

Univerza v Ljubljani  
Fakulteta za matematiko in fiziko

# **Astronomija 1.**

## **Prva domača naloga**

Avtor: Matic Tonin

# Domača naloga iz Astronomije 1.

## 1. Naloga:

1. Obdobje opazovanja je od 23. 10. 2019 do 27.10. 2019
2. Najkrajše obdobje noči v izbranem intervalu je noč iz 23. 10 na 24. 10. 2019, ki je dolga 10h 4m 12s. Astronomski mrak se začne ob 19.43, astronomska zora pa se zgodi ob 5.50
3. Podatki o AGO observatoriju so:  $\varphi = +46^{\circ} 2' 37,5''$   $\lambda = +14^{\circ} 31' 38,5'' = +0h 58m 6,56s$   
Nadmorska višina = 410 m
4. Za moje podatke, torej da je  $rot\_per(h) \leq 10$  h in da je  $H \leq 11$ , mi je spletna stran [https://ssd.jpl.nasa.gov/sbdb\\_query.cgi](https://ssd.jpl.nasa.gov/sbdb_query.cgi) našla 691 rezultatov.

Od tega jih je zgolj 12 primernih za naše opazovanje, saj so dovolj vidni z AGO observatorija, torej da imajo magnitudo močnejšo od 11 in da se njihova perioda preleta ujema s periodo noči.

Te asteroidi so:

	IAU name	Object ID	H	Diameter (km)	Rot_per (h)	Albedo
1	Ceres	<a href="#">a0000001</a>	3.3	939.4	9.074170	0.090
2	Pallas	<a href="#">a0000002</a>	4.1	545	7.8132	0.101
3	Juno	<a href="#">a0000003</a>	5.3	246.596	7.210	0.214
4	Vesta	<a href="#">a0000004</a>	3.2	525.4	5.34212766	0.4228
5	Metis	<a href="#">a0000009</a>	6.3	190	5.079	0.118
6	Eunomia	<a href="#">a0000015</a>	5.3	231.689	6.083	0.248
7	Psyche	<a href="#">a0000016</a>	5.9	226	4.196	0.1203
8	Lutetia	<a href="#">a0000021</a>	7.3	95.76	8.1655	0.2212
9	Amphitrite	<a href="#">a0000029</a>	5.8	189.559	5.3921	0.216
10	Laetitia	<a href="#">a0000039</a>	6.0	179.484	5.138	0.269
11	Herculina	<a href="#">a0000532</a>	5.8	167.791	9.405	0.285
12	Ludmilla	<a href="#">a0000675</a>	7.9	76	7.717	Ni napisan

Ob koncu dokumenta bom podal tudi tabelo vseh asteroidov, ki mi jih je podala spletna stran.

5. Moj glavni faktor izbiranja primerne asteroida je bil, koliko časa bo viden iz AGO observatorija in da je njegova rotacija čim manjša. Zato so asteroidi v številka 1, 2, 3, 6, 7, 10 in 11 takoj izpadli iz mojega seznama, saj sem želel, da so asteroidi na nebu dlje časa kot pa približno 4 ure.

Tako so mi ostali le še asteroidi 4, 5, 8, 9, in 12. Izbral pa sem si tistega z največjo periodo, torej asteroid številka 12. Ludmilla.

Za njegove efemeride pa mi izpiše.

JPL/HORIZONS 675 Ludmilla (A908 QH)  
2019-Oct-31 05:38:20  
Rec #: 675 (+COV) Soln.date: 2019-Sep-23\_19:10:58 # obs:  
2293 (1917-2019)

IAU76/J2000 helio. ecliptic osc. elements (au, days, deg.,  
period=Julian yrs):

EPOCH= 2455546.5 ! 2010-Dec-16.00 (TDB)	Residual
RMS= .31386	
EC= .2012766179895302 QR= 2.212287832000035 TP=	
2455449.541704501	
OM= 263.3010667177105 W= 151.7402137815536 IN=	
9.783326629897498	
A= 2.76977972828525 MA= 20.73104514711375 ADIST=	
3.327271624570465	
PER= 4.60974 N= .213814037 ANG MOM=	
.028042955	
DAN= 3.23025 DDN= 2.25737 L=	
55.3899007	
B= 4.6146234 MOID= 1.22921002 TP= 2010-	
Sep-10.0417045010	

Asteroid physical parameters (km, seconds, rotational period  
in hours):

GM= n.a.	RAD= 38.	ROTPER=
7.717		
H= 7.91	G= .150	B-V= .847
	ALBEDO= n.a.	STYP= S

ASTEROID comments:

1: soln ref.= JPL#42, OCC=0

2: source=ORB

Ephemeris / WWW\_USER Thu Oct 31 05:50:10 2019 Pasadena, USA  
/ Horizons

\*\*\*\*\*  
\*\*\*\*\*

Target body name: 675 Ludmilla (A908 QH) {source:  
JPL#42}

Center body name: Earth (399) {source:  
DE431}

Center-site name: (user defined site below)

\*\*\*\*\*  
\*\*\*\*\*

Start time : A.D. 2019-Oct-23 00:00:00.0000 UT

Stop time : A.D. 2019-Oct-24 00:00:00.0000 UT

Step-size : 1440 minutes

\*\*\*\*\*  
\*\*\*\*\*

Target pole/equ : No model available

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Target radii      : 38.0 km
Center geodetic   : 14.5272222,46.0436111,0.4100000 {E-
lon(deg),Lat(deg),Alt(km)}
Center cylindric: 14.5272222,4435.11645,4568.9087 {E-
lon(deg),Dxy(km),Dz(km)}
Center pole/equ   : High-precision EOP model          {East-
longitude positive}
Center radii      : 6378.1 x 6378.1 x 6356.8 km        {Equator,
meridian, pole}
Target primary    : Sun
Vis. interferer   : MOON (R_eq= 1737.400) km           {source:
DE431}
Rel. light bend   : Sun, EARTH                          {source:
DE431}
Rel. lgth bnd GM: 1.3271E+11, 3.9860E+05 km^3/s^2
Small-body perts: Yes                                   {source:
SB431-N16}
Atmos refraction: NO (AIRLESS)
RA format         : HMS
Time format       : CAL
EOP file          : eop.191030.p200121
EOP coverage      : DATA-BASED 1962-JAN-20 TO 2019-OCT-30.
PREDICTS-> 2020-JAN-20
Units conversion: 1 au= 149597870.700 km, c= 299792.458 km/s,
1 day= 86400.0 s
Table cut-offs 1: Elevation (-90.0deg=NO ),Airmass
(>38.000=NO), Daylight (NO )
Table cut-offs 2: Solar elongation ( 0.0,180.0=NO ),Local
Hour Angle( 0.0=NO )
Table cut-offs 3: RA/DEC angular rate ( 0.0=NO )
*****
*****
Initial IAU76/J2000 heliocentric ecliptic osculating elements
(au, days, deg.):
  EPOCH= 2455546.5 ! 2010-Dec-16.00 (TDB)              Residual
RMS= .31386
  EC= .2012766179895302   QR= 2.212287832000035   TP=
2455449.541704501
  OM= 263.3010667177105   W= 151.7402137815536   IN=
9.783326629897498
  Equivalent ICRF heliocentric equatorial cartesian
coordinates (au, au/d):
  X= 1.462447838690725E-01  Y= 2.084210646959616E+00  Z=
8.813051335543942E-01
  VX=-1.209211318946464E-02  VY= 2.552851049718479E-03  VZ=-
1.191224278282721E-03
Asteroid physical parameters (km, seconds, rotational period
in hours):
  GM= n.a.                RAD= 38.                ROTPER=
7.717
  H= 7.91                 G= .150                 B-V= .847

