

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:12, page 1

Attention, astronomical year style is used: The year -400 in astronomical counting style is the year 401 BCE in historical counting style.

direct	-400 Feb 23 j 03:07	11°II18'37		conjunction	-393 Jul 17 j 11:07	18°☾06'53	0°31'47
				minimum elong	-393 Jul 17 j 11:07	18°☾06'53	0°31'47
conjunction	-400 Jun 12 j 19:39	15°II38'11	0°10'24	retrograde	-393 Nov 03 j 02:17	22°☾29'28	
minimum elong	-400 Jun 12 j 19:39	15°II38'11	0°10'24	opposition	-392 Jan 15 j 10:39	20°☾27'08	0°36'46
behind sun begin	-400 Jun 12 j 14:23	15°II37'24		min. Earth dist.	-392 Jan 16 j 10:26	20°☾24'32	17.42058 AU
behind sun end	-400 Jun 13 j 00:55	15°II38'57		direct	-392 Mar 31 j 06:08	18°☾21'14	
max. Earth dist.	-400 Jun 11 j 21:31	15°II34'50	19.78555 AU	max. Earth dist.	-392 Jul 20 j 10:05	22°☾46'35	19.40286 AU
retrograde	-400 Sep 30 j 12:53	19°II56'46					
opposition	-400 Dec 13 j 16:48	17°II54'20	0°13'24	conjunction	-392 Jul 21 j 14:50	22°☾51'03	0°34'12
min. Earth dist.	-400 Dec 14 j 11:26	17°II52'19	17.75508 AU	minimum elong	-392 Jul 21 j 14:50	22°☾51'03	0°34'12
direct	-399 Feb 26 j 21:22	15°II50'12		retrograde	-392 Nov 07 j 00:41	27°☾13'55	
				opposition	-391 Jan 19 j 09:24	25°☾11'35	0°39'21
conjunction	-399 Jun 17 j 20:10	20°II11'17	0°13'45	min. Earth dist.	-391 Jan 20 j 10:34	25°☾08'50	17.38708 AU
minimum elong	-399 Jun 17 j 20:11	20°II11'17	0°13'46	direct	-391 Apr 05 j 07:18	23°☾05'28	
behind sun begin	-399 Jun 17 j 16:46	20°II10'47					
behind sun end	-399 Jun 17 j 23:35	20°II11'48		conjunction	-391 Jul 26 j 18:45	27°☾36'05	0°36'24
max. Earth dist.	-399 Jun 16 j 21:57	20°II07'55	19.72533 AU	minimum elong	-391 Jul 26 j 18:45	27°☾36'05	0°36'24
retrograde	-399 Oct 05 j 10:25	24°II30'35		max. Earth dist.	-391 Jul 25 j 13:15	27°☾31'29	19.37153 AU
opposition	-399 Dec 18 j 09:59	22°II28'07	0°17'07				
min. Earth dist.	-399 Dec 19 j 05:04	22°II26'03	17.69662 AU	retrograde	-391 Nov 12 j 00:44	1°☾59'09	
direct	-398 Mar 03 j 16:52	20°II23'41					
				opposition	-390 Jan 23 j 03:07	30°R☾	
conjunction	-398 Jun 22 j 21:16	24°II46'15	0°17'03	opposition	-390 Jan 24 j 08:25	29°☾56'48	0°41'40
minimum elong	-398 Jun 22 j 21:16	24°II46'15	0°17'03	min. Earth dist.	-390 Jan 25 j 08:51	29°☾54'08	17.35798 AU
max. Earth dist.	-398 Jun 21 j 20:52	24°II42'32	19.66868 AU	direct	-390 Apr 10 j 10:30	27°☾50'29	
retrograde	-398 Oct 10 j 07:19	29°II06'14					
opposition	-398 Dec 23 j 04:08	27°II03'47	0°20'45	conjunction	-390 Jul 31 j 22:48	2°☾21'46	0°38'20
min. Earth dist.	-398 Dec 24 j 00:50	27°II01'31	17.64192 AU	minimum elong	-390 Jul 31 j 22:48	2°☾21'46	0°38'20
direct	-397 Mar 08 j 12:18	24°II59'02		max. Earth dist.	-390 Jul 30 j 18:02	2°☾17'16	19.34473 AU
				retrograde	-390 Nov 16 j 23:40	6°☾44'57	
conjunction	-397 Jun 27 j 23:01	29°II23'03	0°20'16	opposition	-389 Jan 29 j 08:17	4°☾42'36	0°43'43
minimum elong	-397 Jun 27 j 23:01	29°II23'03	0°20'16	min. Earth dist.	-389 Jan 30 j 09:34	4°☾39'50	17.33374 AU
max. Earth dist.	-397 Jun 26 j 22:29	29°II19'18	19.61575 AU	direct	-389 Apr 15 j 12:39	2°☾36'07	
				max. Earth dist.	-389 Aug 04 j 21:12	7°☾03'18	19.32319 AU
retrograde	-397 Jul 08 j 00:33	0°☾					
opposition	-397 Oct 15 j 06:22	3°☾43'41		conjunction	-389 Aug 06 j 02:25	7°☾07'53	0°40'02
min. Earth dist.	-397 Dec 27 j 23:01	1°☾41'16	0°24'16	minimum elong	-389 Aug 06 j 02:24	7°☾07'53	0°40'02
				retrograde	-389 Nov 22 j 00:21	11°☾31'09	
direct	-396 Feb 11 j 04:22	30°R☾II		opposition	-388 Feb 03 j 08:27	9°☾28'46	0°45'27
				min. Earth dist.	-388 Feb 04 j 08:33	9°☾26'08	17.31502 AU
max. Earth dist.	-396 Jun 30 j 23:03	3°☾57'39	19.56633 AU	direct	-388 Apr 19 j 16:39	7°☾22'08	
				max. Earth dist.	-388 Aug 09 j 02:36	11°☾49'58	19.30734 AU
conjunction	-396 Jul 02 j 01:17	4°☾01'41	0°23'22				
minimum elong	-396 Jul 02 j 01:17	4°☾01'41	0°23'23	conjunction	-388 Aug 10 j 06:05	11°☾54'17	0°41'26
retrograde	-396 Oct 19 j 04:23	8°☾22'55		minimum elong	-388 Aug 10 j 06:05	11°☾54'17	0°41'26
opposition	-396 Dec 31 j 18:46	6°☾20'32	0°27'40				
min. Earth dist.	-395 Jan 01 j 17:22	6°☾18'04	17.54324 AU	retrograde	-388 Nov 25 j 23:39	16°☾17'31	
direct	-395 Mar 17 j 06:18	4°☾15'18					
max. Earth dist.	-395 Jul 06 j 01:25	8°☾37'52	19.52043 AU	opposition	-387 Feb 07 j 09:04	14°☾15'10	0°46'52
				min. Earth dist.	-387 Feb 08 j 09:19	14°☾12'31	17.30226 AU
conjunction	-395 Jul 07 j 04:08	8°☾41'59	0°26'20	direct	-387 Apr 24 j 18:59	12°☾08'26	
minimum elong	-395 Jul 07 j 04:08	8°☾41'59	0°26'20				
retrograde	-395 Oct 24 j 04:07	13°☾03'44		max. Earth dist.	-387 Aug 14 j 05:42	16°☾36'28	19.29781 AU
opposition	-394 Jan 05 j 15:17	11°☾01'24	0°30'54				
min. Earth dist.	-394 Jan 06 j 13:49	10°☾58'56	17.49894 AU	conjunction	-387 Aug 15 j 09:23	16°☾40'50	0°42'34
direct	-394 Mar 22 j 05:25	8°☾55'57		minimum elong	-387 Aug 15 j 09:23	16°☾40'50	0°42'33
max. Earth dist.	-394 Jul 11 j 03:35	13°☾19'29	19.47766 AU	retrograde	-387 Dec 01 j 00:37	21°☾04'00	
				opposition	-386 Feb 12 j 10:04	19°☾01'40	0°47'58
conjunction	-394 Jul 12 j 07:29	13°☾23'48	0°29'09	min. Earth dist.	-386 Feb 13 j 08:57	18°☾59'10	17.29603 AU
minimum elong	-394 Jul 12 j 07:29	13°☾23'48	0°29'10	direct	-386 Apr 29 j 22:54	16°☾54'55	
retrograde	-394 Oct 29 j 02:17	17°☾46'00		max. Earth dist.	-386 Aug 19 j 11:10	21°☾23'25	19.29485 AU
opposition	-393 Jan 10 j 12:39	15°☾43'40	0°33'56				
min. Earth dist.	-393 Jan 11 j 12:54	15°☾41'01	17.45799 AU	conjunction	-386 Aug 20 j 12:31	21°☾27'25	0°43'23
direct	-393 Mar 27 j 04:34	13°☾37'59		minimum elong	-386 Aug 20 j 12:31	21°☾27'25	0°43'24
max. Earth dist.	-393 Jul 16 j 06:33	18°☾02'27	19.43845 AU	retrograde	-386 Dec 06 j 00:31	25°☾50'26	

