.604	1.012	183.80	140.278	30.9	κ CYG
23:15:46	0.2	0.13	0.4	0.3	0.13	0.019	0.001	0.13	0.001	0.5	80.
01812077	46.12	56.47	59.60	1.6E-02	11.7	0.918	0.965	154.3	140.279	115.36	PER
23:17:11	0.15	0.06	0.12	-0.3	1.4	0.010	0.001	0.3	0.001	0.11	34.
01812079	48.1	59.22	57.34	9.2E-03	6.6	0.857	0.946	148.9	140.281	110.4	PER
23:19:42	0.2	0.18	0.18	0.4	0.7	0.015	0.002	0.5	0.001	0.3	35.
01812083	46.8	55.8	60.8	1.3E-03	∞	0.98	0.965	154.6	140.281	117.1	PER
23:20:47	0.5	0.4	0.5	1.7	-	0.04	0.003	1.0	0.001	0.6	29.
01812098	47.07	57.78	58.72	5.4E-03	9.8	0.903	0.957	152.0	140.293	113.18	PER
23:37:27	0.19	0.07	0.16	0.9	1.3	0.013	0.001	0.4	0.001	0.14	34.
01812100	45.8	55.82	59.52	3.6E-03	8.4	0.889	0.967	154.7	140.295	116.14	PER
23:40:53	0.2	0.08	0.15	1.3	0.9	0.012	0.001	0.4	0.001	0.14	34.
01812103	48.5	57.6	59.1	1.1E-03	∞	0.92	0.948	150.	140.298	113.8	PER
23:44:59	0.9	0.4	1.5	1.9	-	0.12	0.008	2.	0.001	1.1	32.
01812105	48.7	58.61	58.08	4.1E-03	8.4	0.888	0.944	148.8	140.300	111.79	PER
23:48:02	0.3	0.11	0.14	1.2	0.9	0.012	0.002	0.5	0.001	0.17	31.
01812109	46.8	59.76	58.17	9.4E-02	17.	0.944	0.957	152.4	140.302	110.24	PER
23:51:21	0.3	0.07	0.09	-2.1	2.	0.008	0.002	0.4	0.001	0.11	33.
01812112	46.7	57.86	57.38	8.2E-04	4.9	0.804	0.955	150.6	140.304	112.1	PER
23:55:11	0.8	0.16	0.20	2.5	0.4	0.016	0.005	1.4	0.001	0.3	35.
01812113	297.77	28.10	20.96	3.5E-02	3.39	0.747	0.857	230.30	140.305	25.64	SPO
23:56:02	0.06	0.06	0.13	2.2	0.08	0.006	0.001	0.10	0.001	0.14	58.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 20).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
01812127	342.5	1.38	38.1	3.3E-02	2.78	0.952	0.134	321.2	140.318	21.1	N δ AQR
00:14:35	0.4	0.11	0.2	-0.3	0.16	0.002	0.005	0.9	0.001	0.4	24.
01812138	47.0	57.92	57.09	2.4E-03	4.4	0.785	0.952	149.7	140.328	111.9	PER
00:31:20	0.3	0.15	0.15	1.5	0.3	0.013	0.002	0.6	0.001	0.2	37.
01812141	211.1	66.93	21.36	1.4E-02	2.60	0.632	0.958	149.3	140.330	32.49	SPO
00:33:43	0.9	0.08	0.09	2.4	0.03	0.005	0.002	0.5	0.001	0.13	25.
01812147	46.7	58.89	57.7	3.1E-03	7.1	0.87	0.956	151.5	140.332	111.0	PER
00:36:23	0.6	0.08	0.3	0.6	1.2	0.02	0.004	1.0	0.001	0.2	32.
01812157	49.6	58.1	59.3	2.4E-03	∞	0.96	0.942	149.0	140.335	113.4	PER
00:41:24	1.0	0.4	0.7	0.5	-	0.05	0.007	1.8	0.001	0.6	43.
01812160	44.4	58.5	57.6	8.6E-03	6.3	0.85	0.970	155.	140.336	111.2	PER
00:42:45	1.2	0.5	0.5	0.3	1.8	0.05	0.007	2.	0.001	0.7	30.
01812162	47.2	58.15	58.93	1.4E-02	14.5	0.934	0.957	152.2	140.337	112.85	PER
00:43:54	0.2	0.12	0.08	0.2	1.8	0.008	0.001	0.4	0.001	0.16	34.
01812168	37.5	-16.59	53.00	6.6E-03	1.50	0.57	0.64	91.	320.342	117.3	SPO
00:50:54	0.9	0.10	0.18	0.8	0.04	0.02	0.02	2.	0.001	0.2	17.
01812170	204	89.79	38.32	1.1E-02	8.3	0.885	0.954	151.1	140.343	63.18	SPO
00:52:17	-	0.16	0.09	1.8	1.0	0.013	0.004	1.1	0.001	0.19	33.
01812174	47.1	58.37	59.01	4.3E-04	19.	0.95	0.958	152.6	140.344	112.6	PER
00:53:59	0.3	0.06	0.34	2.7	10.	0.03	0.002	0.7	0.001	0.2	35.
01812176	47.0	60.39	58.4	5.7E-03	∞	0.99	0.957	152.7	140.345	109.7	PER
00:55:43	0.5	0.11	0.4	0.4	-	0.03	0.003	0.9	0.001	0.3	43.
01812180	53.0	57.54	59.7	5.8E-03	∞	0.97	0.918	144.1	140.349	114.5	PER
01:01:51	0.7	0.13	0.4	0.0	-	0.03	0.006	1.2	0.001	0.3	32.
01812181	46.9	57.11	59.41	1.8E-02	13.	0.928	0.961	153.2	140.349	114.49	PER
01:01:53	0.3	0.11	0.20	-0.0	3.	0.016	0.002	0.5	0.001	0.19	42.
01812182	50.4	58.73	58.2	4.8E-04*	9.	0.90	0.933	146.5	140.349	111.8	PER
01:02:46	0.5	0.12	1.1	2.5	7.	0.08	0.006	2.0	0.001	0.8	38.
01812186	44.2	58.74	59.2	9.6E-02	∞	0.98	0.974	157.2	140.352	112.0	PER
01:05:57	0.7	0.14	0.4	-2.8	-	0.03	0.004	1.1	0.001	0.3	40.
01812205	49.3	57.79	58.7	5.9E-02	10.	0.90	0.942	148.5	140.359	113.4	PER
01:17:06	0.4	0.08	0.3	-1.4	2.	0.02	0.003	0.8	0.001	0.2	33.
01812208	46.6	59.47	57.9	1.8E-02	11.	0.91	0.958	152.3	140.361	110.4	PER
01:19:59	0.8	0.12	0.4	-0.2	3.	0.03	0.005	1.3	0.001	0.3	29.
01812211	48.8	57.7	59.5	1.5E-03	∞	0.95	0.949	150.4	140.363	114.0	PER
01:22:36	1.0	0.2	0.7	1.4	-	0.06	0.007	1.9	0.001	0.6	42.
01812214	45.8	58.53	59.5	9.0E-04	∞	0.99	0.966	155.2	140.363	112.6	PER
01:23:48	0.9	0.19	0.3	2.2	-	0.03	0.005	1.4	0.001	0.3	35.
01812217	48.08	58.25	59.50	2.6E-03	∞	0.983	0.953	151.8	140.365	113.18	PER
01:26:43	0.20	0.06	0.20	1.5	-	0.016	0.001	0.4	0.001	0.15	39.
01812220	46.1	56.37	60.9	7.0E-04	∞	1.02	0.969	156.1	140.366	116.3	PER
01:27:48	0.5	0.10	0.4	2.4	-	0.04	0.003	0.9	0.001	0.3	35.
01812222	52.7	53.81	61.04	1.4E-03	13.	0.931	0.921	144.3	140.368	120.5	PER
01:30:05	0.4	0.16	0.18	1.6	3.	0.015	0.003	0.7	0.001	0.3	36.
01812233	51.8	56.86	59.3	1.1E-03	11.	0.92	0.925	144.9	140.371	115.2	PER
01:35:39	0.3	0.10	0.4	2.2	4.	0.03	0.003	0.9	0.001	0.3	36.
01812237	46.8	58.8	58.	1.6E-04	∞	0.9	0.958	152.	140.373	112.	PER
01:37:21	1.7	0.5	4.	3.2	-	0.3	0.016	6.	0.001	2.	33.