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                                ALBEDO= n.a.                                STYP= S
*****
*****
Date__ (UT) __HR:MN      R.A._ (ICRF/J2000.0)_DEC  APmag  S-brt
delta      deldot      S-O-T /r      S-T-O
*****
*****
$$SOE
  2019-Oct-23 00:00   m   03 05 47.22 +29 11 50.3   10.86   5.16
1.27688124705173   -8.4790053 154.3671 /L   11.2047
  2019-Oct-24 00:00      03 05 06.41 +29 07 07.4   10.84   5.14
1.27209832338181   -8.0879964 155.4138 /L   10.7708
$$EOE

```

## 2. Naloga

1. Za opazovalno obdobje sem si izbral noč iz 28 na 29. oktobra
2. Planeti, ki so vidni na dan 28.10.2019 iz AGO observatorija so:

1. KOI 0196 b
2. HAT-P-44 b
3. TrES-2 b
4. HATS-12 b
5. WASP-80 b
6. WASP-33 b
7. WASP-69 b
8. HD189733 b
9. CoRoT-18 b
10. HAT-P-28 b
11. HAT-P-53 b
12. CoRoT-13 b
13. XO-2 b

3. in 4.

Prehod bi lahko opazoval le pri planetu, saj imajo ostali magnitudo večjo od 13, DEPTH manjši od 0,02 ali pa preprosto ni na nebu v času našega astronomskega mraka.

Ime	Vzhod (UT/h,A)	Center (DD.MM . UT/h,A)	Zahod (UT/h,A)	Čas na nebu ( min)	Magnituda	DEPTH	Lastnosti
HD189733	19:41 46°,W	28.10. 20:36 37°,W	21:31 27°,W	109.6	7.67	0.0282	RA: 20 00 43.713 DE: +22 42 39.07

Na naslednji strani prilagam tabelo, ki jo je napisala spletna stran:

<b>OBJECT</b>		<b>BEGIN (UT/h,A)</b>	<b>CENTER (DD.MM. UT/h,A)</b>	<b>END (UT/h,A)</b>	<b>D (min)</b>	<b>V (MAG)</b>	<b>DEPTH (MAG)</b>	<b>Elements Coords</b>
<a href="#"><u>KOI 0196 b</u></a>	Cyg	15:47 86°,E	<b>28.10. 16:58 82°,W</b>	18:10 70°,W	142.5	14.465	0.0109	54970.1803+1.855558*E RA: 19 38 03 DE: +45 58 53.76
<a href="#"><u>HAT-P-44 b</u></a>	Boo	15:29 44°,NW	<b>28.10. 17:03 30°,NW</b>	18:37 18°,NW	187.63	13.21	0.0194	55352.83957+4.301217*E RA: 14 12 34.56 DE: +47 00 52.9
<a href="#"><u>TrES-2 b</u></a>	Dra	16:23 83°,NW	<b>28.10. 17:08 75°,W</b>	17:53 68°,W	90	11.41	0.0169	53957.6358+2.47061322*E RA: 19 07 14 DE: +49 18 59
<a href="#"><u>HATS-12 b</u></a>	Sgr	15:08 25°,S	<b>28.10. 17:25 22°,SW</b>	19:42 7°,SW	273.5	12.756	0.0042	56798.9556+3.142833*E RA: 19 16 48.72 DE: -19 21 21.2
<a href="#"><u>WASP-80 b</u></a>	Aql	16:47 43°,S	<b>28.10. 17:51 41°,S</b>	18:54 35°,SW	126.72	11.881	0.0310	56125.417512+3.0678504*E RA: 20 12 40.178 DE: -02 08 39.15
<a href="#"><u>WASP-33 b</u></a>	And	17:49 34°,E	<b>28.10. 19:11 48°,E</b>	20:32 62°,E	163	8.3	0.0151	54163.22373+1.2198669*E RA: 02 26 51.08 DE: +37 33 02.5
<a href="#"><u>WASP-69 b</u></a>	Aqr	18:36 38°,S	<b>28.10. 19:43 32°,SW</b>	20:50 23°,SW	133.78	9.87	0.0193	55748.83344+3.8681382*E RA: 21 00 06.19 DE: -05 05 40.1
<a href="#"><u>HD189733 b</u></a>	Vul	19:41 46°,W	<b>28.10. 20:36 37°,W</b>	21:31 27°,W	109.6	7.67	0.0282	53988.80336+2.2185733*E RA: 20 00 43.713 DE: +22 42 39.07
<a href="#"><u>CoRoT-18 b</u></a>	Mon	0:01 29°,SE	<b>29.10. 1:12 38°,SE</b>	2:24 44°,S	143.2	15	0.0215	55321.72412+1.9000693*E RA: 06 32 41.36 DE: -00 01 53.71
<a href="#"><u>HAT-P-28 b</u></a>	And	23:47 61°,W	<b>29.10. 1:24 45°,W</b>	3:00 29°,W	193.1	13.03	0.0162	55417.59832+3.257215*E RA: 00 52 00.27 DE: +34 43 42.9
<a href="#"><u>HAT-P-53 b</u></a>	And	1:42 50°,W	<b>29.10. 2:46 40°,W</b>	3:50 29°,NW	128.07	13.73	0.0135	55829.44781+1.9616241*E RA: 01 27 29.5 DE: +38 58 05.3
<a href="#"><u>CoRoT-13 b</u></a>	Mon	1:57 36°,SE	<b>29.10. 3:31 40°,S</b>	5:06 35°,SW	188.4	15.039	0.0089	54790.8091+4.03519*E RA: 06 50 53.07 DE: -05 05 11.26
<a href="#"><u>XO-2 b</u></a>	Lyn	2:47 74°,NE	<b>29.10. 4:08 86°,NE</b>	5:29 79°,NW	162	11.18	0.0124	54466.88454+2.61586178*E RA: 07 48 07 DE: +50 13 33

### 3. Naloga

1. Za obdobje opazovanja sem si izbral 28.10. 2019.
2. Za reklascenzijo sem se odločil, da bom izbral kar interval med 22 in 4 uro, saj je bila začetna reklascenzija enaka 24h, za deklinacijo pa sem določil, da mora biti večja od 44°, da bodo moji objekti dovolj visoko na nebu.
3. Sem opravil
4. Moj kriterij je bil:

Vmag < 12 & maintype = PM\* & (rah < 4 | rah > 22) & dec > 44 & pm > 300

5. Tabela vseh zvezd, ki sem jih dobil iz spletne strani [http://simbad.u-strasbg.fr/simbad/sim-sam?Criteria=%0D%0AVmag+%3C+12+%26+maintype+%3D+PM\\*+%26+%28rah+%3C+4+%7C+rah+%3E+22+%29+%26+dec+%3E+44+%26+pm+%3E+300%0D%0A&submit=submit+query&OutputMode=LIST&maxObject=10000&CriteriaFile=](http://simbad.u-strasbg.fr/simbad/sim-sam?Criteria=%0D%0AVmag+%3C+12+%26+maintype+%3D+PM*+%26+%28rah+%3C+4+%7C+rah+%3E+22+%29+%26+dec+%3E+44+%26+pm+%3E+300%0D%0A&submit=submit+query&OutputMode=LIST&maxObject=10000&CriteriaFile=):

#	identif	typ	coord1 (ICRS, J2000/2000)	pm	Mag V
1	Ross 223A	PM*	22 45 39.858300 +45 23 23.48540	325.9 93.6	10.93
2	Ross 223B	PM*	22 45 39.850 +45 23 24.17	325.9 93.6	11.28
3	G 216-43	PM*	23 26 39.6517908861 +45 21 13.938241339	433.726 125.266	10.93
4	HD 38B	PM*	00 05 41.0028191882 +45 48 37.353508088	845.890 -148.540	8.995
5	G 172-30	PM*	00 57 02.6919576431 +45 05 09.790903101	625.826 -68.173	11.972
6	G 173-18	PM*	01 45 18.2120123713 +46 32 07.831811524	387.643 217.279	11.536
7	G 134-1	PM*	02 06 57.1859346532 +45 11 04.181485143	280.827 -458.436	10.239