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:12, page 2

Attention, astronomical year style is used: The year -385 in astronomical counting style is the year 386 BCE in historical counting style.

opposition	-385 Feb 17 j 11:32	23° $\Omega$ 48'12	0°48'44	retrograde	-377 Jan 12 j 20:17	3° $\Omega$ 48'36	
min. Earth dist.	-385 Feb 18 j 09:46	23° $\Omega$ 45'47	17.29638 AU	opposition	-377 Mar 28 j 04:28	1° $\Omega$ 47'29	0°42'53
direct	-385 May 05 j 01:48	21° $\Omega$ 41'31		min. Earth dist.	-377 Mar 28 j 15:26	1° $\Omega$ 46'19	17.50064 AU
					-377 May 18 j 02:07	30° $\mathbb{R}$ $\mathbb{M}$	
conjunction	-385 Aug 25 j 15:10	26° $\Omega$ 13'59	0°43'56	direct	-377 Jun 13 j 08:59	29° $\mathbb{M}$ 42'37	
minimum elong	-385 Aug 25 j 15:10	26° $\Omega$ 13'59	0°43'55		-377 Jul 09 j 02:58	0° $\Omega$	
max. Earth dist.	-385 Aug 24 j 14:02	26° $\Omega$ 10'01	19.29869 AU				
	-385 Nov 04 j 16:51	0° $\mathbb{M}$		conjunction	-377 Oct 02 j 17:54	4° $\Omega$ 09'54	0°37'34
retrograde	-385 Dec 11 j 01:19	0° $\mathbb{M}$ 36'50		minimum elong	-377 Oct 02 j 17:54	4° $\Omega$ 09'54	0°37'34
	-384 Jan 17 j 06:55	30° $\mathbb{R}$ $\Omega$		max. Earth dist.	-377 Oct 02 j 06:26	4° $\Omega$ 08'06	19.52215 AU
opposition	-384 Feb 22 j 13:12	28° $\Omega$ 34'43	0°49'10	retrograde	-376 Jan 17 j 16:30	8° $\Omega$ 28'58	
min. Earth dist.	-384 Feb 23 j 10:05	28° $\Omega$ 32'27	17.30360 AU	opposition	-376 Apr 01 j 06:09	6° $\Omega$ 27'55	0°40'45
direct	-384 May 09 j 05:14	26° $\Omega$ 28'09		min. Earth dist.	-376 Apr 01 j 16:24	6° $\Omega$ 26'50	17.54479 AU
	-384 Aug 13 j 15:43	0° $\mathbb{M}$		direct	-376 Jun 17 j 10:27	4° $\Omega$ 23'18	
conjunction	-384 Aug 29 j 17:29	1° $\mathbb{M}$ 00'29	0°44'10	conjunction	-376 Oct 06 j 14:48	8° $\Omega$ 49'22	0°35'33
minimum elong	-384 Aug 29 j 17:29	1° $\mathbb{M}$ 00'29	0°44'10	minimum elong	-376 Oct 06 j 14:48	8° $\Omega$ 49'22	0°35'33
max. Earth dist.	-384 Aug 28 j 18:52	0° $\mathbb{M}$ 56'54	19.30915 AU	max. Earth dist.	-376 Oct 06 j 04:51	8° $\Omega$ 47'48	19.56812 AU
retrograde	-384 Dec 15 j 01:39	5° $\mathbb{M}$ 23'04		retrograde	-375 Jan 21 j 14:28	13° $\Omega$ 07'39	
opposition	-383 Feb 26 j 15:09	3° $\mathbb{M}$ 21'07	0°49'16	opposition	-375 Apr 06 j 07:19	11° $\Omega$ 06'41	0°38'22
min. Earth dist.	-383 Feb 27 j 10:52	3° $\mathbb{M}$ 18'59	17.31699 AU	min. Earth dist.	-375 Apr 06 j 14:39	11° $\Omega$ 05'54	17.59235 AU
direct	-383 May 14 j 08:51	1° $\mathbb{M}$ 14'44		direct	-375 Jun 22 j 13:07	9° $\Omega$ 02'20	
conjunction	-383 Sep 03 j 19:21	5° $\mathbb{M}$ 46'46	0°44'06	conjunction	-375 Oct 11 j 10:49	13° $\Omega$ 27'04	0°33'18
minimum elong	-383 Sep 03 j 19:21	5° $\mathbb{M}$ 46'46	0°44'06	minimum elong	-375 Oct 11 j 10:50	13° $\Omega$ 27'04	0°33'17
max. Earth dist.	-383 Sep 02 j 21:15	5° $\mathbb{M}$ 43'16	19.32555 AU	max. Earth dist.	-375 Oct 11 j 03:42	13° $\Omega$ 25'58	19.61745 AU
retrograde	-383 Dec 20 j 01:36	10° $\mathbb{M}$ 09'04		retrograde	-374 Jan 26 j 10:02	17° $\Omega$ 44'34	
opposition	-382 Mar 03 j 17:13	8° $\mathbb{M}$ 07'16	0°49'01	opposition	-374 Apr 11 j 08:11	15° $\Omega$ 43'39	0°35'45
min. Earth dist.	-382 Mar 04 j 11:58	8° $\mathbb{M}$ 05'15	17.33625 AU	min. Earth dist.	-374 Apr 11 j 14:31	15° $\Omega$ 42'59	17.64350 AU
direct	-382 May 19 j 12:01	6° $\mathbb{M}$ 01'06		direct	-374 Jun 27 j 13:32	13° $\Omega$ 39'35	
conjunction	-382 Sep 08 j 20:50	10° $\mathbb{M}$ 32'43	0°43'44	conjunction	-374 Oct 16 j 05:48	18° $\Omega$ 02'55	0°30'52
minimum elong	-382 Sep 08 j 20:50	10° $\mathbb{M}$ 32'43	0°43'44	minimum elong	-374 Oct 16 j 05:48	18° $\Omega$ 02'55	0°30'52