01812239	344.7	62.0	42.9	5.2E-04	3.8	0.75	0.953	210.4	140.374	76.0	SPO
01:38:56	0.7	0.5	0.4	3.8	0.5	0.03	0.005	1.4	0.001	0.5	52.
01813002	49.6	58.8	58.14	1.3E-02	8.	0.89	0.947	149.5	141.218	111.9	PER
22:45:53	0.6	1.2	0.12	-1.4	3.	0.05	0.004	1.1	0.001	1.5	50.
01813004	309.9	39.38	26.1	5.9E-03	2.76	0.705	0.814	238.4	141.228	38.1	SPO
22:59:45	0.2	0.09	0.2	3.2	0.09	0.010	0.002	0.4	0.001	0.3	61.
01813006	49.1	57.8	59.5	1.8E-02	∞	0.95	0.954	151.8	141.233	114.1	PER
23:07:53	0.7	0.3	0.8	-0.8	-	0.06	0.005	1.5	0.001	0.6	26.
01813008	52.6	54.7	60.2	7.2E-04	9.	0.89	0.929	145.5	141.236	118.9	PER
23:12:46	0.5	0.3	0.7	2.4	4.	0.05	0.005	1.5	0.001	0.6	28.
01813010	51.2	58.55	59.42	5.5E-03	∞	0.979	0.941	148.9	141.241	113.1	PER
23:19:44	0.3	0.16	0.14	0.8	-	0.013	0.002	0.5	0.001	0.2	28.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 21).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
01813013	49.2	57.76	59.62	5.7E-03	24.	0.961	0.954	151.9	141.244	114.18	PER
23:24:35	0.3	0.11	0.17	0.6	9.	0.014	0.002	0.6	0.001	0.18	33.
01813015	48.2	57.56	59.57	1.8E-02	19.	0.949	0.961	153.3	141.246	114.32	PER
23:27:04	0.3	0.07	0.18	-0.3	5.	0.015	0.002	0.6	0.001	0.15	31.
01813017	296.76	35.01	21.9	4.6E-03	3.5	0.75	0.886	225.0	141.247	29.3	SPO
23:28:52	0.15	0.17	0.7	3.7	0.5	0.03	0.002	0.4	0.001	0.8	84.
01813020	257.1	60.6	13.4	8.4E-03	1.49	0.320	1.013	179.5	141.248	23.0	SPO
23:30:21	0.8	0.7	0.4	3.6	0.04	0.018	0.001	0.8	0.001	0.7	41.
01813024	52.6	59.51	58.68	8.5E-03	26.	0.964	0.930	146.4	141.254	111.44	PER
23:38:32	0.4	0.07	0.19	0.6	10.	0.015	0.003	0.6	0.001	0.16	34.
01813026	291.2	61.0	23.9	5.4E-03	2.25	0.559	0.991	200.0	141.258	39.9	κ CYG
23:44:11	0.3	0.3	0.3	3.2	0.07	0.015	0.001	0.4	0.001	0.4	49.
01813027	50.7	57.23	59.33	3.3E-02	11.4	0.917	0.943	148.9	141.258	114.81	PER
23:44:41	0.4	0.10	0.13	-0.8	1.5	0.011	0.003	0.6	0.001	0.16	34.
01813029	315.5	-3.95	21.5	3.0E-02	2.83	0.773	0.643	260.7	141.260	8.48	α CAP
23:47:07	0.3	0.12	0.3	2.5	0.12	0.010	0.004	0.5	0.001	0.15	18.
01813032	49.9	57.9	57.32	2.9E-02	4.5	0.79	0.941	147.	141.262	112.5	PER
23:51:22	1.1	1.2	0.14	-0.3	1.0	0.05	0.008	2.	0.001	1.6	36.
01813043	45.	58.0	59.3	4.6E-04	∞	0.95	0.976	158.	141.275	113	PER
00:11:12	3.	1.8	0.8	2.7	-	0.10	0.017	5.	0.001	2	34.
01813044	49.6	58.0	59.1	1.4E-03	13.	0.93	0.950	150.6	141.276	113.6	PER
00:12:31	0.8	0.2	0.4	1.9	6.	0.04	0.005	1.4	0.001	0.4	31.
01813050	49.0	59.1	59.4	3.0E-03	∞	0.99	0.955	152.4	141.282	112.3	PER
00:21:07	0.9	0.4	0.5	1.1	-	0.04	0.005	1.4	0.001	0.60	31.
01813054	45.8	60.28	58.5	2.7E-03	∞	0.98	0.970	156.2	141.283	109.9	PER
00:22:34	1.1	0.11	0.5	1.4	-	0.04	0.006	1.7	0.001	0.4	30.
01813056	54.0	58.7	59.1	6.3E-03	∞	0.96	0.920	144.4	141.283	112.7	PER
00:23:14	0.7	0.2	0.3	0.9	-	0.03	0.005	1.2	0.001	0.4	28.
01813060	336.53	-1.80	32.92	4.7E-02	2.74	0.905	0.260	304.4	141.287	11.90	N ι AQR
00:27:31	0.13	0.06	0.05	1.3	0.04	0.001	0.002	0.3	0.001	0.10	21.
01813065	54.8	55.5	60.0	3.7E-04	10.	0.91	0.911	142.0	141.291	117.8	PER
00:34:08	0.9	0.3	0.7	2.8	6.	0.05	0.009	2.0	0.001	0.6	34.
01813066	53.1	60.5	56.6	3.3E-03	6.	0.85	0.920	143	141.291	108.7	PER
00:34:18	1.4	0.3	0.6	0.3	2.	0.05	0.010	2	0.001	0.6	41.
01813068	53.9	61.4	56.78	1.3E-03	9.3	0.902	0.917	143.2	141.293	107.7	PER
00:36:58	0.9	0.2	0.07	2.2	1.1	0.011	0.006	1.2	0.001	0.3	35.
01813070	315.0	58.4	13.2	7.1E-03	0.998	0.141	0.857	284.	141.293	25.0	SPO
00:37:34	0.7	0.7	0.3	4.5	0.006	0.006	0.007	2.	0.001	0.5	64.
01813072	49.4	58.08	59.1	1.3E-02	14.	0.93	0.951	150.9	141.294	113.4	PER
00:39:13	0.3	0.09	0.5	-1.0	7.	0.04	0.003	0.8	0.001	0.3	46.
01813079	47.7	58.0	58.8	9.5E-03	10.	0.91	0.961	153.	141.300	113.2	PER
00:48:08	1.7	1.0	0.3	-0.8	5.	0.05	0.010	3.	0.001	1.3	47.
01813104	299.8	27.6	12.1	9.8E-03	1.38	0.360	0.883	238.9	141.327	15.9	SPO
01:27:22	0.9	2.0	0.4	3.6	0.04	0.018	0.007	1.5	0.001	0.8	41.
01813108	72.9	34.9	61.7	7.8E-04	2.7	0.81	0.526	86.	141.329	152.6	SPO
01:31:29	0.9	0.8	0.5	1.7	0.3	0.02	0.020	3.	0.001	1.7	41.
01813111	32.3	35.7	61.9	1.1E-03	2.2	0.58	0.928	220.	141.334	140.8	SPO
01:38:52	1.1	0.3	1.5	1.4	0.6	0.12	0.020	6.	0.001	1.1	32.
01813120	48.2	59.4	59.3	3.4E-04	∞	1.00	0.960	154.	141.346	111.8	PER
01:57:47	1.3	0.4	1.4	2.7	-	0.11	0.008	2.	0.001	1.00	39.
01813121	37.3	70.65	49.3	1.2E-03	4.3	0.77	0.978	157.2	141.347	90.3	SPO
01:57:59	1.0	0.13	0.6	2.3	0.8	0.04	0.003	1.2	0.001	0.6	41.
01813124	45.0	57.99	59.3	1.4E-03	∞	0.95	0.978	158.4	141.351	113.3	PER
02:04:12	0.7	0.17	0.4	1.6	-	0.04	0.004	1.2	0.001	0.4	32.
01813130	49.2	56.5	59.	8.6E-04	∞	0.9	0.954	151.	141.355	115.6	PER
02:10:11	1.3	0.2	3.	1.8	-	0.2	0.014	5.	0.001	2.0	31.