8	G 218-7	PM*	00 41 20.8281784696 +55 50 04.408356960	324.503 -73.233	11.98
9	* eta Cas B	PM*	00 49 05.1920456660 +57 49 04.170417811	1144.574 -469.382	7.51
10	Wolf 33	PM*	00 51 29.8362873978 +58 18 07.299386394	1567.038 405.481	10.64
11	* eta Cas	PM*	00 49 06.2907161 +57 48 54.675740	1086.59 -559.43	3.44
12	* tet Per	PM*	02 44 11.9870420 +49 13 42.411120	334.66 -89.99	4.11
13	* tet Per B	PM*	02 44 10.2671029181 +49 13 54.003171390	317.356 -60.899	9.87
14	Wolf 138	PM*	03 16 58.9358586986 +45 53 42.976437864	304.929 -348.518	11.908
15	HD 13403	PM*	02 12 56.0621228415 +57 12 16.185008412	267.447 -216.223	7.00
16	Wolf 56	PM*	01 08 27.1734923429 +63 30 56.368597599	1046.638 -89.587	11.19
17	Wolf 44	PM*	01 01 20.0490626127 +61 21 56.681939701	362.568 -811.628	10.87
18	BD+51 697	PM*	03 14 33.9724499524 +52 20 53.763004388	-261.205 -406.185	10.15
19	BD+65 1846	PM*	23 04 30.2085440610 +66 45 51.783766565	305.090 -79.651	9.838
20	G 264-18A	PM*	22 05 45.3646872118 +65 38 55.506773398	-315.332 212.220	11.62
21	HD 218209	PM*	23 05 06.0911806521 +68 25 01.432968207	592.421 162.893	7.48
22	HD 13783	PM*	02 16 49.2111567366 +64 57 09.391547064	-343.789 -317.556	8.31
23	G 241-1	PM*	22 16 20.2151798459 +70 56 39.814123256	862.866 -40.398	11.82
24	HD 223778B	PM*	23 52 24.9035169255 +75 32 40.023826946	331.246 141.293	11.7
25	BD+66 268	PM*	03 31 17.4003372547 +66 43 49.024023927	1191.574 -1066.350	9.91
26	BD+75 855	PM*	22 52 33.7227347477 +76 01 40.467346563	287.700 114.159	9.324
27	BD+43 4596A	PM*	23 59 29.9443332904 +44 36 07.085741343	377.700 161.644	10.07
28	HD 239960A	PM*	22 27 59.5575482946 +57 41 42.080559778	-725.227 -223.461	11.41
29	Ross 370A	PM*	03 16 13.8314329806 +58 10 02.532931809	444.416 -324.526	10.76
30	BD+66 34A	PM*	00 32 29.4817681317 +67 14 09.096130250	1757.947 -344.791	10.327
31	G 217-46A	PM*	00 23 20.514 +61 12 56.10	303.1 37.6	11.28



\*Tabela asteroidov iz prve naloge 1.4:

<u>IAU name</u>	<u>object ID</u>	<u>H</u>	<u>diameter</u> (km)	<u>rot_per</u> (h)	<u>albedo</u>
Ceres	<a href="#">a0000001</a>	3.3	939.4	9.074170	0.090
Pallas	<a href="#">a0000002</a>	4.1	545	7.8132	0.101
Juno	<a href="#">a0000003</a>	5.3	246.596	7.210	0.214
Vesta	<a href="#">a0000004</a>	3.2	525.4	5.34212766	0.4228
Hebe	<a href="#">a0000006</a>	5.7	185.18	7.2745	0.2679
Iris	<a href="#">a0000007</a>	5.5	199.83	7.139	0.2766
Metis	<a href="#">a0000009</a>	6.3	190	5.079	0.118
Victoria	<a href="#">a0000012</a>	7.2	115.087	8.6599	0.163
Egeria	<a href="#">a0000013</a>	6.7	222.792	7.045	0.070
Eunomia	<a href="#">a0000015</a>	5.3	231.689	6.083	0.248
Psyche	<a href="#">a0000016</a>	5.9	226	4.196	0.1203
Fortuna	<a href="#">a0000019</a>	7.1	200	7.4432	0.037
Massalia	<a href="#">a0000020</a>	6.5	135.680	8.098	0.241
Lutetia	<a href="#">a0000021</a>	7.3	95.76	8.1655	0.2212
Kalliope	<a href="#">a0000022</a>	6.5	167.536	4.1483	0.166
Themis	<a href="#">a0000024</a>	7.1	198	8.374	0.067
Phocaea	<a href="#">a0000025</a>	7.8	61.054	9.9341	0.350
Amphitrite	<a href="#">a0000029</a>	5.8	189.559	5.3921	0.216
Euphrosyne	<a href="#">a0000031</a>	6.7	267.080	5.530	0.053
Pomona	<a href="#">a0000032</a>	7.6	80.76	9.448	0.2564
Atalante	<a href="#">a0000036</a>	8.5	115.204	9.93	0.036
Fides	<a href="#">a0000037</a>	7.3	108.35	7.3335	0.1826
Laetitia	<a href="#">a0000039</a>	6.0	179.484	5.138	0.269
Harmonia	<a href="#">a0000040</a>	7.0	111.251	8.910	0.220

Daphne	<a href="#">a0000041</a>	7.1	205.495	5.988	0.059
Ariadne	<a href="#">a0000043</a>	7.9	71.340	5.76218	0.234
Nysa	<a href="#">a0000044</a>	7.0	70.64	6.422	0.482
Eugenia	<a href="#">a0000045</a>	7.5	202.327	5.699	0.045
Nemausa	<a href="#">a0000051</a>	7.3	138.159	7.783	0.105
Europa	<a href="#">a0000052</a>	6.3	303.918	5.6304	0.057
Kalypso	<a href="#">a0000053</a>	8.8	90.893	9.036	0.031
Alexandra	<a href="#">a0000054</a>	7.7	154.137	7.024	0.041
Pandora	<a href="#">a0000055</a>	7.7	84.794	4.8040	0.204
Concordia	<a href="#">a0000058</a>	8.9	106.517	9.895	0.044
Erato	<a href="#">a0000062</a>	8.8	106.921	9.2213	0.048
Ausonia	<a href="#">a0000063</a>	7.5	116.044	9.298	0.125
Angelina	<a href="#">a0000064</a>	7.7	58.292	8.752	0.483
Cybele	<a href="#">a0000065</a>	6.6	237.26	6.0814	0.0706
Maja	<a href="#">a0000066</a>	9.4	71.82	9.73509	0.0618
Hesperia	<a href="#">a0000069</a>	7.0	138.13	5.655	0.1402
Feronia	<a href="#">a0000072</a>	8.9	74.966	8.097	0.083
Klytia	<a href="#">a0000073</a>	9.0	44.590	8.297	0.223
Eurydike	<a href="#">a0000075</a>	9.0	62.377	5.357	0.117
Freia	<a href="#">a0000076</a>	7.9	145.423	9.973	0.058
Frigga	<a href="#">a0000077</a>	8.5	61.390	9.012	0.177
Diana	<a href="#">a0000078</a>	8.1	120.60	7.2991	0.0706
Eurynome	<a href="#">a0000079</a>	8.0	63.479	5.978	0.287
Io	<a href="#">a0000085</a>	7.6	154.79	6.875	0.0666
Sylvia	<a href="#">a0000087</a>	6.9	253.051	5.184	0.046
Thisbe	<a href="#">a0000088</a>	7.0	232	6.042	0.0671
Aegina	<a href="#">a0000091</a>	8.8	103.402	6.025	0.048

Minerva	<a href="#">a0000093</a>	7.9	154.155	5.982	0.056
Aurora	<a href="#">a0000094</a>	7.6	204.89	7.22	0.0395
Arethusa	<a href="#">a0000095</a>	8.0	147.969	8.705	0.058
