



EPHEMERIDES

4 20.0

4 20.0

Table with multiple columns (2020, alpha\_2000, delta\_2000, Delta, r, beta, V) and rows for various astronomical objects like 435398, 190230, 182825, 70729, 384586, 490279, 225581, 41480, 255606, 519013, 326435, 462337, 125978, 381457, 261179, 76986, 17793, 16425.



EPHEMERIDES

2020	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	2020	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$		
<b>86763</b>	2000 GH <sub>78</sub>			4 20.0 297 <sup>°</sup> 52	0 <sup>°</sup> 2/19.9 18			<b>274172</b>	2008 GZ <sub>47</sub>			4 20.0 284 <sup>°</sup> 85	2 <sup>°</sup> 6/17.8 18		
3 12	14 21.62	-10 42.1	1.683	2.485	16.5	20.0	3 12	14 15.15	-9 0.5	1.763	2.579	15.3	20.5		
<b>265761</b>	2005 VO <sub>125</sub>			4 20.0 348 <sup>°</sup> 64	12 <sup>°</sup> 2/12.3 17			<b>123334</b>	2000 VY <sub>42</sub>			4 20.0 198 <sup>°</sup> 49	0 <sup>°</sup> 9/20.9 18		
3 12	14 16.19	+12 59.1	1.270	2.113	18.5	19.4	3 12	14 17.81	-16 25.8	2.180	2.957	14.0	20.4		
<b>497222</b>	2004 XA <sub>143</sub>			4 20.0 180 <sup>°</sup> 86	2 <sup>°</sup> 1/22.0 17			<b>33188</b>	Shreya			4 20.0 66 <sup>°</sup> 91	1 <sup>°</sup> 9/21.7 18		
3 12	14 18.46	-19 44.1	2.378	3.136	13.5	22.4	3 12	14 17.47	-18 15.2	2.152	2.924	14.3	19.1		
<b>501051</b>	2013 RU <sub>96</sub>			4 20.0 239 <sup>°</sup> 65	0 <sup>°</sup> 3/19.8 17			<b>58566</b>	1997 PN <sub>3</sub>			4 20.0 235 <sup>°</sup> 21	0 <sup>°</sup> 1/20.1 18		
3 12	14 16.85	-14 50.0	2.105	2.891	14.1	22.5	3 12	14 16.71	-13 33.2	2.213	3.001	13.5	19.6		
<b>248967</b>	2007 AF			4 20.0 279 <sup>°</sup> 83	6 <sup>°</sup> 1/26.4 18			<b>334809</b>	2003 SM <sub>297</sub>			4 20.0 258 <sup>°</sup> 14	2 <sup>°</sup> 7/22.6 18		
3 12	14 16.86	-31 59.9	2.488	3.185	14.5	20.6	3 12	14 15.93	-22 2.4	2.085	2.847	15.0	20.4		
<b>55132</b>	2001 QB <sub>182</sub>			4 20.0 267 <sup>°</sup> 14	3 <sup>°</sup> 0/16.8 18			<b>325089</b>	2008 DS <sub>43</sub>			4 20.0 351 <sup>°</sup> 06	1 <sup>°</sup> 1/20.8 17		
3 12	14 13.47	-6 9.9	2.239	3.049	12.6	18.4	3 12	14 19.01	-14 37.1	1.535	2.340	17.7	21.0		
<b>25383</b>	Lindacker			4 20.0 91 <sup>°</sup> 75	0 <sup>°</sup> 5/20.4 18			<b>250333</b>	2003 SM <sub>105</sub>			4 20.0 321 <sup>°</sup> 84	1 <sup>°</sup> 8/21.1 17		
3 12	14 21.17	-14 23.1	1.643	2.439	17.1	19.4	3 12	14 18.78	-15 50.1	1.414	2.222	18.8	20.7		
<b>105340</b>	2000 QC <sub>93</sub>			4 20.0 246 <sup>°</sup> 80	3 <sup>°</sup> 0/16.3 18			<b>11856</b>	Nicolabonev			4 20.0 192 <sup>°</sup> 54	1 <sup>°</sup> 0/20.9 18		
3 12	14 13.58	-5 5.5	2.693	3.496	10.9	20.4	3 12	14 21.86	-16 3.4	2.169	2.939	14.3	20.1		
<b>67998</b>	2000 XQ <sub>31</sub>			4 20.0 199 <sup>°</sup> 69	0 <sup>°</sup> 4/20.3 16			<b>263144</b>	2007 VZ <sub>201</sub>			4 20.0 34 <sup>°</sup> 59	1 <sup>°</sup> 5/18.9 18		
3 12	14 22.62	-13 26.8	1.841	2.629	15.8	20.1	3 12	14 15.30	-12 37.1	1.433	2.254	17.9	20.5		

