01813133	26.7	13.2	63.5	5.3E-04	3.0	0.81	0.56	270.	141.358	175.6	SPO
02:16:37	1.2	0.4	0.2	2.4	0.3	0.03	0.03	2.	0.001	1.2	24.
01814004	210.8	63.35	17.5	7.8E-03	1.93	0.501	0.962	148.1	142.071	26.8	SPO
20:02:36	0.3	0.13	0.2	3.9	0.05	0.012	0.001	0.3	0.001	0.3	81.

Table III: Geocentric radiants and heliocentric trajectories of video meteors (part 22).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
01814007	53.36	60.1	58.6	3.0E-03	∞	0.97	0.933	147.2	142.079	110.9	PER
20:16:17	0.19	0.3	0.0	1.7	-	0.02	0.002	0.5	0.001	0.4	27.
01814011	323.55	11.20	24.26	6.7E-03	1.92	0.722	0.535	277.3	142.084	20.64	SPO
20:23:06	0.15	0.09	0.10	3.5	0.02	0.003	0.002	0.4	0.001	0.12	38.
01814015	72.5	54.5	58.15	1.7E-02	6.8	0.896	0.710	111.6	142.093	116.1	SPO
20:36:20	0.2	0.3	0.07	0.7	0.5	0.008	0.004	0.7	0.001	0.4	26.
01814017	63.6	67.7	51.88	9.0E-04	5.6	0.85	0.868	133.4	142.098	95.9	SPO
20:43:23	0.4	0.5	0.18	3.0	0.8	0.02	0.005	1.1	0.001	0.6	29.
01814019	342.6	53.71	12.4	7.8E-03	0.826	0.285	0.590	331.7	142.110	23.1	SPO
21:01:45	0.5	0.20	0.2	3.6	0.002	0.003	0.004	0.6	0.001	0.5	54.
01814022	19.26	31.97	62.4	3.5E-04	6.	0.89	0.695	251.	142.111	136.1	SPO
21:04:16	0.15	0.18	0.8	3.2	2.	0.04	0.013	3.	0.001	0.5	41.
01814024	25.5	38.9	62.5	3.4E-03	5.0	0.824	0.882	224.5	142.116	132.2	SPO
21:11:12	0.3	0.3	0.3	1.5	0.6	0.020	0.005	1.1	0.001	0.5	36.
01814026	309.41	-7.03	19.51	5.6E-02	3.45	0.787	0.733	248.14	142.118	6.41	SPO
21:12:44	0.11	0.09	0.10	2.4	0.07	0.005	0.001	0.17	0.001	0.07	18.
01814028	338.78	-6.47	33.20	3.7E-02	2.98	0.916	0.251	305.0	142.123	3.70	N ι AQR
21:19:19	0.20	0.08	0.09	1.5	0.08	0.002	0.003	0.4	0.001	0.16	24.
01814030	54.72	60.7	58.4	6.3E-04	∞	0.98	0.925	145.6	142.125	110.0	PER
21:24:32	0.19	0.3	0.5	2.6	-	0.04	0.003	0.9	0.001	0.5	29.
01814031	52.6	58.8	58.3	5.5E-04	9.1	0.90	0.936	147.0	142.125	112.4	PER
21:24:37	0.5	0.3	0.2	2.5	1.8	0.02	0.004	0.9	0.001	0.4	33.
01814041	72.86	42.52	59.48	1.5E-03	2.49	0.772	0.568	89.5	142.136	136.75	SPO
21:40:49	0.03	0.07	0.10	2.8	0.05	0.003	0.002	0.4	0.001	0.14	33.
01814043	50.0	60.0	58.2	1.8E-04	∞	0.94	0.954	151.5	142.140	110.6	PER
21:46:24	0.4	0.4	0.5	3.9	-	0.05	0.003	1.0	0.001	0.6	42.
01814045	276.2	60.04	21.8	2.0E-02	2.6	0.61	1.006	190.9	142.144	35.3	κ CYG
21:52:39	0.8	0.17	0.8	2.3	0.3	0.04	0.001	0.5	0.001	0.9	85.
01814046	262.3	65.6	19.12	7.4E-03	1.88	0.462	1.013	178.1	142.145	32.3	SPO
21:53:43	0.5	0.4	0.16	3.6	0.04	0.011	0.001	0.5	0.001	0.2	52.
01814052	50.53	56.91	60.29	3.2E-03	30.	0.968	0.955	152.2	142.149	116.04	PER
21:59:57	0.11	0.13	0.08	1.8	8.	0.008	0.001	0.2	0.001	0.18	31.
01814058	55.3	58.45	58.4	1.0E-03	8.8	0.896	0.915	142.8	142.153	112.9	PER
22:07:17	0.4	0.18	0.3	2.6	1.7	0.020	0.004	0.9	0.001	0.3	35.
01814059	347.65	4.32	33.61	3.6E-03	1.340	0.902	0.131	326.71	142.157	20.7	SPO
22:12:30	0.11	0.09	0.13	3.2	0.012	0.002	0.001	0.20	0.001	0.3	32.
01814063	333.2	45.33	39.7	1.4E-03	4.8	0.85	0.726	247.5	142.159	65.0	SPO
22:15:06	0.2	0.08	0.5	3.1	0.8	0.03	0.004	1.1	0.001	0.6	55.
01814067	52.9	61.41	57.46	3.5E-03	15.	0.939	0.935	147.2	142.165	108.4	PER
22:23:55	0.5	0.20	0.13	0.6	3.	0.013	0.003	0.7	0.001	0.3	37.
01814074	18.5	25.30	57.2	3.8E-04	1.7	0.741	0.44	289.	142.171	141.8	SPO
22:33:50	0.4	0.19	1.0	3.1	0.2	0.018	0.03	4.	0.001	0.8	36.
01814075	340.57	-2.08	27.72	4.2E-03	1.400	0.807	0.271	309.9	142.173	7.7	N δ AQR
22:35:47	0.17	0.15	0.07	4.0	0.012	0.001	0.002	0.3	0.001	0.2	26.
01814085	280.8	57.7	21.6	7.7E-03*	2.53	0.605	0.998	196.1	142.192	34.8	κ CYG
23:05:27	0.5	0.4	0.3	3.5	0.10	0.015	0.001	0.5	0.001	0.3	36.
01814090	24.2	33.99	63.7	8.7E-04	6.4	0.87	0.807	235.7	142.200	138.3	SPO
23:17:47	0.3	0.10	0.4	2.8	1.4	0.03	0.006	1.2	0.001	0.3	33.
01814096	33.22	-2.01	63.46	1.6E-02	4.5	0.859	0.630	79.5	322.207	150.10	SPO
23:27:30	0.05	0.03	0.20	0.0	0.3	0.010	0.004	0.8	0.001	0.11	30.
01814097	73.41	35.72	64.9	6.7E-03	10.0	0.939	0.606	99.9	142.207	152.60	SPO
23:28:00	0.04	0.05	0.2	0.5	2.0	0.012	0.004	0.8	0.001	0.13	35.
01814102	344.1	7.2	35.5	3.2E-03	1.78	0.910	0.160	320.1	142.215	29.2	SPO
23:39:50	0.7	0.4	1.0	2.3	0.18	0.012	0.010	1.4	0.001	1.7	43.
01814105	51.8	58.04	58.6	3.0E-03	8.3	0.886	0.942	148.4	142.218	113.6	PER
23:44:41	0.3	0.15	0.2	1.2	1.3	0.018	0.002	0.6	0.001	0.3	34.
01814114	19.90	-0.86	58.8	7.4E-04	3.7	0.932	0.255	123.4	322.227	154.9	SPO
23:56:46	0.15	0.08	0.4	2.7	0.4	0.006	0.007	1.3	0.001	0.3	23.
01814116	51.8	58.32	58.7	8.6E-04	9.	0.90	0.943	148.7	142.228	113.2	PER
23:58:48	0.6	0.16	0.7	1.9	5.	0.05	0.005	1.4	0.001	0.5	31.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 23).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
01814117	276.27	51.69	19.43	1.8E-02	2.73	0.635	0.995	197.09	142.230	29.99	κ CYG
00:01:10	0.11	0.14	0.10	3.2	0.04	0.005	0.001	0.12	0.001	0.13	44.