Klymene	<a href="#">a0000104</a>	8.3	136.553	8.984	0.052
Camilla	<a href="#">a0000107</a>	7.1	254	4.844	0.059
Amalthea	<a href="#">a0000113</a>	8.7	50.137	9.950	0.224
Thyra	<a href="#">a0000115</a>	7.5	79.83	7.241	0.2747
Lomia	<a href="#">a0000117</a>	8.0	208.974	9.127	0.027
Peitho	<a href="#">a0000118</a>	9.1	40.211	7.8055	0.245
Hermione	<a href="#">a0000121</a>	7.3	209.00	5.55128	0.0482
Brunhild	<a href="#">a0000123</a>	8.9	45.209	9.873	0.261
Alkestes	<a href="#">a0000124</a>	8.1	88.648	9.906	0.128
Liberatrix	<a href="#">a0000125</a>	9.0	48.418	3.968	0.182
Velleda	<a href="#">a0000126</a>	9.3	44.82	5.3672	0.1723
Antigone	<a href="#">a0000129</a>	7.1	113	4.9572	0.151
Elektra	<a href="#">a0000130</a>	7.1	180.652	5.225	0.086
Vala	<a href="#">a0000131</a>	10.0	31.337	5.1812	0.246
Aethra	<a href="#">a0000132</a>	9.4	42.87	5.1684	0.1990
Hertha	<a href="#">a0000135</a>	8.2	79.24	8.403	0.1436
Polana	<a href="#">a0000142</a>	10.3	54.812	9.764	0.047
Protogeneia	<a href="#">a0000147</a>	8.7	132.93	7.8528	0.0492
Nuwa	<a href="#">a0000150</a>	8.2	119.128	8.1347	0.052
Abundantia	<a href="#">a0000151</a>	9.2	39.037	9.864	0.233
Atala	<a href="#">a0000152</a>	8.3	58.964	6.246	0.257
Hilda	<a href="#">a0000153</a>	7.5	170.63	5.9570	0.0618
Athor	<a href="#">a0000161</a>	9.2	40.992	7.280	0.230
Loreley	<a href="#">a0000165</a>	7.7	180.083	7.226	0.047

Rhodope	<a href="#">a0000166</a>	9.9	52.393	4.715	0.046
Ophelia	<a href="#">a0000171</a>	8.3	130.808	6.66535	0.076
Ino	<a href="#">a0000173</a>	7.7	125.821	6.15	0.096
Phaedra	<a href="#">a0000174</a>	8.5	64.849	5.744	0.169
Andromache	<a href="#">a0000175</a>	8.3	94.532	8.324	0.094
Dejopeja	<a href="#">a0000184</a>	8.3	62.483	6.4416	0.215
Ismene	<a href="#">a0000190</a>	7.6	159	6.52	0.066
Ambrosia	<a href="#">a0000193</a>	9.7	26.302	6.581	0.343
Philomela	<a href="#">a0000196</a>	6.5	144.626	8.3340	0.342
Arete	<a href="#">a0000197</a>	9.2	31.729	6.6084	0.373
Byblis	<a href="#">a0000199</a>	8.5	76.129	5.2201	0.107
Penelope	<a href="#">a0000201</a>	8.4	85.877	3.7474	0.040
Dido	<a href="#">a0000209</a>	8.2	179.008	5.7366	0.028
Isabella	<a href="#">a0000210</a>	9.3	86.65	6.672	0.0436
Aschera	<a href="#">a0000214</a>	9.2	24.957	6.835	1.000
Kleopatra	<a href="#">a0000216</a>	7.3	122	5.385	0.1164
Bianca	<a href="#">a0000218</a>	8.6	60.62	6.337	0.1746
Lucia	<a href="#">a0000222</a>	9.1	55.350	7.8371	0.128
Oceana	<a href="#">a0000224</a>	8.6	58.236	9.401	0.166
Henrietta	<a href="#">a0000225</a>	8.7	95.934	7.3556	0.062
Adelinda	<a href="#">a0000229</a>	9.1	105.912	6.60	0.035
Hypatia	<a href="#">a0000238</a>	8.2	155.659	8.8749	0.039
Kriemhild	<a href="#">a0000242</a>	9.3	40.802	4.5478	0.222
Ida	<a href="#">a0000243</a>	9.9	32	4.634	0.262
Bettina	<a href="#">a0000250</a>	7.6	120.995	5.0545	0.112
Aletheia	<a href="#">a0000259</a>	7.8	174.318	8.143	0.043
Huberta	<a href="#">a0000260</a>	9.0	101.539	8.29	0.044

Prymno	<a href="#">a0000261</a>	9.4	50.011	8.002	0.137
Libussa	<a href="#">a0000264</a>	8.4	62.969	9.2276	0.187
Tirza	<a href="#">a0000267</a>	10.2	55.998	7.648	0.051
Adorea	<a href="#">a0000268</a>	8.3	144.585	7.80	0.041
Antonia	<a href="#">a0000272</a>	10.6	26.870	3.8548	0.128
Adelheid	<a href="#">a0000276</a>	8.7	114.723	6.315	0.051
Paulina	<a href="#">a0000278</a>	9.4	32.773	6.497	0.247
Clorinde	<a href="#">a0000282</a>	10.9	39.03	6.42	0.0502
Emma	<a href="#">a0000283</a>	8.7	132.385	6.896	0.023
Amalia	<a href="#">a0000284</a>	10.1	52.95	8.545	0.0602
Regina	<a href="#">a0000285</a>	10.7	47.156	9.542	0.050
Nephtys	<a href="#">a0000287</a>	8.3	59.615	7.605	0.238
Nenetta	<a href="#">a0000289</a>	9.5	37.586	6.902	0.889
Ludovica	<a href="#">a0000292</a>	9.9	30.864	8.93	0.187
Brasilia	<a href="#">a0000293</a>	9.9	57.486	8.17	0.056
Caecilia	<a href="#">a0000297</a>	9.1	39.48	4.163	0.1796
Geraldina	<a href="#">a0000300</a>	9.8	67.373	6.8423	0.052
Unitas	<a href="#">a0000306</a>	9.0	47.200	8.736	0.201
Claudia	<a href="#">a0000311</a>	10.0	26.300	7.532	0.322
Chaldaea	<a href="#">a0000313</a>	8.9	77.853	8.392	0.039
Goberta	<a href="#">a0000316</a>	10.1	56.067	8.605	0.061
Roxane	<a href="#">a0000317</a>	10.0	18.648	8.169	0.926
Katharina	<a href="#">a0000320</a>	10.8	23.362	6.893	0.155
Florentina	<a href="#">a0000321</a>	10.1	27.974	2.871	0.425
Brucia	<a href="#">a0000323</a>	9.7	27.714	9.463	0.295
Heidelberga	<a href="#">a0000325</a>	8.7	75.72	6.737	0.1068
Columbia	<a href="#">a0000327</a>	9.9	30.291	5.9320	0.214

Siri	<a href="#">a0000332</a>	9.7	40.37	8.0074	0.1719
Badenia	<a href="#">a0000333</a>	9.5	72.199	9.862	0.047
Chicago	<a href="#">a0000334</a>	7.7	198.770	7.361	0.041
Devosa	<a href="#">a0000337</a>	8.7	64.549	4.653	0.135
Budrosa	<a href="#">a0000338</a>	8.5	50.506	4.6084	0.276
Dorothea	<a href="#">a0000339</a>	9.2	44.329	5.974	0.198
Eduarda	<a href="#">a0000340</a>	9.9	28.025	8.0062	0.247
Endymion	<a href="#">a0000342</a>	10.2	60.903	6.319	0.038
Pariana	<a href="#">a0000347</a>	9.0	48.615	4.0529	0.190
May	<a href="#">a0000348</a>	9.4	82.82	7.3812	0.0448
Dembowska	<a href="#">a0000349</a>	5.9	139.77	4.701	0.3840
Ornamenta	<a href="#">a0000350</a>	8.4	128.729	9.178	0.048