max. Earth dist.	-382 Sep 08 j 01:03	10° $\mathbb{M}$ 29'35	19.34751 AU	max. Earth dist.	-374 Oct 16 j 00:14	18° $\Omega$ 02'03	19.67055 AU
retrograde	-382 Dec 25 j 02:01	14° $\mathbb{M}$ 54'38		retrograde	-373 Jan 31 j 06:48	22° $\Omega$ 19'36	
opposition	-381 Mar 08 j 19:35	12° $\mathbb{M}$ 53'00	0°48'26	opposition	-373 Apr 16 j 08:28	20° $\Omega$ 18'45	0°32'56
min. Earth dist.	-381 Mar 09 j 12:39	12° $\mathbb{M}$ 51'10	17.36061 AU	min. Earth dist.	-373 Apr 16 j 11:32	20° $\Omega$ 18'26	17.69844 AU
direct	-381 May 24 j 16:48	10° $\mathbb{M}$ 47'06		direct	-373 Jul 02 j 14:20	18° $\Omega$ 15'01	
conjunction	-381 Sep 13 j 21:30	15° $\mathbb{M}$ 18'06	0°43'04	conjunction	-373 Oct 20 j 23:53	22° $\Omega$ 36'54	0°28'15
minimum elong	-381 Sep 13 j 21:30	15° $\mathbb{M}$ 18'06	0°43'04	minimum elong	-373 Oct 20 j 23:53	22° $\Omega$ 36'54	0°28'15
max. Earth dist.	-381 Sep 13 j 02:46	15° $\mathbb{M}$ 15'09	19.37430 AU	max. Earth dist.	-373 Oct 20 j 21:37	22° $\Omega$ 36'33	19.72733 AU
retrograde	-381 Dec 30 j 00:32	19° $\mathbb{M}$ 39'36		retrograde	-372 Feb 05 j 01:26	26° $\Omega$ 52'45	
opposition	-380 Mar 12 j 22:01	17° $\mathbb{M}$ 38'07	0°47'31	opposition	-372 Apr 20 j 08:18	24° $\Omega$ 52'00	0°29'55
min. Earth dist.	-380 Mar 13 j 14:18	17° $\mathbb{M}$ 36'22	17.38974 AU	min. Earth dist.	-372 Apr 20 j 10:03	24° $\Omega$ 51'49	17.75701 AU
direct	-380 May 28 j 20:10	15° $\mathbb{M}$ 32'27		direct	-372 Jul 06 j 13:52	22° $\Omega$ 48'38	
conjunction	-380 Sep 17 j 21:45	20° $\mathbb{M}$ 02'44	0°42'06	conjunction	-372 Oct 24 j 17:03	27° $\Omega$ 09'01	0°25'29
minimum elong	-380 Sep 17 j 21:45	20° $\mathbb{M}$ 02'44	0°42'05	minimum elong	-372 Oct 24 j 17:03	27° $\Omega$ 09'01	0°25'28
max. Earth dist.	-380 Sep 17 j 04:58	20° $\mathbb{M}$ 00'05	19.40562 AU	max. Earth dist.	-372 Oct 24 j 16:05	27° $\Omega$ 08'53	19.78771 AU
retrograde	-379 Jan 03 j 00:09	24° $\mathbb{M}$ 23'43			-372 Dec 13 j 20:11	0° $\mathbb{M}$	
opposition	-379 Mar 18 j 00:11	22° $\mathbb{M}$ 22'22	0°46'17	retrograde	-371 Feb 08 j 20:56	1° $\mathbb{M}$ 24'04	
min. Earth dist.	-379 Mar 18 j 14:23	22° $\mathbb{M}$ 20'51	17.42296 AU		-371 Apr 10 j 10:24	30° $\mathbb{R}$ $\Omega$	
direct	-379 Jun 03 j 01:28	20° $\mathbb{M}$ 16'59		opposition	-371 Apr 25 j 07:17	29° $\Omega$ 23'26	0°26'45
conjunction	-379 Sep 22 j 21:19	24° $\mathbb{M}$ 46'23	0°40'51	min. Earth dist.	-371 Apr 25 j 05:56	29° $\Omega$ 23'34	17.81895 AU
minimum elong	-379 Sep 22 j 21:19	24° $\mathbb{M}$ 46'23	0°40'52	direct	-371 Jul 11 j 12:55	27° $\Omega$ 20'27	
max. Earth dist.	-379 Sep 22 j 05:59	24° $\mathbb{M}$ 43'59	19.44081 AU		-371 Oct 01 j 22:42	0° $\mathbb{M}$	
retrograde	-378 Jan 07 j 21:22	29° $\mathbb{M}$ 06'47		conjunction	-371 Oct 29 j 09:30	1° $\mathbb{M}$ 39'22	0°22'35
opposition	-378 Mar 23 j 02:29	27° $\mathbb{M}$ 05'34	0°44'44	minimum elong	-371 Oct 29 j 09:30	1° $\mathbb{M}$ 39'22	0°22'35
min. Earth dist.	-378 Mar 23 j 16:03	27° $\mathbb{M}$ 04'07	17.46005 AU	max. Earth dist.	-371 Oct 29 j 11:52	1° $\mathbb{M}$ 39'44	19.85111 AU
direct	-378 Jun 08 j 04:16	25° $\mathbb{M}$ 00'26		retrograde	-370 Feb 13 j 14:25	5° $\mathbb{M}$ 53'34	
conjunction	-378 Sep 27 j 19:58	29° $\mathbb{M}$ 28'51	0°39'20	opposition	-370 Apr 30 j 06:01	3° $\mathbb{M}$ 53'06	0°23'26
minimum elong	-378 Sep 27 j 19:58	29° $\mathbb{M}$ 28'51	0°39'20	min. Earth dist.	-370 Apr 30 j 03:15	3° $\mathbb{M}$ 53'23	17.88358 AU
max. Earth dist.	-378 Sep 27 j 06:21	29° $\mathbb{M}$ 26'42	19.47977 AU	direct	-370 Jul 16 j 11:36	1° $\mathbb{M}$ 50'35	
	-378 Oct 06 j 01:58	0° $\Omega$		conjunction	-370 Nov 03 j 00:50	6° $\mathbb{M}$ 07'57	0°19'33