01814124	26.3	24.5	61.9	6.9E-04	2.2	0.71	0.64	263.	142.239	153.8	SPO
00:16:20	0.6	0.3	0.8	2.2	0.3	0.04	0.02	4.	0.001	0.8	44.
01814130	47.7	17.8	65.4	8.9E-04	2.0	0.49	1.004	193.	142.176	179.9	SPO
00:24:48	0.5	0.4	1.0	1.3	0.3	0.08	0.004	-	0.001	0.6	39.
01814133	29.9	-1.16	63.6	3.9E-04	6.	0.91	0.55	87.	322.250	152.9	SPO
00:31:13	0.7	0.19	0.8	2.6	3.	0.04	0.02	3.	0.001	0.6	21.
01814134	54.6	58.35	59.3	1.2E-02	22.	0.96	0.926	145.6	142.250	113.7	PER
00:31:52	0.5	0.12	0.4	0.3	14.	0.03	0.004	1.0	0.001	0.3	29.
01814135	345.8	20.45	34.8	6.4E-03	1.30	0.830	0.221	316.3	142.252	50.0	SPO
00:35:06	0.4	0.13	0.3	1.8	0.03	0.004	0.005	0.8	0.001	0.7	37.
01814144	14.4	53.05	57.3	5.9E-04	∞	0.99	0.945	210.0	142.270	106.8	SPO
01:02:05	0.4	0.09	0.9	2.7	-	0.07	0.003	1.2	0.001	0.7	40.
01814145	304.4	76.22	24.64	1.4E-02	1.396	0.275	1.013	178.6	142.275	45.6	SPO
01:09:28	0.3	0.14	0.18	2.5	0.013	0.007	0.001	0.5	0.001	0.3	45.
01814147	52.8	38.7	59.6	2.9E-04	1.43	0.36	0.916	130.	142.276	143.6	SPO
01:11:40	0.5	0.3	0.9	3.1	0.14	0.05	0.018	7.	0.001	0.7	36.
01814153	349.4	73.08	39.52	1.2E-03	2.61	0.612	1.011	185.0	142.284	71.1	SPO
01:22:38	0.9	0.18	0.19	3.5	0.10	0.015	0.001	0.5	0.001	0.3	39.
01814154	325.9	24.1	8.7	1.4E-02	0.965	0.252	0.722	295.2	142.286	10.4	SPO
01:25:13	0.3	0.3	0.3	4.2	0.002	0.006	0.006	0.4	0.001	0.4	78.
01814158	49.3	59.05	59.97	5.4E-03	∞	1.03	0.963	154.7	142.291	112.96	PER
01:33:14	0.4	0.09	0.12	0.8	-	0.01	0.002	0.5	0.001	0.14	48.
01814159	33.0	49.36	59.6	9.4E-04	3.8	0.74	1.001	193.3	142.292	120.8	SPO
01:34:44	0.4	0.13	0.6	1.9	0.7	0.05	0.002	1.0	0.001	0.5	36.
01814161	343.8	57.09	43.8	3.9E-03	5.0	0.822	0.889	223.2	142.293	76.6	SPO
01:35:57	0.3	0.14	0.2	1.6	0.4	0.014	0.002	0.5	0.001	0.3	60.
01814162	56.0	56.83	59.9	2.3E-03	17.	0.95	0.915	143.3	142.293	116.2	PER
01:36:18	0.2	0.08	0.3	1.5	7.	0.02	0.003	0.7	0.001	0.2	33.
01814164	68.5	54.5	60.1	9.2E-04	∞	0.97	0.780	122.2	142.295	118.5	SPO
01:39:34	0.5	0.3	0.6	2.3	-	0.04	0.009	1.7	0.001	0.6	30.
01814169	37.1	36.3	56.9	2.2E-04	1.16	0.22	0.91	245.	142.305	140.0	SPO
01:55:06	1.2	0.4	0.7	3.3	0.06	0.04	0.03	10.	0.001	1.0	37.
01814170	2.1	38.83	55.0	3.9E-04	10.	0.94	0.621	258.5	142.308	105.7	SPO
01:58:34	0.4	0.17	0.5	2.8	4.	0.02	0.007	1.4	0.001	0.6	47.
01814171	49.0	58.4	58.0	2.7E-04	6.	0.85	0.960	152.	142.310	112.5	PER
02:01:40	2.0	0.4	1.2	2.7	3.	0.09	0.014	4.	0.001	1.0	28.
01814176	54.2	60.14	58.8	6.1E-03	∞	0.99	0.931	146.8	142.314	111.0	PER
02:08:16	0.4	0.10	0.3	0.0	-	0.02	0.003	0.7	0.001	0.2	28.
01815002	54.80	59.2	59.0	4.9E-02	21.	0.96	0.932	146.9	143.024	112.6	PER
19:51:30	0.19	0.3	0.3	-0.6	11.	0.02	0.002	0.5	0.001	0.4	25.
01815003	50.82	57.66	58.40	1.3E-02	6.0	0.841	0.956	151.2	143.025	114.0	PER
19:52:30	0.10	0.17	0.10	0.6	0.4	0.010	0.001	0.3	0.001	0.2	29.
01815005	256.84	48.42	18.2	9.9E-03	4.3	0.77	1.011	184.53	143.031	25.9	SPO
20:02:20	0.19	0.06	0.4	3.4	0.4	0.02	0.001	0.13	0.001	0.4	85.
01815006	53.73	58.43	58.8	9.4E-03	9.9	0.906	0.938	147.6	143.042	113.42	PER
20:18:20	0.05	0.10	0.2	0.7	1.9	0.018	0.001	0.4	0.001	0.19	34.
01815021	260.1	43.3	11.2	2.1E-01	1.75	0.423	1.008	189.8	143.074	16.9	SPO
21:06:34	0.5	0.3	0.4	1.1	0.05	0.017	0.001	0.4	0.001	0.5	33.
01815022	38.06	47.33	63.7	5.0E-04	15.	0.93	1.011	184.7	143.076	128.1	SPO
21:09:37	0.13	0.16	0.4	2.7	7.	0.03	0.001	0.3	0.001	0.3	33.
01815026	308.1	-12.	3.2	1.8E-02	1.078	0.13	0.941	248.2	143.099	0.7	SPO
21:31:08	0.8	3.	0.7	3.8	0.019	0.03	0.012	1.4	0.005	0.4	40.
01815028	224.67	58.51	19.08	1.1E-02	3.20	0.691	0.988	160.24	143.092	27.77	SPO
21:32:57	0.16	0.07	0.16	3.4	0.09	0.009	0.001	0.12	0.001	0.19	46.
01815033	27.47	65.73	51.75	1.1E-01	4.85	0.792	1.011	175.87	143.108	95.97	SPO
21:56:51	0.15	0.06	0.09	-1.5	0.16	0.007	0.001	0.18	0.001	0.09	44.
01815036	345.2	16.1	37.0	4.0E-03	1.73	0.887	0.196	315.8	143.109	46.8	SPO
21:58:42	0.6	0.9	0.8	2.7	0.15	0.011	0.010	1.5	0.001	2.0	43.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 24).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
01815040	324.4	-10.1	24.11	1.2E-02	3.01	0.817	0.549	271.0	143.113	3.1	α CAP
22:02:21	0.4	0.4	0.07	2.9	0.11	0.005	0.005	0.8	0.001	0.3	14.
01815043	54.82	57.11	60.97	3.5E-02	∞	1.02	0.937	148.57	143.121	116.67	PER
22:16:10	0.08	0.07	0.06	1.0	-	0.01	0.001	0.14	0.001	0.10	32.
01815052	10.9	49.66	52.5	6.3E-04	2.7	0.69	0.842	234.	143.137	103.3	SPO
22:41:29	0.5	0.16	0.9	2.8	0.5	0.05	0.010	3.	0.001	0.8	40.
01815056	133.49	75.37	38.1	8.1E-03	4.4	0.82	0.786	120.3	143.142	62.0	SPO
22:47:34	0.12	0.12	0.5	1.0	0.6	0.02	0.003	0.9	0.001	0.5	34.
01815057	58.3	59.2	58.9	1.5E-02	∞	0.95	0.907	141.8	143.144	112.6	PER
22:51:36	0.3	0.2	0.6	2.5	-	0.04	0.004	1.1	0.001	0.5	35.