Gisela	<a href="#">a0000352</a>	10.0	26.744	7.490	0.195
Ruperto-Carola	<a href="#">a0000353</a>	10.9	14.025	2.73898	0.392
Eleonora	<a href="#">a0000354</a>	6.4	148.970	4.277	0.201
Gabriella	<a href="#">a0000355</a>	10.1	24.040	4.830	0.341
Georgia	<a href="#">a0000359</a>	8.9	43.89	5.537	0.2621
Carlova	<a href="#">a0000360</a>	8.5	129.125	6.183	0.043
Padua	<a href="#">a0000363</a>	9.0	97	8.401	0.059
Isara	<a href="#">a0000364</a>	9.9	25.901	9.156	0.300
Amicitia	<a href="#">a0000367</a>	10.7	21.243	5.05538	0.393
Haidea	<a href="#">a0000368</a>	9.9	69.277	9.823	0.038
Aeria	<a href="#">a0000369</a>	8.5	73.767	4.778	0.127
Palma	<a href="#">a0000372</a>	7.5	173.642	8.567	0.059
Burgundia	<a href="#">a0000374</a>	8.7	44.67	6.972	0.3014
Geometria	<a href="#">a0000376</a>	9.5	35.465	7.74	0.321
Holmia	<a href="#">a0000378</a>	9.8	27.831	4.450	0.339

Myrrha	<a href="#">a0000381</a>	8.2	127.639	6.572	0.064
Dodona	<a href="#">a0000382</a>	8.8	65.209	4.113	0.129
Janina	<a href="#">a0000383</a>	9.9	43.482	6.4	0.101
Siegena	<a href="#">a0000386</a>	7.4	165.01	9.763	0.0692
Charybdis	<a href="#">a0000388</a>	8.6	125.754	9.516	0.042
Industria	<a href="#">a0000389</a>	7.9	74.378	8.53	0.225
Alma	<a href="#">a0000390</a>	10.4	25.688	3.74	0.268
Persephone	<a href="#">a0000399</a>	9.0	39.566	9.136	0.311
Ducrosa	<a href="#">a0000400</a>	10.5	36.001	6.87	0.112
Ottilia	<a href="#">a0000401</a>	9.2	87.803	6.049	0.052
Arsinoe	<a href="#">a0000404</a>	9.0	94.970	8.887	0.037
Erna	<a href="#">a0000406</a>	10.4	46.266	8.789	0.060
Aspasia	<a href="#">a0000409</a>	7.6	171.012	9.022	0.054
Liriope	<a href="#">a0000414</a>	9.5	88.760	7.353	0.027
Vaticana	<a href="#">a0000416</a>	7.9	85.47	5.372	0.1689
Suevia	<a href="#">a0000417</a>	9.3	54.874	7.034	0.072
Alemannia	<a href="#">a0000418</a>	9.8	40.330	4.671	0.201
Diotima	<a href="#">a0000423</a>	7.2	175.859	4.775	0.067
Galene	<a href="#">a0000427</a>	10.1	32.193	3.705	0.205
Pythia	<a href="#">a0000432</a>	8.8	46.90	8.252	0.2338
Ella	<a href="#">a0000435</a>	10.2	34.792	4.623	0.118
Zeuxo	<a href="#">a0000438</a>	9.8	58.871	8.831	0.061
Gyptis	<a href="#">a0000444</a>	7.8	159.331	6.214	0.051
Valentine	<a href="#">a0000447</a>	9.0	85.224	9.651	0.061
Natalie	<a href="#">a0000448</a>	10.3	50.534	8.0646	0.052
Patientia	<a href="#">a0000451</a>	6.7	253.900	9.727	0.085
Tea	<a href="#">a0000453</a>	10.5	23.985	6.812	0.137

Mathesis	<a href="#">a0000454</a>	9.2	81.743	8.378	0.055
Signe	<a href="#">a0000459</a>	10.4	25.784	5.5362	0.221
Saskia	<a href="#">a0000461</a>	10.5	43.603	7.348	0.057
Eriphyla	<a href="#">a0000462</a>	9.2	34.274	8.659	0.259
Tisiphone	<a href="#">a0000466</a>	8.5	95.495	8.834	0.092
Papagena	<a href="#">a0000471</a>	6.7	148.128	7.113	0.164
Roma	<a href="#">a0000472</a>	8.9	50.278	9.8007	0.189
Prudentia	<a href="#">a0000474</a>	10.9	39.356	8.572	0.062
Caprera	<a href="#">a0000479</a>	9.8	60.088	9.43	0.071
Comacina	<a href="#">a0000489</a>	8.3	139.39	9.02	0.0427
Veritas	<a href="#">a0000490</a>	8.3	118.803	7.930	0.059
Gismonda	<a href="#">a0000492</a>	10.0	53.418	6.488	0.069
Virtus	<a href="#">a0000494</a>	9.0	100.786	5.57	0.065
Iva	<a href="#">a0000497</a>	10.0	40.932	4.620	0.119
Selinur	<a href="#">a0000500</a>	9.3	40.828	8.0111	0.202
Cora	<a href="#">a0000504</a>	10.0	30.438	7.588	0.239
Cava	<a href="#">a0000505</a>	8.6	115	8.1789	0.040
Laodica	<a href="#">a0000507</a>	9.2	45.170	4.706	0.198
Davida	<a href="#">a0000511</a>	6.2	270.327	5.1297	0.076
Taurinensis	<a href="#">a0000512</a>	10.7	23.09	5.585	0.1772
Centesima	<a href="#">a0000513</a>	9.8	48.805	5.23	0.089
Amherstia	<a href="#">a0000516</a>	8.3	65.144	7.4842	0.202
Edith	<a href="#">a0000517</a>	9.3	111.890	9.2747	0.026
Helga	<a href="#">a0000522</a>	9.0	101.22	8.129	0.0388
Jena	<a href="#">a0000526</a>	10.2	44.840	9.474	0.077
Rezia	<a href="#">a0000528</a>	9.1	91.966	7.337	0.046
Herculina	<a href="#">a0000532</a>	5.8	167.791	9.405	0.285



Nassovia	<a href="#">a0000534</a>	9.8	32.333	9.382	0.213
Merapi	<a href="#">a0000536</a>	8.2	147.066	8.78	0.048
Rosamunde	<a href="#">a0000540</a>	10.8	19.152	9.351	0.331
Jetta	<a href="#">a0000544</a>	10.0	27.169	7.745	0.262
Messalina	<a href="#">a0000545</a>	8.8	112.631	7.2	0.041
Praxedis	<a href="#">a0000547</a>	9.5	52.462	9.105	0.101
Phyllis	<a href="#">a0000556</a>	9.6	36.279	4.293	0.201
Salome	<a href="#">a0000562</a>	9.9	32.651	6.351	0.158
Suleika	<a href="#">a0000563</a>	8.5	53.29	5.69	0.2477
Dudu	<a href="#">a0000564</a>	10.4	52.010	8.882	0.050
Marbachia	<a href="#">a0000565</a>	10.9	27.332	4.587	0.105
Eleutheria	<a href="#">a0000567</a>	9.2	93.41	7.717	0.0439
Kythera	<a href="#">a0000570</a>	8.8	87.486	8.120	0.069
Rebekka	<a href="#">a0000572</a>	10.9	28.903	5.6497	0.089
Recha	<a href="#">a0000573</a>	9.4	47.582	7.16633	0.100
Renate	<a href="#">a0000575</a>	10.8	19.106	3.676	0.211
Selene	<a href="#">a0000580</a>	10.2	48.204	9.47	0.082
Klotilde	<a href="#">a0000583</a>	9.0	78.236	9.2135	0.072
Semiramis	<a href="#">a0000584</a>	8.7	54.01	5.068	0.1987
Bilkis	<a href="#">a0000585</a>	10.4	49.761	8.577	0.049