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:12, page 3

Attention, astronomical year style is used: The year -370 in astronomical counting style is the year 371 BCE in historical counting style.

minimum elong	-370 Nov 03 j 00:50	6°M07'57	0°19'32	opposition	-363 Jun 01 j 02:33	4°Z32'03	0°-1'-53
max. Earth dist.	-370 Nov 03 j 04:23	6°M08'29	19.91695 AU	direct	-363 Aug 17 j 01:26	2°Z32'22	
retrograde	-369 Feb 18 j 08:45	10°M21'22					
opposition	-369 May 05 j 04:05	8°M21'02	0°19'59	conjunction	-363 Dec 02 j 16:07	6°Z39'09	0°-3'-25
min. Earth dist.	-369 May 04 j 22:33	8°M21'37	17.95035 AU	minimum elong	-363 Dec 02 j 16:07	6°Z39'09	0°03'27
direct	-369 Jul 21 j 09:06	6°M18'57		behind sun begin	-363 Dec 02 j 09:38	6°Z38'13	
				behind sun end	-363 Dec 02 j 22:36	6°Z40'06	
conjunction	-369 Nov 07 j 15:39	10°M34'49	0°16'25	max. Earth dist.	-363 Dec 03 j 08:30	6°Z41'37	20.38391 AU
minimum elong	-369 Nov 07 j 15:39	10°M34'49	0°16'26	retrograde	-362 Mar 20 j 17:45	10°Z47'02	
max. Earth dist.	-369 Nov 07 j 22:22	10°M35'50	19.98441 AU	opposition	-362 Jun 05 j 19:47	8°Z47'31	0°-5'-32
retrograde	-368 Feb 23 j 01:04	14°M47'24		min. Earth dist.	-362 Jun 05 j 03:07	8°Z49'12	18.41475 AU
opposition	-368 May 09 j 01:26	12°M47'15	0°16'27	direct	-362 Aug 21 j 18:10	6°Z48'09	
min. Earth dist.	-368 May 08 j 18:33	12°M47'58	18.01830 AU				
direct	-368 Jul 25 j 06:15	10°M45'38		conjunction	-362 Dec 07 j 01:26	10°Z53'29	0°-6'-40
				minimum elong	-362 Dec 07 j 01:25	10°Z53'29	0°06'41
conjunction	-368 Nov 11 j 05:31	14°M59'57	0°13'13	behind sun begin	-362 Dec 06 j 19:18	10°Z52'35	
minimum elong	-368 Nov 11 j 05:31	14°M59'57	0°13'13	behind sun end	-362 Dec 07 j 07:33	10°Z54'22	
behind sun begin	-368 Nov 11 j 01:33	14°M59'22		max. Earth dist.	-362 Dec 07 j 18:27	10°Z56'01	20.44538 AU
behind sun end	-368 Nov 11 j 09:28	15°M00'32		retrograde	-361 Mar 25 j 06:11	15°Z00'38	
	-368 Nov 11 j 05:45	15°M		opposition	-361 Jun 10 j 12:14	13°Z01'07	0°-9'-6
max. Earth dist.	-368 Nov 11 j 13:02	15°M01'05	20.05274 AU	min. Earth dist.	-361 Jun 09 j 18:32	13°Z02'55	18.47557 AU
retrograde	-367 Feb 26 j 18:15	19°M11'45		direct	-361 Aug 26 j 07:24	11°Z02'01	
opposition	-367 May 13 j 22:14	17°M11'45	0°12'51				
min. Earth dist.	-367 May 13 j 13:09	17°M12'41	18.08683 AU	conjunction	-361 Dec 11 j 10:19	15°Z05'58	0°-9'-51
direct	-367 Jul 30 j 01:54	15°M10'33		minimum elong	-361 Dec 11 j 10:19	15°Z05'58	0°09'52
				behind sun begin	-361 Dec 11 j 04:57	15°Z05'11	
conjunction	-367 Nov 15 j 18:43	19°M23'21	0°09'57	behind sun end	-361 Dec 11 j 15:40	15°Z06'45	
minimum elong	-367 Nov 15 j 18:44	19°M23'21	0°09'57	max. Earth dist.	-361 Dec 12 j 05:46	15°Z08'52	20.50541 AU
behind sun begin	-367 Nov 15 j 13:23	19°M22'34		retrograde	-360 Mar 28 j 18:00	19°Z12'23	
behind sun end	-367 Nov 16 j 00:05	19°M24'09		min. Earth dist.	-360 Jun 13 j 08:01	17°Z14'53	18.53490 AU
max. Earth dist.	-367 Nov 16 j 05:08	19°M24'56	20.12115 AU	opposition	-360 Jun 14 j 03:35	17°Z12'55	0°-12'-36
retrograde	-366 Mar 03 j 09:16	23°M34'21		direct	-360 Aug 29 j 22:25	15°Z14'06	
opposition	-366 May 18 j 18:27	21°M34'31	0°09'11				