01815058	327.61	-2.61	15.14	1.5E-02	1.205	0.496	0.608	281.9	143.146	5.30	SPO
22:52:33	0.15	0.13	0.14	3.5	0.006	0.004	0.003	0.3	0.001	0.11	24.
01815061	54.	60.	58.7	9.3E-03	∞	0.95	0.94	148.	143.149	112.	PER
22:58:04	4.	3.	0.6	-0.4	-	0.13	0.03	7.	0.001	4.	57.
01815064	302.21	-1.25	18.75	1.1E-01	4.8	0.833	0.804	236.92	143.157	9.57	SPO
23:09:60	0.08	0.08	0.19	1.5	0.3	0.009	0.002	0.11	0.001	0.12	27.
01815068	313.7	-3.16	19.3	9.1E-03	2.55	0.725	0.701	254.4	143.165	8.14	SPO
23:21:40	0.3	0.15	0.2	3.3	0.09	0.009	0.004	0.6	0.001	0.15	17.
01815069	27.67	34.07	66.04	1.1E-03	∞	0.986	0.857	226.4	143.165	141.6	SPO
23:22:11	0.20	0.13	0.16	1.6	-	0.013	0.003	0.6	0.001	0.2	33.
01815070	51.5	62.1	58.4	7.7E-04	∞	1.03	0.955	152.6	143.165	108.4	PER
23:23:18	0.5	0.3	0.3	1.9	-	0.03	0.003	0.8	0.001	0.5	27.
01815071	353.8	9.7	5.6	2.8E-02	0.854	0.257	0.635	325.6	143.172	2.4	SPO
23:30:11	1.0	0.7	0.3	2.7	0.006	0.011	0.013	0.9	0.001	0.3	42.
01815075	24.3	53.39	53.0	1.4E-03	1.97	0.51	0.970	209.0	143.177	107.9	SPO
23:40:11	0.4	0.14	0.5	1.6	0.14	0.03	0.003	1.6	0.001	0.5	33.
01815076	51.2	63.1	56.9	2.2E-03	∞	0.95	0.953	151.6	143.178	106.2	PER
23:41:56	1.3	0.3	0.8	1.5	-	0.06	0.007	2.0	0.001	0.7	37.
01815077	126.41	63.5	43.4	1.8E-02	∞	0.988	0.594	99.7	143.178	67.0	SPO
23:42:51	0.11	0.4	0.3	0.6	-	0.014	0.007	1.0	0.001	0.4	26.
01815078	274.02	57.25	22.1	2.4E-02	3.5	0.709	1.005	191.14	143.181	34.5	κ CYG
23:45:48	0.12	0.09	0.3	2.4	0.2	0.017	0.001	0.09	0.001	0.4	50.
01815086	321.4	0.4	19.4	8.1E-03	1.67	0.638	0.605	271.9	142.229	9.7	α CAP
23:59:25	0.3	0.2	0.3	3.8	0.04	0.010	0.005	0.7	0.001	0.3	17.
01815088	325.32	26.10	27.9	4.5E-03	2.05	0.723	0.567	272.8	143.191	35.7	SPO
00:01:47	0.11	0.06	0.2	3.0	0.05	0.006	0.002	0.3	0.001	0.3	63.
01815089	349.8	3.3	37.9	4.3E-03	1.80	0.951	0.089	330.7	143.192	22.3	N δ AQR
00:02:42	0.6	0.4	0.3	1.6	0.09	0.002	0.006	1.1	0.001	1.2	31.
01815091	33.95	19.82	68.9	1.9E-03	∞	0.98	0.823	231.6	143.193	169.19	SPO
00:05:07	0.14	0.08	0.3	1.1	-	0.02	0.004	0.8	0.001	0.16	29.
01815092	8.5	38.33	53.5	7.5E-04	2.4	0.76	0.588	268.	143.194	110.7	SPO
00:05:48	0.8	0.17	0.8	2.2	0.4	0.03	0.016	3.	0.001	1.2	40.
01815097	338.9	48.12	21.15	5.3E-03	0.912	0.369	0.575	307.0	143.199	39.1	SPO
00:14:08	0.3	0.10	0.15	3.5	0.005	0.002	0.004	0.8	0.001	0.3	57.
01815101	333.6	-13.5	25.0	1.4E-02	2.05	0.782	0.446	106.0	323.198	2.3	S PSC
00:16:03	0.5	1.0	0.7	2.0	0.16	0.020	0.012	1.3	0.001	0.9	19.
01815102	347.1	-4.6	27.19	1.0E-02	1.17	0.808	0.225	317.9	143.207	1.3	N ι AQR
00:18:40	0.9	0.8	0.17	2.7	0.04	0.004	0.010	1.6	0.004	1.2	18.
01815103	356.3	-10.77	37.7	8.5E-03	1.74	0.946	0.094	150.1	323.203	26.0	S δ AQR
00:20:25	0.2	0.13	0.2	2.0	0.04	0.002	0.002	0.4	0.001	0.6	13.
01815106	74.92	36.50	65.73	8.0E-03	∞	0.997	0.619	102.8	143.205	151.56	SPO
00:23:29	0.04	0.05	0.09	0.5	-	0.005	0.002	0.3	0.001	0.11	32.
01815110	50.1	56.23	60.0	1.1E-03	10.	0.91	0.966	154.7	143.214	116.9	PER
00:36:43	0.3	0.08	0.5	1.7	5.	0.04	0.002	0.9	0.001	0.4	28.
01815111	54.4	57.97	59.9	1.3E-03	∞	0.97	0.938	148.3	143.218	114.8	PER
00:41:32	0.4	0.20	0.5	2.0	-	0.04	0.004	1.0	0.001	0.4	31.
01815115	4.0	54.79	49.6	1.0E-03	3.3	0.73	0.887	225.0	143.225	93.2	SPO
00:52:59	0.3	0.06	0.4	2.6	0.4	0.03	0.003	1.1	0.001	0.4	41.
01815116	55.8	62.0	57.9	1.2E-03	∞	0.99	0.929	146.5	143.226	108.2	PER
00:54:09	0.6	0.2	0.3	2.1	-	0.02	0.004	0.8	0.001	0.4	35.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 25).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
01815119	47.8	44.5	64.2	1.0E-03	5.	0.82	0.999	166.	143.230	135.5	SPO
01:00:43	1.2	0.3	1.3	1.8	3.	0.11	0.006	3.	0.001	0.8	40.
01815131	54.2	58.19	60.3	1.4E-03	∞	1.01	0.942	149.4	143.248	114.8	PER
01:26:46	0.3	0.09	0.3	1.8	-	0.03	0.002	0.6	0.001	0.3	37.
01815132	34.1	43.91	61.5	2.5E-03	3.3	0.70	0.983	201.5	143.248	129.8	SPO
01:27:24	0.5	0.13	0.8	1.1	0.7	0.06	0.003	1.6	0.001	0.5	45.
01815138	56.9	59.81	59.2	2.7E-03	∞	0.99	0.922	145.1	143.260	111.96	PER
01:45:46	0.4	0.08	0.3	1.3	-	0.02	0.003	0.6	0.001	0.19	32.
01815152	54.0	57.6	58.8	1.2E-03	7.	0.88	0.937	147.1	143.280	114.6	PER
02:15:27	1.0	0.3	0.6	1.8	3.	0.05	0.008	1.9	0.001	0.5	38.
01815155	336.22	-13.1	32.7	9.0E-03	6.9	0.951	0.337	111.6	323.281	4.1	SPO
02:18:21	0.17	0.3	0.4	2.8	1.2	0.009	0.005	0.5	0.001	0.4	21.
01815163	58.9	59.14	59.3	3.2E-03	∞	0.99	0.906	142.1	143.286	112.9	PER
02:24:39	0.5	0.17	0.5	0.6	-	0.04	0.005	1.2	0.001	0.4	32.
01816003	57.5	63.3	57.1	2.4E-03	∞	0.97	0.925	145.6	143.991	106.3	PER
20:00:24	0.3	0.4	0.3	1.7	-	0.03	0.002	0.7	0.001	0.5	31.
01816004	36.51	49.12	48.29	8.0E-04	0.939	0.110	0.835	320.	143.992	113.3	SPO
20:01:58	0.15	0.14	0.14	3.5	0.008	0.007	0.013	3.	0.001	0.2	36.