Achilles	<a href="#">a0000588</a>	8.7	130.099	7.306	0.043
Tomyris	<a href="#">a0000590</a>	9.9	30.577	5.562	0.187
Irmgard	<a href="#">a0000591</a>	10.6	51.86	7.35	0.0364
Bathseba	<a href="#">a0000592</a>	9.5	43.787	7.7465	0.155
Titania	<a href="#">a0000593</a>	9.3	70.145	9.8968	0.070
Bandusia	<a href="#">a0000597</a>	9.2	36.06	7.6636	0.2361
Luisa	<a href="#">a0000599</a>	8.7	70.249	9.566	0.115

Musa	<a href="#">a0000600</a>	10.2	25.115	5.8856	0.227
Tekmessa	<a href="#">a0000604</a>	9.5	64.536	5.5596	0.090
Jenny	<a href="#">a0000607</a>	10.0	67.520	8.521	0.039
Adolfine	<a href="#">a0000608</a>	10.9	20.365	8.3458	0.245
Valeria	<a href="#">a0000611</a>	9.2	57.468	6.977	0.124
Veronika	<a href="#">a0000612</a>	10.8	38.767	8.243	0.062
Pia	<a href="#">a0000614</a>	11.0	29.191	4.572	0.094
Roswitha	<a href="#">a0000615</a>	10.3	48.626	4.422	0.082
Elly	<a href="#">a0000616</a>	10.7	21.170	5.297	0.211
Hektor	<a href="#">a0000624</a>	7.2	225	6.924	0.025
Bernardina	<a href="#">a0000629</a>	10.0	35.087	3.763	0.140
Philippina	<a href="#">a0000631</a>	8.7	50.491	5.899	0.229
Moirra	<a href="#">a0000638</a>	10.0	59.594	9.875	0.060
Latona	<a href="#">a0000639</a>	8.2	78.509	6.193	0.123
Brambilla	<a href="#">a0000640</a>	9.2	62.667	7.768	0.055
Clara	<a href="#">a0000642</a>	10.0	33.36	8.2308	0.1617
Pippa	<a href="#">a0000648</a>	9.7	68.27	9.263	0.0509
Jubilatrix	<a href="#">a0000652</a>	11.0	15.595	2.6627	0.200
Beagle	<a href="#">a0000656</a>	10.1	62.604	7.035	0.045
Crescentia	<a href="#">a0000660</a>	9.1	42.302	7.9116	0.332
Cloelia	<a href="#">a0000661</a>	9.6	40.081	5.536	0.182
Sabine	<a href="#">a0000665</a>	8.6	51.09	4.294	0.3895
Carnegia	<a href="#">a0000671</a>	10.2	60.604	8.332	0.028
Ludmilla	<a href="#">a0000675</a>	7.9	76	7.717	
Pax	<a href="#">a0000679</a>	9.0	63.909	8.452	0.110
Gorgo	<a href="#">a0000681</a>	10.7	20.390	6.4606	0.240
Lanzia	<a href="#">a0000683</a>	8.7	83.04	8.630	0.053

Gersuind	<a href="#">a0000686</a>	9.7	55.258	6.3127	0.078
Wratislavia	<a href="#">a0000690</a>	8.0	134.65	8.64	0.0604
Hippodamia	<a href="#">a0000692</a>	9.2	42.771	8.98	0.205
Ekard	<a href="#">a0000694</a>	9.2	121.891	5.925	0.026
Ernestina	<a href="#">a0000698</a>	10.9	27.037	5.0363	0.095
Oriola	<a href="#">a0000701</a>	9.2	42.943	9.090	0.191
Alauda	<a href="#">a0000702</a>	7.2	190.980	8.3531	0.061
Interamnia	<a href="#">a0000704</a>	5.9	306.313	8.727	0.078
Luscinia	<a href="#">a0000713</a>	9.0	97.968	9.9143	0.048
Ulula	<a href="#">a0000714</a>	9.1	41.343	6.998	0.260
Bohlinia	<a href="#">a0000720</a>	9.6	33.73	8.919	0.2029
Tabora	<a href="#">a0000721</a>	9.3	74.791	7.982	0.048
Hammonia	<a href="#">a0000723</a>	9.9	23.456	5.436	0.352
Nipponia	<a href="#">a0000727</a>	9.6	32.17	5.0687	0.2423
Sorga	<a href="#">a0000731</a>	9.6	34.597	8.184	0.209
Benda	<a href="#">a0000734</a>	9.9	67.318	7.110	0.051
Arequipa	<a href="#">a0000737</a>	8.8	47.804	7.0259	0.231
Mauritia	<a href="#">a0000745</a>	10.5	24.711	9.945	0.200
Marlu	<a href="#">a0000746</a>	10.0	74.274	7.787	0.032
Winchester	<a href="#">a0000747</a>	7.7	171.71	9.4146	0.0503
Tiflis	<a href="#">a0000753</a>	10.2	20.922	9.85	0.333
Quintilla	<a href="#">a0000755</a>	9.8	41.210	4.552	0.124
Lilliana	<a href="#">a0000756</a>	9.9	64.837	7.834	0.057
Portlandia	<a href="#">a0000757</a>	10.2	32.894	6.5837	0.217
Pulcova	<a href="#">a0000762</a>	8.3	147.343	5.839	0.040
Moguntia	<a href="#">a0000766</a>	10.2	41.044	4.8164	0.223
Struveana	<a href="#">a0000768</a>	10.2	32.597	8.76	0.137

Bali	<a href="#">a0000770</a>	10.9	16.388	5.8190	0.272
Libera	<a href="#">a0000771</a>	10.5	29.322	5.892	0.123
Irmित्राउद	<a href="#">a0000773</a>	9.1	91.672	6.7514	0.048
Lumiere	<a href="#">a0000775</a>	10.3	31.958	6.103	0.111
Berbericia	<a href="#">a0000776</a>	7.7	151.711	7.668	0.065
Zwetana	<a href="#">a0000785</a>	9.4	49.460	8.8882	0.120
Moskva	<a href="#">a0000787</a>	9.7	27.927	6.056	0.190
Metcalfia	<a href="#">a0000792</a>	10.3	61.804	9.17	0.024
Arizona	<a href="#">a0000793</a>	10.3	26.636	7.399	0.196
Fini	<a href="#">a0000795</a>	10.0	85.263	9.292	0.027
Sarita	<a href="#">a0000796</a>	9.1	43.580	8.1755	0.209
Montana	<a href="#">a0000797</a>	10.3	21.197	4.5463	0.287
Ruth	<a href="#">a0000798</a>	9.6	43.19	8.550	0.1587
Picka	<a href="#">a0000803</a>	9.4	46.50	5.0742	0.1181
Hormuthia	<a href="#">a0000805</a>	9.8	73.095	9.510	0.039
Ceraskia	<a href="#">a0000807</a>	10.6	21.241	7.368	0.207
Nauheima	<a href="#">a0000811</a>	10.7	16.105	4.0011	0.357
Coppelia	<a href="#">a0000815</a>	10.8	16.869	4.421	0.644
Academia	<a href="#">a0000829</a>	11.0	42.685	7.891	0.054
Zenobia	<a href="#">a0000840</a>	10.1	27.306	5.565	0.232
Leontina	<a href="#">a0000844</a>	9.6	42.154	6.7859	0.173
Ara	<a href="#">a0000849</a>	8.1	80.756	4.116	0.186
Wladilena	<a href="#">a0000852</a>	10.0	26.541	4.6134	0.225
Ursina	<a href="#">a0000860</a>	10.3	34.561	9.386	0.116
Franzia	<a href="#">a0000862</a>	9.8	27.033	7.52	0.291
Benkoela	<a href="#">a0000863</a>	9.0	38.724	8.20	0.290
Holda	<a href="#">a0000872</a>	9.9	34.431	5.945	0.165

Priamus	<a href="#">a0000884</a>	8.8	101.093	6.8605	0.044