min. Earth dist.	-366 May 18 j 07:55	21°M35'35	18.15500 AU	conjunction	-360 Dec 14 j 18:24	19°Z16'43	0°-12'-57
direct	-366 Aug 03 j 21:45	19°M33'45		minimum elong	-360 Dec 14 j 18:24	19°Z16'43	0°12'58
				behind sun begin	-360 Dec 14 j 14:19	19°Z16'07	
conjunction	-366 Nov 20 j 07:07	23°M45'01	0°06'40	behind sun end	-360 Dec 14 j 22:29	19°Z17'18	
minimum elong	-366 Nov 20 j 07:06	23°M45'01	0°06'40	max. Earth dist.	-360 Dec 15 j 14:29	19°Z19'41	20.56406 AU
behind sun begin	-366 Nov 20 j 00:58	23°M44'06		retrograde	-359 Apr 02 j 05:19	23°Z22'29	
behind sun end	-366 Nov 20 j 13:14	23°M45'55		opposition	-359 Jun 18 j 18:27	21°Z23'02	0°-16'-1
max. Earth dist.	-366 Nov 20 j 18:06	23°M46'40	20.18899 AU	min. Earth dist.	-359 Jun 17 j 22:03	21°Z25'05	18.59307 AU
retrograde	-365 Mar 08 j 01:17	27°M55'14		direct	-359 Sep 03 j 09:33	19°Z24'30	
opposition	-365 May 23 j 13:55	25°M55'30	0°05'29				
min. Earth dist.	-365 May 23 j 01:42	25°M56'45	18.22244 AU	conjunction	-359 Dec 19 j 01:58	23°Z25'51	0°-15'-59
direct	-365 Aug 08 j 15:27	23°M55'08		minimum elong	-359 Dec 19 j 01:58	23°Z25'51	0°16'00
				behind sun begin	-359 Dec 19 j 00:44	23°Z25'41	
conjunction	-365 Nov 24 j 18:54	28°M04'54	0°03'20	behind sun end	-359 Dec 19 j 03:11	23°Z26'02	
minimum elong	-365 Nov 24 j 18:54	28°M04'54	0°03'20	max. Earth dist.	-359 Dec 20 j 00:21	23°Z29'10	20.62151 AU
behind sun begin	-365 Nov 24 j 12:24	28°M03'56		retrograde	-358 Apr 06 j 16:42	27°Z31'00	
behind sun end	-365 Nov 25 j 01:24	28°M05'51		min. Earth dist.	-358 Jun 22 j 10:05	25°Z33'53	18.64978 AU
max. Earth dist.	-365 Nov 25 j 08:26	28°M06'56	20.25570 AU	opposition	-358 Jun 23 j 08:30	25°Z31'37	0°-19'-19
	-365 Dec 27 j 15:41	0°Z		direct	-358 Sep 07 j 22:45	23°Z33'24	
retrograde	-364 Mar 11 j 14:58	2°Z14'19					
opposition	-364 May 27 j 08:38	0°Z14'42	0°01'47	conjunction	-358 Dec 23 j 09:01	27°Z33'33	0°-18'-54
min. Earth dist.	-364 May 26 j 18:55	0°Z16'05	18.28829 AU	minimum elong	-358 Dec 23 j 09:00	27°Z33'33	0°18'55
	-364 Jun 02 j 09:35	30°RM		max. Earth dist.	-358 Dec 24 j 07:54	27°Z36'55	20.67740 AU
direct	-364 Aug 12 j 09:44	28°M14'41					
	-364 Oct 17 j 05:12	0°Z		retrograde	-357 Apr 11 j 03:31	1°Z38'09	
desc. node	-364 Nov 21 j 23:44	2°Z00'19					
				opposition	-357 Jun 27 j 21:52	29°Z38'50	0°-22'-29
conjunction	-364 Nov 28 j 05:48	2°Z22'57	0°00'-3	min. Earth dist.	-357 Jun 26 j 23:02	29°Z41'07	18.70492 AU
minimum elong	-364 Nov 28 j 05:48	2°Z22'57	0°00'04	direct	-357 Sep 12 j 08:30	27°Z40'54	
behind sun begin	-364 Nov 27 j 23:49	2°Z22'05					
behind sun end	-364 Nov 28 j 11:46	2°Z23'49					
max. Earth dist.	-364 Nov 28 j 19:44	2°Z25'03	20.32067 AU	conjunction	-357 Dec 27 j 15:45	1°Z39'57	0°-21'-43
retrograde	-363 Mar 16 j 05:05	6°Z31'36		minimum elong	-357 Dec 27 j 15:45	1°Z39'57	0°21'44
min. Earth dist.	-363 May 31 j 11:37	4°Z33'33	18.35245 AU	max. Earth dist.	-357 Dec 28 j 16:30	1°Z43'35	20.73147 AU

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:12, page 4

Attention, astronomical year style is used: The year -356 in astronomical counting style is the year 357 BCE in historical counting style.