01816011	330.3	12.02	29.75	6.0E-03	2.57	0.835	0.423	286.2	144.024	26.1	SPO
20:48:38	0.3	0.14	0.15	2.6	0.08	0.004	0.004	0.6	0.001	0.2	35.
01816013	55.6	56.4	60.3	4.6E-04	14.	0.93	0.937	147.8	144.031	117.5	PER
20:59:19	0.3	0.4	0.3	2.9	6.	0.03	0.002	0.7	0.001	0.5	29.
01816014	54.70	58.01	60.53	1.1E-02	∞	1.015	0.946	150.50	144.034	115.39	PER
21:04:03	0.09	0.10	0.09	1.2	-	0.008	0.001	0.19	0.001	0.15	33.
01816017	285.21	30.98	18.53	7.9E-02	4.63	0.796	0.943	212.27	144.042	22.82	SPO
21:16:18	0.03	0.02	0.09	2.1	0.11	0.005	0.001	0.04	0.001	0.08	79.
01816018	259.63	55.87	19.2	9.3E-03	3.06	0.669	1.012	182.79	144.044	29.4	κ CYG
21:18:29	0.14	0.09	0.2	3.4	0.11	0.012	0.001	0.10	0.001	0.2	82.
01816023	54.1	56.47	60.8	4.8E-04	∞	0.97	0.950	151.1	144.066	117.6	PER
21:52:04	0.3	0.19	0.4	3.3	-	0.03	0.002	0.7	0.001	0.4	37.
01816029	351.9	2.6	34.9	7.9E-03	1.35	0.928	0.098	331.4	144.082	15.3	N ι AQR
22:15:44	0.2	0.2	0.2	1.8	0.02	0.002	0.003	0.4	0.001	0.7	35.
01816037	283.59	6.1	11.85	8.5E-03	2.47	0.618	0.944	214.51	144.104	9.03	SPO
22:48:12	0.20	0.3	0.20	4.6	0.07	0.011	0.001	0.20	0.001	0.19	33.
01816040	180.9	81.37	32.9	1.7E-03	3.5	0.738	0.912	140.0	144.111	53.8	SPO
22:58:40	1.6	0.09	0.3	3.8	0.3	0.019	0.002	0.7	0.001	0.4	37.
01816045	52.0	61.4	57.16	3.2E-02	8.8	0.891	0.956	151.8	144.122	108.6	PER
23:15:17	0.3	0.2	0.19	-0.2	1.4	0.018	0.002	0.5	0.001	0.3	47.
01816048	352.86	8.33	42.1	1.5E-03	2.20	0.971	0.064	334.4	144.124	47.3	SPO
23:19:05	0.12	0.10	0.3	2.9	0.08	0.001	0.001	0.2	0.001	0.8	35.
01816050	70.1	52.8	40.7	1.2E-03	0.768	0.592	0.313	31.1	144.128	98.8	SPO
23:24:46	0.3	0.3	0.3	3.4	0.008	0.007	0.008	1.0	0.001	0.7	36.
01816065	60.2	45.7	59.1	3.1E-04	1.86	0.55	0.842	122.	144.163	133.1	SPO
00:17:09	0.7	0.3	0.8	3.0	0.20	0.04	0.017	4.	0.001	0.7	43.
01816072	35.63	-6.75	63.0	5.7E-04	8.3	0.922	0.651	75.2	324.181	139.7	SPO
00:43:19	0.19	0.15	0.2	2.8	1.5	0.014	0.006	1.0	0.001	0.3	26.
01816073	179.6	64.3	20.51	7.1E-03	1.71	0.501	0.852	121.7	144.188	30.6	SPO
00:54:11	0.9	0.4	0.15	3.7	0.03	0.008	0.004	1.0	0.001	0.3	27.
01816077	47.33	26.71	65.5	2.0E-03	2.2	0.55	1.006	191.3	144.205	164.3	SPO
01:21:17	0.16	0.10	1.0	0.4	0.4	0.09	0.001	1.5	0.001	0.3	57.
01816081	130.95	67.1	39.5	2.3E-03	4.6	0.857	0.654	103.5	144.208	62.6	SPO
01:24:57	0.16	0.2	0.5	2.2	0.6	0.019	0.004	1.0	0.001	0.6	40.
01816087	1.0	60.3	49.0	1.2E-03	6.	0.85	0.945	211.3	144.224	88.2	SPO
01:49:06	0.2	0.3	0.8	2.7	2.	0.05	0.004	1.4	0.001	0.7	87.
01816091	56.2	57.16	61.3	2.1E-03	∞	1.04	0.939	149.2	144.230	117.1	PER
01:57:41	0.3	0.07	0.3	1.3	-	0.03	0.002	0.6	0.001	0.2	46.
01816092	46.8	61.8	48.7	2.3E-03	1.45	0.35	0.951	140.	144.232	100.5	SPO
02:00:29	1.0	0.3	0.5	1.6	0.07	0.03	0.009	4.	0.001	0.6	58.
01C13009	113.38	32.26	33.94	1.1E-02*	1.309	0.890	0.143	324.45	261.790	22.94	GEM
18:13:05	0.07	0.05	0.06	2.4	0.006	0.001	0.001	0.10	0.001	0.13	44.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 26).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
01C13012	113.4	33.1	33.4	2.3E-03	1.28	0.880	0.153	323.5	261.794	23.5	GEM
18:18:44	0.3	0.3	0.3	3.4	0.03	0.004	0.003	0.5	0.001	0.6	40.
01C13013	115.1	32.1	30.8	2.7E-03*	1.06	0.852	0.156	325.9	261.794	20.1	GEM
18:19:06	0.3	0.6	0.4	3.4	0.02	0.006	0.005	0.6	0.001	1.0	46.
01C13017	112.63	32.12	35.1	3.9E-03	1.45	0.904	0.140	323.88	261.804	23.5	GEM
18:33:05	0.10	0.08	0.2	3.1	0.02	0.002	0.002	0.16	0.001	0.3	47.
01C13021	113.97	32.6	34.76	4.7E-02	1.353	0.899	0.137	325.0	261.818	25.2	GEM
18:52:18	0.17	0.3	0.11	0.9	0.014	0.002	0.002	0.4	0.001	0.5	43.
01C13024	63.1	15.9	9.24	2.1E-02	1.41	0.392	0.859	56.9	81.840	1.45	SPO
19:12:33	0.8	0.3	0.20	3.1	0.02	0.010	0.003	1.0	0.001	0.09	50.
01C13025	113.2	32.5	34.7	2.1E-02	1.39	0.898	0.142	324.1	261.833	24.1	GEM
19:13:43	0.4	0.2	0.3	1.4	0.04	0.003	0.004	0.6	0.001	0.7	43.
01C13031	96.4	26.9	30.6	1.4E-02	2.31	0.865	0.311	298.4	261.840	4.7	N TAU
19:26:21	0.3	0.4	0.2	2.1	0.09	0.005	0.004	0.6	0.001	0.5	38.
01C13035	112.3	32.68	34.68	3.0E-03	1.45	0.897	0.149	322.6	261.852	23.6	GEM
19:41:22	0.2	0.11	0.20	3.0	0.03	0.002	0.002	0.4	0.001	0.4	44.
01C13038	114.1	31.9	33.83	6.3E-03	1.26	0.891	0.137	325.7	261.857	22.7	GEM
19:47:05	0.3	0.7	0.15	2.6	0.02	0.003	0.005	0.8	0.001	1.3	43.
01C13040	113.7	32.56	34.01	1.7E-03	1.310	0.890	0.144	324.4	261.862	23.7	GEM
19:54:41	0.3	0.16	0.13	4.0	0.019	0.002	0.002	0.4	0.001	0.4	46.
01C13041	112.5	33.8	33.53	1.0E-01	1.35	0.879	0.164	321.5	261.862	24.1	GEM
19:54:43	0.3	0.4	0.15	0.6	0.02	0.002	0.004	0.6	0.001	0.7	50.
01C13042	113.3	32.5	31.22	1.2E-03	1.15	0.853	0.168	323.2	261.864	20.0	GEM
19:57:46	0.7	0.6	0.17	3.6	0.03	0.003	0.006	1.1	0.001	1.0	50.
01C13043	113.56	32.83	34.87	9.7E-02	1.393	0.899	0.140	324.21	261.865	25.25	GEM
19:59:24	0.07	0.06	0.04	0.1	0.005	0.001	0.001	0.11	0.001	0.13	46.