Ulrike	<a href="#">a0000885</a>	10.7	30.537	4.90	0.109
Washingtonia	<a href="#">a0000886</a>	9.3	86.793	9.001	0.078
Parysatis	<a href="#">a0000888</a>	9.5	44.749	5.9314	0.139
Erynia	<a href="#">a0000889</a>	10.9	16.682	9.89	0.230
Erda	<a href="#">a0000894</a>	9.6	28.309	4.6897	0.120
Helio	<a href="#">a0000895</a>	8.4	109.568	9.347	0.071
Jokaste	<a href="#">a0000899</a>	10.1	31.018	6.245	0.161
Rockefellia	<a href="#">a0000904</a>	10.4	49.146	6.826	0.055
Ulla	<a href="#">a0000909</a>	8.9	116.44	8.73	0.0343
Agamemnon	<a href="#">a0000911</a>	7.9	131.038	6.592	0.072
Itha	<a href="#">a0000918</a>	10.6	21.561	3.47393	0.224
Alphonsina	<a href="#">a0000925</a>	8.3	57.505	7.880	0.248
Thuringia	<a href="#">a0000934</a>	10.0	53.714	8.166	0.047
Kunigunde	<a href="#">a0000936</a>	10.4	43.227	9.3650	0.065
Romilda	<a href="#">a0000942</a>	11.0	36.772	6.965	0.056
Barcelona	<a href="#">a0000945</a>	10.1	25.618	7.36	0.239
Monterosa	<a href="#">a0000947</a>	9.9	26.060	5.164	0.340
Hel	<a href="#">a0000949</a>	9.8	63.494	8.215	0.058
Caia	<a href="#">a0000952</a>	9.3	88.692	7.51	0.047
Painleva	<a href="#">a0000953</a>	10.1	24.062	7.389	0.177
Li	<a href="#">a0000954</a>	9.9	58.771	7.207	0.060
Alstede	<a href="#">a0000955</a>	10.8	17.33	5.19	0.2135
Subamara	<a href="#">a0000964</a>	10.7	19.835	6.868	0.236
Muschi	<a href="#">a0000966</a>	9.9	25.509	5.355	0.323
Alsatia	<a href="#">a0000971</a>	10.1	60.867	9.614	0.046
Aralia	<a href="#">a0000973</a>	10.1	51.609	7.3662	0.098

Perseverantia	<a href="#">a0000975</a>	10.4	22.169	7.267	0.246
Benamina	<a href="#">a0000976</a>	9.2	83.195	9.701	0.052
Gunila	<a href="#">a0000983</a>	9.6	73.87	8.37	0.0477
Gretia	<a href="#">a0000984</a>	9.0	32.449	5.778	0.421
Amelia	<a href="#">a0000986</a>	9.4	48.677	9.52	0.218
Otthild	<a href="#">a0000994</a>	10.3	20.786	5.95	0.310
Piazzia	<a href="#">a0001000</a>	10.5	47.78	9.47	0.1119
Lilofee	<a href="#">a0001003</a>	10.7	33.678	8.255	0.130
Belopolskya	<a href="#">a0001004</a>	10.0	71.60	9.44	0.0348
Arago	<a href="#">a0001005</a>	9.9	61.132	8.784	0.070
La Paz	<a href="#">a0001008</a>	10.6	41.061	8.998	0.099
Tombecka	<a href="#">a0001013</a>	10.1	34.613	6.053	0.132
Jacqueline	<a href="#">a0001017</a>	11.0	40.152	7.87	0.052
Olympiada	<a href="#">a0001022</a>	10.2	34.297	3.822	0.125
Vitja	<a href="#">a0001030</a>	10.3	59.717	5.7014	0.031
Amata	<a href="#">a0001035</a>	10.2	56.063	9.081	0.038
Asta	<a href="#">a0001041</a>	10.1	60.571	7.554	0.047
Teutonia	<a href="#">a0001044</a>	10.8	17.511	3.153	0.251
Edwin	<a href="#">a0001046</a>	10.6	29.084	5.2906	0.201
Gotho	<a href="#">a0001049</a>	10.4	56.296	8.470	0.008
Forsytia	<a href="#">a0001054</a>	10.4	47.780	7.650	0.035
Mussorgskia	<a href="#">a0001059</a>	10.9	25.227	5.636	0.174
Aethusa	<a href="#">a0001064</a>	10.6	20.007	8.621	0.278
Lunaria	<a href="#">a0001067</a>	11.0	20.011	6.057	0.185
Nofretete	<a href="#">a0001068</a>	10.7	21.346	6.15	0.142
Planckia	<a href="#">a0001069</a>	9.4	35.657	8.665	0.219
Brita	<a href="#">a0001071</a>	10.4	60.862	5.8169	0.036

Beljawska	<a href="#">a0001074</a>	10.2	49.189	6.284	0.073
Reseda	<a href="#">a0001081</a>	11.0	37.810	7.3002	0.043
Tamariwa	<a href="#">a0001084</a>	10.8	26.476	6.1961	0.132
Arabis	<a href="#">a0001087</a>	9.7	37.498	5.794	0.098
Spiraea	<a href="#">a0001091</a>	10.8	35.178	7.01	0.091
Tulipa	<a href="#">a0001095</a>	10.4	27.875	2.78721	0.146
Hakone	<a href="#">a0001098</a>	10.5	26.684	7.142	0.206
Pepita	<a href="#">a0001102</a>	9.4	36.632	5.1054	0.229
Fragaria	<a href="#">a0001105</a>	10.1	31.518	5.4312	0.128
Lictoria	<a href="#">a0001107</a>	9.5	79.079	8.5616	0.066
Tata	<a href="#">a0001109</a>	10.1	61.817	8.277	0.044
Reinmuthia	<a href="#">a0001111</a>	10.7		4.02	
Sabauda	<a href="#">a0001115</a>	9.7	75.907	6.718	0.044
Catriona	<a href="#">a0001116</a>	9.8	38.741	8.832	0.155
Neujmina	<a href="#">a0001129</a>	10.2	34.576	5.0844	0.138
Crimea	<a href="#">a0001140</a>	10.3	29.179	9.77	0.160
Biarmia	<a href="#">a0001146</a>	9.8	32.925	5.4700	0.196
Rarahu	<a href="#">a0001148</a>	10.2	27.512	6.5447	0.064
Luda	<a href="#">a0001158</a>	10.8	18.636	6.863	0.221
Larissa	<a href="#">a0001162</a>	9.4	42.243	6.516	0.169
Saga	<a href="#">a0001163</a>	10.6	32.429	9.365	0.147
Imprinetta	<a href="#">a0001165</a>	10.7	53.187	8.107	0.048
Sakuntala	<a href="#">a0001166</a>	10.3	26.011	6.29	0.286
Aneas	<a href="#">a0001172</a>	8.3	118.020	8.705	0.059
Margo	<a href="#">a0001175</a>	10.0	24.266	6.0136	0.249
Alfaterna	<a href="#">a0001191</a>	10.8	47.397	3.664	0.045
Sheba	<a href="#">a0001196</a>	10.3	25.274	6.319	0.218

Marina	<a href="#">a0001202</a>	10.0	54.93	9.45	0.0337
Ostenia	<a href="#">a0001207</a>	10.8	21.925	9.073	0.176
Pumma	<a href="#">a0001209</a>	10.6	26.889	8.5001	0.141
Neckar	<a href="#">a0001223</a>	10.6	22.783	7.81	0.170
Elyna	<a href="#">a0001234</a>	10.7	22.876	5.4221	0.162
Dysona	<a href="#">a0001241</a>	9.4	79.190	8.6080	0.047
Calvinia	<a href="#">a0001245</a>	9.9	29.751	4.8523	0.221
Varsavia	<a href="#">a0001263</a>	10.2	49.29	7.1639	0.0459
Tone	<a href="#">a0001266</a>	9.4	75.470	7.40	0.053