retrograde	-356 Apr 14 j 14:21	5°☾44'01		min. Earth dist.	-348 Aug 02 j 18:33	6°☾01'03	19.04008 AU
min. Earth dist.	-356 Jun 30 j 09:54	3°☾47'15	18.75778 AU	direct	-348 Oct 18 j 12:46	4°☾02'10	
opposition	-356 Jul 01 j 10:29	3°☾44'48	0°-25'-32				
direct	-356 Sep 15 j 19:55	1°☾47'10		conjunction	-347 Jan 31 j 17:52	7°☾54'37	0°-40'-21
				minimum elong	-347 Jan 31 j 17:52	7°☾54'37	0°40'22
conjunction	-356 Dec 30 j 21:56	5°☾45'11	0°-24'-24	max. Earth dist.	-347 Feb 01 j 20:15	7°☾58'24	21.04725 AU
minimum elong	-356 Dec 30 j 21:56	5°☾45'11	0°24'27	retrograde	-347 May 21 j 23:42	11°☾56'01	
max. Earth dist.	-356 Dec 31 j 22:54	5°☾48'50	20.78299 AU	min. Earth dist.	-347 Aug 07 j 03:52	9°☾59'13	19.05442 AU
retrograde	-355 Apr 19 j 00:38	9°☾48'48		opposition	-347 Aug 08 j 04:18	9°☾56'46	0°-45'-15
opposition	-355 Jul 05 j 22:40	7°☾49'38	0°-28'-26	direct	-347 Oct 22 j 17:16	8°☾00'27	
min. Earth dist.	-355 Jul 04 j 22:07	7°☾52'06	18.80799 AU				
direct	-355 Sep 20 j 04:42	5°☾52'18		conjunction	-346 Feb 04 j 23:01	11°☾52'35	0°-41'-31
				minimum elong	-346 Feb 04 j 23:01	11°☾52'35	0°41'33
conjunction	-354 Jan 04 j 04:04	9°☾49'22	0°-26'-58	max. Earth dist.	-346 Feb 06 j 01:50	11°☾56'25	21.05967 AU
minimum elong	-354 Jan 04 j 04:03	9°☾49'21	0°26'59		-346 Apr 08 j 09:08	15°☾	
max. Earth dist.	-354 Jan 05 j 06:30	9°☾53'13	20.83164 AU	retrograde	-346 May 26 j 08:29	15°☾53'55	
retrograde	-354 Apr 23 j 11:06	13°☾52'33			-346 Jul 14 j 16:40	15°☾	
min. Earth dist.	-354 Jul 09 j 08:10	11°☾56'04	18.85492 AU	min. Earth dist.	-346 Aug 11 j 10:33	13°☾57'08	19.06493 AU
opposition	-354 Jul 10 j 10:09	11°☾53'28	0°-31'-11	opposition	-346 Aug 12 j 11:45	13°☾54'36	0°-46'-26
direct	-354 Sep 24 j 14:45	9°☾56'24		direct	-346 Oct 27 j 00:22	11°☾58'18	
					-345 Jan 25 j 10:47	15°☾	
conjunction	-353 Jan 08 j 09:47	13°☾52'34	0°-29'-23				
minimum elong	-353 Jan 08 j 09:47	13°☾52'34	0°29'25	conjunction	-345 Feb 09 j 04:07	15°☾50'12	0°-42'-29
max. Earth dist.	-353 Jan 09 j 12:06	13°☾56'24	20.87664 AU	minimum elong	-345 Feb 09 j 04:07	15°☾50'12	0°42'30
retrograde	-353 Apr 27 j 20:26	17°☾55'24		max. Earth dist.	-345 Feb 10 j 06:08	15°☾53'56	21.06827 AU
opposition	-353 Jul 14 j 21:15	15°☾56'23	0°-33'-47	retrograde	-345 May 30 j 15:43	19°☾51'34	
min. Earth dist.	-353 Jul 13 j 19:53	15°☾58'55	18.89800 AU	opposition	-345 Aug 16 j 19:06	17°☾52'11	0°-47'-23
direct	-353 Sep 28 j 22:47	13°☾59'32		min. Earth dist.	-345 Aug 15 j 19:17	17°☾54'34	19.07176 AU
				direct	-345 Oct 31 j 04:12	15°☾55'54	
conjunction	-352 Jan 12 j 15:36	17°☾54'55	0°-31'-39				
minimum elong	-352 Jan 12 j 15:36	17°☾54'55	0°31'40	conjunction	-344 Feb 13 j 09:29	19°☾47'41	0°-43'-14
max. Earth dist.	-352 Jan 13 j 18:49	17°☾58'52	20.91748 AU	minimum elong	-344 Feb 13 j 09:29	19°☾47'41	0°43'15
retrograde	-352 May 01 j 06:43	21°☾57'24		max. Earth dist.	-344 Feb 14 j 11:39	19°☾51'26	21.07331 AU