Table with columns for year (2020), alpha\_2000, delta\_2000, Delta, r, beta, V, and a corresponding table for year (2020), alpha\_2000, delta\_2000, Delta, r, beta, V. Rows include star names and magnitudes like 207588, 302224, 10715, etc.











EPHEMERIDES

4 20.4

4 20.4

2020	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	2020	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$
<b>94445</b>	2001 <i>TM</i> <sub>79</sub>	4 20.4 132°04'		2°4'/18.7		18	<b>297853</b>	2002 <i>CY</i> <sub>22</sub>	4 20.4 69°00'		3°3'/18.2		18
3 12	14 23.78	-7 59.3	1.652	2.457	16.6	20.3	3 12	14 21.72	-7 34.1	1.356	2.180	18.6	20.4
<b>189857</b>	2003 <i>GV</i> <sub>55</sub>	4 20.4 279°26'		6°6'/13.5		18	<b>64875</b>	2001 <i>YS</i> <sub>63</sub>	4 20.4 277°37'		3°6'/18.0		17
3 12	14 16.09	+1 19.1	1.919	2.741	14.0	20.2	3 12	14 20.68	-5 51.6	1.482	2.304	17.4	19.5
<b>120071</b>	2003 <i>DM</i> <sub>16</sub>	4 20.4 41°12'		4°0'/16.2		18 R	<b>169155</b>	2001 <i>QS</i> <sub>179</sub>	4 20.4 214°66'		0°6'/19.7		18
3 12	14 14.89	-2 54.3	2.206	3.019	12.7	20.1	3 12	14 17.79	-11 16.9	2.845	3.622	11.1	21.5
<b>54546</b>	2000 <i>QQ</i> <sub>69</sub>	4 20.4 339°78'		1°4'/21.6		18	<b>494238</b>	2016 <i>PN</i> <sub>13</sub>	4 20.4 264°55'		4°1'/16.5		17
3 12	14 15.77	-17 27.4	2.053	2.835	14.6	19.3	3 12	14 17.66	-0 38.6	2.284	3.093	12.5	21.1
<b>185593</b>	2008 <i>BC</i> <sub>41</sub>	4 20.4 20°23'		2°8'/17.9		18	<b>66746</b>	1999 <i>TW</i> <sub>136</sub>	4 20.4 42°57'		1°3'/21.2		18
3 12	14 16.52	-5 20.2	2.139	2.948	13.2	20.4	3 12	14 20.99	-15 14.0	1.344	2.153	19.5	18.9
<b>157219</b>	2004 <i>RY</i> <sub>35</sub>	4 20.4 176°67'		2°8'/17.8		18	<b>178505</b>	1999 <i>TO</i> <sub>148</sub>	4 20.4 183°57'		1°3'/21.4		17
3 12	14 19.03	-5 57.1	2.191	2.992	13.2	21.2	3 12	14 21.71	-17 9.4	1.934	2.708	15.6	21.5
<b>178103</b>	2006 <i>SH</i> <sub>280</sub>	4 20.4 139°35'		2°3'/17.9		18	<b>312221</b>	2007 <i>WO</i> <sub>36</sub>	4 20.4 103°12'		4°2'/23.7		18
3 12	14 17.11	-5 33.6	2.646	3.441	11.3	21.0	3 12	14 20.84	-23 53.6	1.638	2.402	18.4	21.1
<b>37554</b>	1981 <i>ET</i> <sub>44</sub>	4 20.4 283°68'		4°2'/23.3		17	<b>507619</b>	2013 <i>ED</i> <sub>21</sub>	4 20.4 92°03'		0°4'/19.9		17
3 12	14 19.41	-22 41.0	1.558	2.333	18.8	19.7	3 12	14 14.04	-13 32.9	2.598	3.381	11.8	21.5
<b>199307</b>	2006 <i>BR</i> <sub>93</sub>	4 20.4 264°04'		3°4'/23.2		18	<b>22470</b>	<i>Shirakawa-go</i>	4 20.4 24°42'		1°8'/19.2		18
3 12	14 19.73	-21 59.7	2.073	2.828	15.3	20.4	3 12	14 17.33	-10 18.3	1.284	2.114	19.1	18.5