Isergina	<a href="#">a0001271</a>	10.3	47.524	7.59932	0.031
Cimbria	<a href="#">a0001275</a>	10.7	27.622	5.65	0.141
Ucclia	<a href="#">a0001276</a>	10.9	36.499	4.90768	0.075
Latvia	<a href="#">a0001284</a>	10.2	41.128	9.55	0.069
Banachiewiczza	<a href="#">a0001286</a>	10.9	21.474	8.63	0.170
Kutaisi	<a href="#">a0001289</a>	10.7	21.531	3.60	0.245
Phryne	<a href="#">a0001291</a>	10.4	27.418	5.58410	0.127
Antwerpia	<a href="#">a0001294</a>	10.7	37.199	6.63	0.117
Quadea	<a href="#">a0001297</a>	10.9	22.420	6.267	0.200
Luthera	<a href="#">a0001303</a>	9.5	81.685	5.878	0.024
Arosa	<a href="#">a0001304</a>	9.2	43.613	7.7478	0.337
Pongola	<a href="#">a0001305</a>	10.7	24.110	8.335	0.169
Scythia	<a href="#">a0001306</a>	9.7	66.780	7.525	0.035
Halleria	<a href="#">a0001308</a>	10.9	46.951	6.028	0.038
Vassar	<a href="#">a0001312</a>	10.7	36.28	7.932	0.0643
Bronislawa	<a href="#">a0001315</a>	10.0	64.863	9.565	0.040
Silvretta	<a href="#">a0001317</a>	9.9	17.919	7.048	0.275
Disa	<a href="#">a0001319</a>	10.6	25.651	7.080	0.097



Impala	<a href="#">a0001320</a>	10.9	37.331	6.1713	0.078
Majuba	<a href="#">a0001321</a>	10.3	37.137	5.207	0.083
Losaka	<a href="#">a0001326</a>	10.9	26.336	6.900	0.089
Spiridonia	<a href="#">a0001330</a>	10.0	68.417	9.67	0.032
Lundmarka	<a href="#">a0001334</a>	10.4	27.621	6.250	0.242
Desagneauxa	<a href="#">a0001339</a>	10.8	24.450	9.380	0.144
Michel	<a href="#">a0001348</a>	11.0	16.290	8.095	0.265
Rosselia	<a href="#">a0001350</a>	10.8	20.822	8.140	0.199
Botha	<a href="#">a0001354</a>	11.0	41.732	4.	0.014
Safara	<a href="#">a0001364</a>	10.7	21.197	7.25	0.087
Numidia	<a href="#">a0001368</a>	10.9	19.591	3.64	0.298
Ostanina	<a href="#">a0001369</a>	10.7	42.401	8.4001	0.052
Donnera	<a href="#">a0001398</a>	10.1	24.553	7.2311	0.267
Brauna	<a href="#">a0001411</a>	11.0	28.272	4.90	0.096
Renauxa	<a href="#">a0001416</a>	10.7	27.552	8.700	0.212
Walinskia	<a href="#">a0001417</a>	11.0	16.874	2.93	0.281
Riviera	<a href="#">a0001426</a>	10.9	17.613	4.4044	0.414
Margot	<a href="#">a0001434</a>	10.4	27.178	8.17	0.130
Salonta	<a href="#">a0001436</a>	10.3	53.769	8.870	0.028
Ruppina	<a href="#">a0001443</a>	11.0	16.467	5.880	0.218
Magnya	<a href="#">a0001459</a>	10.3	29.188	4.678	0.909
Nordenmarkia	<a href="#">a0001463</a>	10.6	36.547	5.918	0.031
Armisticia	<a href="#">a0001464</a>	11.0	23.313	7.50	0.126
Mashona	<a href="#">a0001467</a>	8.6	89.160	9.76	0.083
Tornio	<a href="#">a0001471</a>	11.0	28.719	6.60	0.085
Kuopio	<a href="#">a0001503</a>	10.5	22.985	9.957	0.399
Joensuu	<a href="#">a0001524</a>	10.7	45.056	9.276	0.064

Saimaa	<a href="#">a0001533</a>	10.8	24.298	7.08	0.141
Schalen	<a href="#">a0001542</a>	10.6	42.374	7.516	0.068
Izsak	<a href="#">a0001546</a>	10.7	26.438	7.350	0.133
Nele	<a href="#">a0001547</a>	10.8	20.877	7.100	0.203
Wingolfia	<a href="#">a0001556</a>	10.6	28.65	10.	0.1297
Srbija	<a href="#">a0001564</a>	10.9	41.681	9.135	0.045
Posnania	<a href="#">a0001572</a>	10.1	31.500	8.048	0.521
Union	<a href="#">a0001585</a>	10.7	55.271	9.38	0.031
Neva	<a href="#">a0001603</a>	10.9	39.564	6.4249	0.050
Tombaugh	<a href="#">a0001604</a>	10.5	32.33	7.24	0.1038
Goldschmidt	<a href="#">a0001614</a>	10.7	48.007	8.873	0.036
Alschmitt	<a href="#">a0001617</a>	10.9	21.283	7.062	0.270
Strobel	<a href="#">a0001628</a>	10.0	59.345	9.52	0.047
Chimay	<a href="#">a0001633</a>	10.6	37.428	6.5911	0.080
Bohrmann	<a href="#">a0001635</a>	11.0	17.127	5.864	0.219
Tana	<a href="#">a0001641</a>	10.4	25.66	7.95	0.0739
Hill	<a href="#">a0001642</a>	10.7	16.240	6.056	0.351
Waterfield	<a href="#">a0001645</a>	11.0	28.146	4.861	0.067
Punkaharju	<a href="#">a0001659</a>	9.9	28.010	5.01	0.271
Hveen	<a href="#">a0001678</a>	10.9	42.665	5.987	0.035
Iguassu	<a href="#">a0001684</a>	11.0	30.210	6.4156	0.093
Glarona	<a href="#">a0001687</a>	10.2	37.850	6.498	0.141
Hertzprung	<a href="#">a0001693</a>	11.0	37.772	8.825	0.051
Klemola	<a href="#">a0001723</a>	10.1	33.449	6.2545	0.156
Heike	<a href="#">a0001732</a>	10.9	22.378	4.742	0.128
Mauderli	<a href="#">a0001748</a>	10.7	44.908	5.313	0.048
Mieke	<a href="#">a0001753</a>	11.0	19.445	8.8	0.144

Cunningham	<a href="#">a0001754</a>	9.8	79.52	7.7416	0.0345
Sandra	<a href="#">a0001760</a>	11.0	34.765	6.5668	0.054
Wrubel	<a href="#">a0001765</a>	9.9	38.299	5.260	0.130
Laputa	<a href="#">a0001819</a>	10.4	54.165	9.8004	0.050
Masaryk	<a href="#">a0001841</a>	10.8	40.240	7.53	0.052
Delvaux	<a href="#">a0001848</a>	11.0	17.030	3.637	0.242
McElroy	<a href="#">a0001853</a>	10.8	23.807	8.016	0.197
Glaukos	<a href="#">a0001870</a>	10.6	47.649	5.986	0.049
Ortutay	<a href="#">a0002043</a>	10.8	48.460	7.7475	0.040
Tamriko	<a href="#">a0002052</a>	10.5	26.799	7.462	0.158
Chiron	<a href="#">a0002060</a>	5.8	166	5.918	0.15
Mizuho	<a href="#">a0002090</a>	11.0	17.991	5.47	0.219
Laverna	<a href="#">a0002103</a>	10.9	23.116	9.249	0.158
Toronto	<a href="#">a0002104</a>	9.8	35.874	8.97	0.104
Tselina	<a href="#">a0002111</a>	10.4	22.773	6.563	0.226
Tyumenia	<a href="#">a0002120</a>	11.0	51.485	2.769	0.068
Hadwiger	<a href="#">a0002151</a>	10.9	13.767	5.872	0.446