min. Earth dist.	-352 Jul 17 j 05:08	20°☾01'03	18.93648 AU	retrograde	-344 Jun 03 j 00:15	23°☾49'07	
opposition	-352 Jul 18 j 07:31	19°☾58'25	0°-36'-11	min. Earth dist.	-344 Aug 19 j 01:30	21°☾52'09	19.07493 AU
direct	-352 Oct 02 j 07:45	18°☾01'46		opposition	-344 Aug 20 j 01:54	21°☾49'42	0°-48'-6
				direct	-344 Nov 03 j 10:20	19°☾53'26	
conjunction	-351 Jan 15 j 21:06	21°☾56'25	0°-33'-45				
minimum elong	-351 Jan 15 j 21:06	21°☾56'25	0°33'46	conjunction	-343 Feb 16 j 14:56	23°☾45'12	0°-43'-48
max. Earth dist.	-351 Jan 16 j 23:46	22°☾00'16	20.95345 AU	minimum elong	-343 Feb 16 j 14:56	23°☾45'12	0°43'49
retrograde	-351 May 05 j 14:40	25°☾58'36		max. Earth dist.	-343 Feb 17 j 16:06	23°☾48'48	21.07463 AU
opposition	-351 Jul 22 j 17:36	23°☾59'37	0°-38'-25	retrograde	-343 Jun 07 j 07:45	27°☾46'48	
min. Earth dist.	-351 Jul 21 j 16:14	24°☾02'10	18.97002 AU	min. Earth dist.	-343 Aug 23 j 09:58	25°☾49'38	19.07443 AU
direct	-351 Oct 06 j 14:53	22°☾03'08		opposition	-343 Aug 24 j 08:48	25°☾47'20	0°-48'-36
				direct	-343 Nov 07 j 14:00	23°☾51'05	
conjunction	-350 Jan 20 j 02:29	25°☾57'06	0°-35'-41				
minimum elong	-350 Jan 20 j 02:29	25°☾57'06	0°35'42	conjunction	-342 Feb 20 j 20:43	27°☾42'56	0°-44'-9
max. Earth dist.	-350 Jan 21 j 05:46	26°☾01'03	20.98440 AU	minimum elong	-342 Feb 20 j 20:43	27°☾42'56	0°44'10
retrograde	-350 May 10 j 00:47	29°☾59'02		max. Earth dist.	-342 Feb 21 j 21:50	27°☾46'31	21.07231 AU
min. Earth dist.	-350 Jul 26 j 00:50	28°☾02'38	18.99830 AU		-342 Apr 04 j 10:00	0°☾	
opposition	-350 Jul 27 j 03:02	28°☾00'01	0°-40'-26	retrograde	-342 Jun 11 j 16:36	1°☾44'44	
direct	-350 Oct 10 j 23:16	26°☾03'37			-342 Aug 22 j 12:57	30°☾	
				opposition	-342 Aug 28 j 15:24	29°☾45'16	0°-48'-53
conjunction	-349 Jan 24 j 07:45	29°☾57'00	0°-37'-26	min. Earth dist.	-342 Aug 27 j 16:18	29°☾47'35	19.07003 AU
minimum elong	-349 Jan 24 j 07:45	29°☾57'00	0°37'26	direct	-342 Nov 11 j 19:30	27°☾49'00	
max. Earth dist.	-349 Jan 25 j 10:19	0°☾00'49	21.01008 AU		-341 Jan 25 j 15:23	0°☾	
	-349 Jan 25 j 04:38	0°☾					
retrograde	-349 May 14 j 07:40	3°☾58'42		conjunction	-341 Feb 25 j 02:54	1°☾41'03	0°-44'-18
min. Earth dist.	-349 Jul 30 j 11:01	2°☾02'06	19.02156 AU	minimum elong	-341 Feb 25 j 02:54	1°☾41'03	0°44'19
opposition	-349 Jul 31 j 11:55	1°☾59'37	0°-42'-15	max. Earth dist.	-341 Feb 26 j 02:41	1°☾44'26	21.06581 AU
direct	-349 Oct 15 j 04:58	0°☾03'16		retrograde	-341 Jun 16 j 00:12	5°☾43'06	
				opposition	-341 Sep 01 j 21:54	3°☾43'37	0°-48'-56
conjunction	-348 Jan 28 j 12:58	3°☾56'08	0°-38'-59	min. Earth dist.	-341 Sep 01 j 00:51	3°☾45'45	19.06140 AU
minimum elong	-348 Jan 28 j 12:58	3°☾56'08	0°39'01	direct	-341 Nov 15 j 23:09	1°☾47'21	
max. Earth dist.	-348 Jan 29 j 16:00	4°☾00'01	21.03095 AU				
retrograde	-348 May 17 j 16:58	7°☾57'39		conjunction	-340 Feb 29 j 09:35	5°☾39'40	0°-44'-14
opposition	-348 Aug 03 j 20:13	5°☾58'29	0°-43'-52	minimum elong	-340 Feb 29 j 09:35	5°☾39'40	0°44'15