EPHEMERIDES

4 20.6

4 20.6

2020	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	2020	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$
<b>310345</b>	2011 <i>UV</i> <sub>241</sub>		4 20.6 253°49' 1.7°/18.9 17'				<b>276515</b>	2003 <i>QZ</i> <sub>104</sub>		4 20.6 271°88' 6°2'/13.4 18'			
3 12	14 19.53	- 7 2.7	2.631	3.418	11.6	21.5	3 12	14 17.72	+ 2 26.4	2.225	3.037	12.7	20.4
<b>26171</b>	1996 <i>BY</i> <sub>2</sub>		4 20.6 102°13' 1°9'/18.9 18'				<b>433129</b>	2012 <i>TM</i> <sub>184</sub>		4 20.6 112°58' 0°2'/20.4 17'			
3 12	14 21.80	- 9 51.8	1.804	2.604	15.6	18.3	3 12	14 17.89	-13 46.7	2.228	3.012	13.5	21.5
<b>17780</b>	2005 <i>KK</i> <sub>10</sub>		4 20.6 284°47' 0°3'/20.8 17'				<b>18461</b>	Seiichikanno		4 20.6 298°03' 8°8'/27.2 18'			
3 12	14 18.97	-14 49.1	1.664	2.462	16.8	20.6	3 12	14 21.76	-33 20.8	1.869	2.573	18.4	18.2
<b>376371</b>	2011 <i>OU</i> <sub>44</sub>		4 20.6 257°18' 0°5'/19.6 17'				<b>504556</b>	2008 <i>SM</i> <sub>277</sub>		4 20.6 203°95' 2°4'/18.3 17'			
3 12	14 9.86	-10 26.8	4.804	5.579	6.9	21.9	3 12	14 19.70	- 6 30.5	2.297	3.093	12.8	22.4
<b>341101</b>	2007 <i>JH</i> <sub>30</sub>		4 20.6 315°07' 3°4'/23.8 17'				<b>216126</b>	2006 <i>SD</i> <sub>89</sub>		4 20.6 54°14' 0°4'/20.3 17'			
3 12	14 13.14	-25 48.5	1.634	2.404	18.2	20.1	3 12	14 17.94	-12 22.6	2.110	2.901	14.0	20.8
<b>53138</b>	1999 <i>BW</i> <sub>4</sub>		4 20.6 81°30' 3°3'/23.0 18'				<b>92350</b>	2000 <i>HK</i> <sub>5</sub>		4 20.6 223°74' 1°1'/19.9 18'			
3 12	14 22.03	-20 58.0	1.754	2.522	17.2	19.7	3 12	14 24.79	-10 26.9	1.712	2.507	16.5	19.9
<b>368215</b>	2001 <i>SR</i> <sub>93</sub>		4 20.6 224°68' 1°5'/21.9 17'				<b>176266</b>	2001 <i>RO</i> <sub>51</sub>		4 20.6 148°00' 5°7'/27.1 18'			
3 12	14 22.03	-17 39.5	2.184	2.948	14.4	22.3	3 12	14 21.76	-32 53.8	2.807	3.479	13.5	21.0
<b>17009</b>	1999 <i>CM</i> <sub>70</sub>		4 20.6 323°15' 0°9'/21.3 18'				<b>59671</b>	1999 <i>JW</i> <sub>99</sub>		4 20.6 250°04' 2°7'/17.7 18'			
3 12	14 14.26	-17 7.0	1.474	2.283	18.1	17.3	3 12	14 18.30	- 8 4.8	2.317	3.112	12.7	20.1
<b>188234</b>	2002 <i>UO</i> <sub>74</sub>		4 20.6 234°50' 0°2'/20.2 18'				<b>64731</b>	2001 <i>XC</i> <sub>118</sub>		4 20.6 6°72' 4°3'/16.4 18'			
3 12	14 9.57	-12 57.0	4.590	5.359	7.3	21.1	3 12	14 17.77	+ 0 10.0	2.289	3.098	12.5	19.2







EPHEMERIDES

Table with columns for year (2020), epoch (alpha\_2000, delta\_2000), and parameters (Delta, r, beta, V) for various astronomical objects like 509530, 5171, 67139, etc.



