01C13044	112.9	33.3	31.46	5.7E-03	1.185	0.853	0.174	322.0	261.867	21.2	GEM
20:02:32	0.3	0.3	0.19	2.8	0.016	0.003	0.003	0.5	0.001	0.6	47.
01C13051	113.16	32.25	34.64	4.4E-03	1.39	0.899	0.141	324.23	261.871	23.6	GEM
20:07:21	0.10	0.06	0.30	2.8	0.03	0.004	0.002	0.15	0.001	0.4	45.
01C13067	113.8	32.18	32.97	5.8E-03	1.228	0.879	0.149	324.6	261.895	21.8	GEM
20:41:54	0.2	0.08	0.20	2.6	0.017	0.003	0.002	0.3	0.001	0.3	45.
01C13141	87.46	26.62	23.13	1.4E-02	1.84	0.731	0.495	280.3	262.014	2.64	N ξ ORI
23:35:10	0.12	0.10	0.15	2.7	0.03	0.004	0.002	0.2	0.001	0.08	63.
01C13143	112.4	33.25	34.6	7.4E-03	1.46	0.894	0.154	321.8	262.020	24.4	GEM
23:38:05	0.2	0.13	0.4	2.0	0.04	0.005	0.003	0.4	0.001	0.6	43.
01C13154	112.6	31.84	34.85	1.1E-02	1.45	0.902	0.142	323.6	262.029	22.4	GEM
23:51:43	0.4	0.16	0.17	1.5	0.03	0.002	0.003	0.6	0.001	0.5	48.
01C13159	117.1	33.7	32.19	5.2E-02	1.09	0.867	0.145	327.	262.034	26.0	GEM
23:57:49	1.9	0.7	0.17	0.3	0.06	0.005	0.012	2.	0.001	2.0	51.
01C13176	111.8	31.86	35.61	1.4E-03	1.58	0.910	0.142	322.8	262.042	22.7	GEM
00:09:52	0.3	0.17	0.17	3.9	0.03	0.002	0.003	0.5	0.001	0.5	60.
01C13177	112.23	32.89	34.0	2.3E-03	1.41	0.888	0.157	321.9	262.042	23.0	GEM
00:10:10	0.17	0.13	0.2	3.2	0.02	0.003	0.002	0.3	0.001	0.4	73.
01C13179	109.8	31.68	34.3	1.1E-03	1.58	0.895	0.166	319.5	262.043	19.2	GEM
00:10:60	0.4	0.12	0.6	3.9	0.08	0.008	0.006	0.7	0.001	0.7	48.
01C13180	115.9	31.3	35.1	8.4E-04	1.28	0.910	0.115	328.6	262.045	25.0	GEM
00:13:11	0.4	0.3	0.3	3.8	0.03	0.004	0.004	0.6	0.001	0.8	59.
01C13198	113.42	32.00	34.62	1.6E-02	1.376	0.899	0.139	324.52	262.052	23.2	GEM
00:23:23	0.04	0.03	0.19	-0.1	0.018	0.002	0.001	0.08	0.001	0.3	67.
01C13208	113.25	32.44	32.2	2.7E-03	1.212	0.867	0.162	323.2	262.062	20.8	GEM
00:37:43	0.19	0.10	0.2	2.9	0.016	0.003	0.002	0.3	0.001	0.4	65.
01C13221	112.9	32.77	35.28	8.0E-03*	1.49	0.904	0.143	323.1	262.070	24.9	GEM
00:49:27	0.4	0.15	0.17	1.2	0.03	0.002	0.003	0.6	0.001	0.5	46.
01C13222	114.22	32.55	34.00	4.2E-03	1.293	0.890	0.142	324.8	262.070	24.0	GEM
00:49:43	0.17	0.07	0.09	2.7	0.011	0.001	0.001	0.2	0.001	0.2	55.
01C13236	113.7	32.24	33.75	1.2E-02	1.295	0.888	0.145	324.4	262.090	22.8	GEM
01:17:40	0.3	0.10	0.12	0.7	0.015	0.002	0.002	0.3	0.001	0.3	57.
01C13240	111.95	30.11	34.1	7.3E-03	1.39	0.898	0.142	324.0	262.092	17.9	GEM
01:20:40	0.13	0.16	0.3	2.2	0.02	0.003	0.002	0.3	0.001	0.4	48.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 27).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
01C13262	111.6	34.66	35.6	1.1E-03	1.68	0.902	0.164	319.1	262.108	27.3	GEM
01:42:53	0.4	0.13	0.3	3.6	0.05	0.003	0.003	0.5	0.001	0.5	49.
01C13268	113.45	32.22	33.27	2.4E-03	1.274	0.882	0.151	323.9	262.110	21.9	GEM
01:45:35	0.19	0.17	0.10	3.2	0.012	0.001	0.002	0.3	0.001	0.4	57.
01C13270	114.8	32.5	34.1	3.5E-02	1.27	0.893	0.137	325.7	262.111	24.6	GEM
01:47:30	0.2	0.4	0.3	0.9	0.02	0.004	0.004	0.6	0.001	0.9	64.
01C13280	113.04	32.57	34.78	2.9E-02	1.429	0.899	0.145	323.3	262.118	24.0	GEM
01:57:08	0.17	0.17	0.16	1.0	0.019	0.002	0.002	0.3	0.001	0.4	41.
01C13281	113.61	32.49	34.4	4.8E-03	1.36	0.895	0.143	324.10	262.118	23.9	GEM
01:57:13	0.07	0.06	0.2	2.3	0.02	0.003	0.002	0.12	0.001	0.3	62.
01C13293	110.89	33.32	36.40	3.6E-03	1.84	0.916	0.154	319.8	262.124	25.4	GEM
02:05:04	0.15	0.08	0.17	2.7	0.04	0.002	0.002	0.2	0.001	0.3	54.
01C13296	113.64	32.76	35.00	1.8E-02	1.416	0.901	0.141	323.99	262.125	25.2	GEM
02:06:57	0.11	0.08	0.17	1.3	0.018	0.002	0.001	0.17	0.001	0.3	46.
01C13305	112.9	32.3	34.5	8.8E-04	1.41	0.896	0.146	323.3	262.128	23.0	GEM
02:11:59	0.5	0.3	0.6	4.2	0.07	0.008	0.006	0.8	0.001	1.1	57.
01C13309	115.2	34.1	35.8	4.7E-03	1.43	0.905	0.136	324.5	262.131	30.3	GEM
02:15:50	0.3	0.4	0.3	2.2	0.04	0.004	0.004	0.6	0.001	0.9	41.
01C13332	114.3	32.5	34.2	1.1E-03	1.30	0.892	0.140	325.0	262.141	24.2	GEM
02:29:26	0.5	0.3	0.5	3.5	0.04	0.006	0.005	0.7	0.001	0.9	49.
01C13335	114.6	32.10	31.71	1.2E-03	1.132	0.863	0.155	325.0	262.144	20.7	GEM
02:33:34	0.3	0.16	0.16	4.3	0.014	0.002	0.003	0.4	0.001	0.4	55.
01C13340	90.42	-0.31	26.23	3.8E-03	2.22	0.769	0.512	95.9	82.146	21.52	SPO
02:35:27	0.16	0.15	0.11	3.8	0.03	0.003	0.002	0.4	0.001	0.15	46.
01C13344	114.17	32.20	34.04	6.2E-02	1.298	0.892	0.140	324.99	262.147	23.40	GEM
02:38:44	0.06	0.05	0.06	0.5	0.006	0.001	0.001	0.10	0.001	0.14	49.
01C13353	171.9	28.1	59.7	2.0E-04	1.49	0.45	0.820	243.	262.151	136.3	SPO
02:43:30	0.3	0.5	0.6	3.8	0.11	0.03	0.014	4.	0.001	1.0	46.
01C13354	110.7	31.4	31.32	1.5E-03	1.26	0.855	0.182	320.2	262.151	16.5	GEM
02:43:40	0.8	0.4	0.17	3.5	0.04	0.003	0.007	1.2	0.001	0.8	46.
01C13362	135.0	1.9	61.3	1.7E-04	∞	0.984	0.313	112.0	82.156	139.7	SPO
02:50:40	0.4	0.3	0.5	3.5	-	0.015	0.010	1.8	0.001	0.9	32.
01C13363	118.0	33.9	32.9	1.3E-03	1.10	0.875	0.138	327.5	262.157	28.0	GEM
02:51:42	0.8	0.6	0.5	3.2	0.04	0.007	0.007	1.1	0.001	1.4	41.
01C13382	111.8	31.7	35.9	6.8E-04	1.64	0.914	0.140	322.8	262.168	22.7	GEM
03:07:33	0.4	0.4	0.3	3.8	0.05	0.003	0.004	0.7	0.001	0.9	49.
01C13395	113.3	33.5	34.7	2.0E-03	1.42	0.894	0.151	322.6	262.176	25.7	GEM
03:18:38	0.5	0.9	0.3	3.0	0.04	0.005	0.008	1.2	0.001	1.6	51.
01C13396	112.93	32.06	34.9	7.4E-03	1.44	0.901	0.142	323.64	262.176	23.1	GEM
03:19:08	0.11	0.09	0.3	2.0	0.03	0.003	0.002	0.19	0.001	0.4	47.
01C13399	114.2	33.2	34.6	3.7E-03	1.36	0.894	0.143	324.1	262.178	25.8	GEM
03:21:59	0.2	0.3	0.3	2.4	0.03	0.004	0.003	0.4	0.001	0.7	43.
01C13401	113.56	32.41	35.0	1.1E-02	1.42	0.902	0.139	324.15	262.179	24.4	GEM
03:22:52	0.05	0.05	0.2	1.7	0.02	0.003	0.002	0.11	0.001	0.4	55.
01C13404	112.8	30.3	34.30	5.0E-03*	1.36	0.900	0.136	325.0	262.179	19.0	GEM
03:23:37	0.3	0.4	0.13	1.9	0.02	0.002	0.003	0.6	0.001	0.8	40.
01C13417	113.17	32.9	32.49	8.8E-03	1.246	0.869	0.164	322.5	262.186	21.7	GEM
03:33:24	0.18	0.3	0.11	1.8	0.011	0.002	0.002	0.4	0.001	0.4	54.
01C13426	113.58	31.74	33.55	4.7E-02	1.285	0.887	0.145	324.44	262.191	21.43	GEM
03:41:12	0.08	0.07	0.06	0.6	0.006	0.001	0.001	0.13	0.001	0.17	52.
01C13438	113.75	32.63	34.52	9.8E-03	1.369	0.896	0.143	324.02	262.197	24.4	GEM
03:49:13	0.07	0.06	0.12	2.2	0.011	0.001	0.001	0.12	0.001	0.2	52.
01C13439	113.7	31.83	32.7	2.6E-03	1.22	0.875	0.152	324.2	262.197	20.6	GEM
03:49:22	0.2	0.19	0.6	3.2	0.04	0.008	0.005	0.4	0.001	0.8	44.
01C14025	113.9	32.8	32.7	3.2E-02	1.264	0.872	0.162	322.5	262.864	22.1	GEM
19:32:46	0.2	0.4	0.2	1.3	0.020	0.003	0.003	0.5	0.001	0.7	45.
01C14052	113.32	32.33	34.4	1.4E-02	1.43	0.894	0.152	322.4	262.952	22.7	GEM
21:37:06	0.20	0.13	0.3	1.8	0.03	0.003	0.002	0.3	0.001	0.4	51.
01C14055	116.0	31.15	33.2	1.5E-03	1.19	0.886	0.135	326.8	262.960	21.5	GEM
21:48:49	0.3	0.18	0.5	3.9	0.03	0.006	0.004	0.5	0.001	0.7	42.

Table II: Geocentric radiants and heliocentric trajectories of video meteors (part 28).

Meteor Time	α_G [°]	δ_G [°]	v_G [km/s]	m [g] M_{abs}	a [AU]	e [°]	q [AU]	ω [°]	Ω [°]	i [°]	Shower Q
01C14062	99.5	35.69	33.7	1.6E-03	3.5	0.914	0.301	297.0	262.975	18.5	SPO
22:09:35	0.5	0.15	0.4	3.3	0.4	0.009	0.006	0.8	0.001	0.4	47.
01C14066	113.6	31.7	34.8	1.1E-02	1.44	0.901	0.142	323.6	262.980	22.5	GEM
22:17:47	0.5	0.6	0.2	1.9	0.04	0.003	0.005	0.9	0.001	1.1	44.
01C14071	123.01	7.65	22.49	1.9E-02	0.715	0.760	0.172	155.74	82.990	16.36	SPO
22:29:31	0.06	0.04	0.05	3.3	0.001	0.001	0.001	0.06	0.001	0.07	39.
01C14080	113.6	32.3	35.8	1.9E-03	1.57	0.911	0.140	323.1	263.009	24.7	GEM
22:58:13	0.4	0.3	0.4	2.9	0.05	0.004	0.004	0.6	0.001	0.7	46.
01C14083	92.4	18.9	29.5	4.9E-03	3.0	0.874	0.383	108.1	83.016	5.2	N TAU
23:04:11	0.8	0.5	0.3	3.3	0.3	0.010	0.011	1.7	0.001	0.6	36.
01C14084	114.69	32.42	34.6	3.7E-03	1.37	0.896	0.142	324.1	263.015	24.3	GEM
23:06:30	0.20	0.10	0.3	2.9	0.03	0.003	0.002	0.3	0.001	0.4	49.
01C14090	112.8	33.5	35.0	1.9E-02	1.56	0.897	0.161	320.3	263.031	24.9	GEM
23:29:39	0.5	0.3	0.4	0.9	0.06	0.005	0.005	0.7	0.001	0.8	45.

Table III: List of observational nights.

Date	Period of observation [UT]
22./23. 8. 1998	19:30 – 2:30
10./11. 8. 1998	20:00 – 22:00
11./12. 8. 1998	20:00 – 2:15
20./21. 4. 1999	21:35 – 2:45
22./23. 4. 1999	0:58 – 2:45
23./24. 4. 1999	0:20 – 2:40
5./6. 5. 1999	0:31 – 2:13
8./9. 8. 1999	20:20 – 2:11
12./13. 8. 1999	20:55 – 2:20
13./14. 8. 1999	20:00 – 2:20
19./20. 10. 1999	22:41 – 4:20
13./14. 12. 1999	22:14 – 1:10
2./3. 5. 2000	0:00 – 2:10
3./4. 5. 2000	20:10 – 2:15
4./5. 5. 2000	22:22 – 2:10
5./6. 5. 2000	22:00 – 2:02
31./1.8.2000	22:00 – 22:43
1./2. 8. 2000	20:10 – 2:00
9./10. 8. 2000	20:00 – 2:10
11./12. 8. 2000	20:10 – 2:20
12./13. 8. 2000	0:08 – 2:35
20./21. 10. 2000	21:00 – 4:30
21./22. 10. 2000	20:59 – 4:30
22./23. 10. 2000	20:45 – 4:30
1./2. 5. 2001	0:31 – 2:10
2./3. 5. 2001	0:30 – 2:15
3./4. 5. 2001	0:30 – 2:15
12./13. 8. 2001	20:59 – 1:50
13./14. 8. 2001	22:45 – 2:18
15./16. 8. 2001	19:45 – 2:30
16./17. 8. 2001	19:46 – 2:25
13./14. 12. 2001	17:26 – 4:37
14./15. 12. 2001	18:00 – 23:50

Table IV: List of meteor showers included in the catalogue.

Shower	Abbreviation	Meteors
δ Draconids	δ DRA	4
μ Virginids	μ VIR	1
α Scorpiids	α SCO	3
ϕ Bootids	ϕ BOO	2
Lyrids	LYR	8
η Aquarids	η AQR	12
τ Herculids	τ HER	1
χ Scorpiids	χ SCO	1
Northern δ Aquarids	N δ AQR	4
Southern δ Aquarids	S δ AQR	5
α Capricornids	α CAP	11
Southern ι Aquarids	S ι AQR	5
Northern ι Aquarids	N ι AQR	9
Perseids	PER	182
κ Cygnids	κ CYG	18
Southern Piscids	S PSC	1
Northern Piscids	N PSC	1
Southern Taurids	S TAU	17
Northern Taurids	N TAU	5
Annual Andromedids	Ann AND	1
Orionids	ORI	101
Leo Minorids	LEO MIN	5
Northern χ Orionids	N χ ORI	1
Geminids	GEM	68
Sporadic	SPO	351