EPHEMERIDES

2020	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	2020	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$
<b>299973</b>	2006 <i>TG</i> <sub>100</sub>	4 20.8 217°10		1°0/21.8 18			<b>176532</b>	2002 <i>AF</i> <sub>2</sub>	4 20.8 102°53		2°7/23.7 17		
3 12	14 19.25	-16 52.5	2.741	3.499	11.9	22.0	3 12	14 19.27	-22 41.5	2.553	3.292	13.2	20.9
<b>336897</b>	2011 <i>GY</i> <sub>76</sub>	4 20.8 160°16		0°1/20.9 17			<b>265709</b>	2005 <i>UT</i> <sub>237</sub>	4 20.8 194°13		3°0/18.4 18		
3 12	14 21.63	-13 22.6	2.066	2.848	14.5	21.0	3 12	14 20.94	-5 59.9	1.875	2.681	14.9	20.5
<b>360271</b>	2000 <i>SJ</i> <sub>239</sub>	4 20.8 258°27		1°8/19.3 16			<b>281628</b>	2008 <i>UE</i> <sub>286</sub>	4 20.8 168°08		1°3/19.5 17		
3 12	14 20.87	-11 15.4	1.698	2.500	16.4	21.5	3 12	14 19.68	-10 21.1	2.252	3.040	13.3	21.6
<b>311189</b>	2004 <i>XC</i> <sub>17</sub>	4 20.8 187°46		1°5/19.6 18			<b>294415</b>	2007 <i>VL</i> <sub>213</sub>	4 20.8 156°78		0°3/21.1 18		
3 12	14 25.10	-9 52.2	2.078	2.861	14.4	21.9	3 12	14 17.42	-16 17.9	2.399	3.171	13.0	21.3
<b>180744</b>	2004 <i>LM</i> <sub>4</sub>	4 20.8 336°54		0°2/20.9 17			<b>138564</b>	2000 <i>QH</i> <sub>74</sub>	4 20.8 130°47		2°6/24.0 18		
3 12	14 16.00	-13 10.1	1.301	2.127	19.1	19.0	3 12	14 20.35	-23 32.2	3.148	3.867	11.3	21.2
<b>390957</b>	2005 <i>NL</i> <sub>49</sub>	4 20.8 256°93		6°0/14.7 17			<b>269778</b>	1999 <i>TE</i> <sub>135</sub>	4 20.8 273°13		2°9/22.7 17		
3 12	14 19.34	+ 4 59.8	2.351	3.156	12.3	20.9	3 12	14 24.65	-18 39.4	2.028	2.788	15.5	21.0
<b>495892</b>	2004 <i>WA</i> <sub>5</sub>	4 20.8 188°03		2°2/18.9 17			<b>374357</b>	2005 <i>UV</i> <sub>181</sub>	4 20.8 48°02		2°1/19.2 17		
3 12	14 24.86	-8 1.2	1.951	2.743	14.9	22.2	3 12	14 20.84	-8 22.8	1.730	2.537	15.9	21.2
<b>468422</b>	2000 <i>FA</i> <sub>8</sub>	4 20.8 347°57		0°0/20.8 15			<b>55652</b>	4048 <i>P-L</i>	4 20.8 218°96		0°1/20.9 18		<i>R</i>
3 12	13 57.62	-12 2.7	41.906	42.672	0.9	23.9	3 12	14 18.25	-14 36.8	2.412	3.187	12.9	19.5
<b>28339</b>	1999 <i>EC</i> <sub>3</sub>	4 20.8 251°33		3°2/23.6 18			<b>344671</b>	2003 <i>SQ</i> <sub>152</sub>	4 20.8 240°00		1°2/19.9 17		
3 12	14 21.53	-21 52.0	2.391	3.133	13.9	18.6	3 12	14 23.09	-8 51.3	2.157	2.945	13.8	20.7