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:12, page 5

Attention, astronomical year style is used: The year -340 in astronomical counting style is the year 341 BCE in historical counting style.

max. Earth dist.	-340 Mar 01 j 08:49	5°♃42'59	21.05501 AU	max. Earth dist.	-332 Apr 02 j 19:21	7°♃54'27	20.79153 AU
retrograde	-340 Jun 19 j 09:40	9°♃42'03		retrograde	-332 Jul 22 j 15:04	11°♃59'04	
min. Earth dist.	-340 Sep 04 j 07:27	7°♃44'38	19.04816 AU	opposition	-332 Oct 07 j 10:32	9°♃58'28	0°-38'-51
opposition	-340 Sep 05 j 04:21	7°♃42'32	0°-48'-44	min. Earth dist.	-332 Oct 07 j 01:44	9°♃59'23	18.76697 AU
direct	-340 Nov 19 j 04:45	5°♃46'13		direct	-332 Dec 21 j 02:12	8°♃00'19	
conjunction	-339 Mar 04 j 16:32	9°♃38'54	0°-43'-57	conjunction	-331 Apr 06 j 20:33	11°♃58'31	0°-34'-9
minimum elong	-339 Mar 04 j 16:32	9°♃38'54	0°43'59	minimum elong	-331 Apr 06 j 20:33	11°♃58'31	0°34'09
max. Earth dist.	-339 Mar 05 j 14:05	9°♃41'58	21.03925 AU	max. Earth dist.	-331 Apr 07 j 05:01	11°♃59'44	20.74170 AU
retrograde	-339 Jun 23 j 17:25	13°♃41'38		retrograde	-331 Jul 27 j 01:03	16°♃05'16	
opposition	-339 Sep 09 j 11:03	11°♃42'04	0°-48'-19	opposition	-331 Oct 11 j 18:10	14°♃04'32	0°-36'-37
min. Earth dist.	-339 Sep 08 j 16:30	11°♃43'57	19.02985 AU	min. Earth dist.	-331 Oct 11 j 11:43	14°♃05'12	18.71600 AU
direct	-339 Nov 23 j 08:34	9°♃45'40		direct	-331 Dec 25 j 07:57	12°♃06'05	
conjunction	-338 Mar 09 j 00:17	13°♃38'47	0°-43'-28	conjunction	-330 Apr 11 j 08:57	16°♃05'21	0°-32'-2
minimum elong	-338 Mar 09 j 00:17	13°♃38'47	0°43'28	minimum elong	-330 Apr 11 j 08:57	16°♃05'21	0°32'03
max. Earth dist.	-338 Mar 09 j 20:46	13°♃41'42	21.01837 AU	max. Earth dist.	-330 Apr 11 j 15:43	16°♃06'20	20.68982 AU
retrograde	-338 Jun 28 j 03:43	17°♃41'54		retrograde	-330 Jul 31 j 14:32	20°♃12'48	
opposition	-338 Sep 13 j 17:30	15°♃42'15	0°-47'-39	opposition	-330 Oct 16 j 01:55	18°♃11'56	0°-34'-12
min. Earth dist.	-338 Sep 12 j 23:29	15°♃44'05	19.00617 AU	min. Earth dist.	-330 Oct 15 j 20:09	18°♃12'32	18.66305 AU
direct	-338 Nov 27 j 14:38	13°♃45'42		direct	-330 Dec 29 j 16:32	16°♃13'11	
conjunction	-337 Mar 13 j 08:29	17°♃39'20	0°-42'-45	conjunction	-329 Apr 15 j 22:07	20°♃13'38	0°-29'-45
minimum elong	-337 Mar 13 j 08:29	17°♃39'20	0°42'46	minimum elong	-329 Apr 15 j 22:07	20°♃13'38	0°29'47
max. Earth dist.	-337 Mar 14 j 02:49	17°♃41'57	20.99193 AU	max. Earth dist.	-329 Apr 16 j 03:05	20°♃14'21	20.63584 AU
retrograde	-337 Jul 02 j 11:34	21°♃42'52		retrograde	-329 Aug 05 j 01:44	24°♃21'49	
min. Earth dist.	-337 Sep 17 j 08:48	19°♃44'41	18.97699 AU	opposition	-329 Oct 20 j 10:20	22°♃20'52	0°-31'-35
opposition	-337 Sep 18 j 00:14	19°♃43'06	0°-46'-45	min. Earth dist.	-329 Oct 20 j 07:00	22°♃21'13	18.60810 AU
direct	-337 Dec 01 j 19:01	17°♃46'21		direct	-328 Jan 02 j 23:09	20°♃21'51	
conjunction	-336 Mar 16 j 17:07	21°♃40'33	0°-41'-50	conjunction	-328 Apr 19 j 11:58	24°♃23'31	0°-27'-18
minimum elong	-336 Mar 16 j 17:07	21°♃40'33	0°41'51	minimum elong	-328 Apr 19 j 11:58	24°♃23'31	0°27'19
max. Earth dist.	-336 Mar 17 j 10:07	21°♃42'58	20.96025 AU	max. Earth dist.	-328 Apr 19 j 14:57	24°♃23'57	20.58007 AU
retrograde	-336 Jul 05 j 22:11	25°♃44'31		retrograde	-328 Aug 08 j 16:24	28°♃32'30	
opposition	-336 Sep 21 j 06:49	23°♃44'36	0°-45'-37	opposition	-328 Oct 23 j 19:05	26°♃31'28	0°-28'-47
min. Earth dist.	-336 Sep 20 j 15:58	23°♃46'07	18.94273 AU	min. Earth dist.	-328 Oct 23 j 16:40	26°♃31'44	18.55129 AU
direct	-336 Dec 05 j 01:27	21°♃47'37		direct	-327 Jan 06 j 08:48	24°♃32'11	
conjunction	-335 Mar 21 j 02:13	25°♃42'27	0°-40'-42	conjunction	-327 Apr 24 j 02:51	28°♃35'10	0°-24'-41
minimum elong	-335 Mar 21 j 02:14	25°♃42'27	0°40'43	minimum elong	-327 Apr 24 j 02:51	28°♃35'10	0°24'43
max. Earth dist.	-335 Mar 21 j 17:13	25°♃44'35	20.92367 AU	max. Earth dist.	-327 Apr 24 j 04:01	28°♃35'20	20.52220 AU
retrograde	-335 Jul 10 j 06:36	29°♃46'53			-327 May 18 j 21:31	0°♁	
opposition	-335 Sep 25 j 13:38	27°♃46'48	0°-44'-16	retrograde	-327 Aug 13 j 05:14	2°♁44'58	
min. Earth dist.	-335 Sep 25 j 01:18	27°♃48'03	18.90399 AU	opposition	-327 Oct 28 j 04:25	0°♁43'53	0°-25'-48
direct	-335 Dec 09 j 06:22	25°♃49'32		min. Earth dist.	-327 Oct 28 j 04:38	0°♁43'52	18.49234 AU
conjunction	-334 Mar 25 j 11:55	29°♃45'05	0°-39'-21		-327 Nov 14 j 23:32	30°♁♃	
minimum elong	-334 Mar 25 j 11:55	29°♃45'05	0°39'23	direct	-326 Jan 10 j 16:50	28°♃44'18	
max. Earth dist.	-334 Mar 26 j 01:33	29°♃47'01	20.88306 AU		-326 Mar 06 j 20:38	0°♁	
retrograde	-334 Mar 29 j 20:16	0°♃		conjunction	-326 Apr 28 j 18:41	2°♁48'40	0°-21'-55
opposition	-334 Jul 14 j 17:47	3°♃50'01		minimum elong	-326 Apr 28 j 18:41	2°♁48'40	0°21'55
min. Earth dist.	-334 Sep 29 j 20:23	1°♃49'45	0°-42'-40	max. Earth dist.	-326 Apr 28 j 17:15	2°♁48'28	20.46221 AU
direct	-334 Sep 29 j 08:39	1°♃50'58	18.86143 AU	retrograde	-326 Aug 17 j 20:57	6°♁59'18	
conjunction	-334 Nov 26 j 03:18	30°♁♃		opposition	-326 Nov 01 j 14:17	4°♁58'09	0°-22'-40
retrograde	-334 Dec 13 j 13:17	29°♃52'12		min. Earth dist.	-326 Nov 01 j 15:51	4°♁57'59	18.43108 AU
opposition	-334 Dec 30 j 18:32	0°♃		direct	-325 Jan 15 j 03:41	2°♁58'15	
conjunction	-333 Mar 29 j 22:12	3°♃48'33	0°-37'-49	conjunction	-325 May 03 j 11:28	7°♁04'03	0°-19'00
minimum elong	-333 Mar 29 j 22:12	3°♃48'33	0°37'49	minimum elong	-325 May 03 j 11:28	7°♁04'03	0°19'01
max. Earth dist.	-333 Mar 30 j 09:53	3°♃50'13	20.83873 AU	max. Earth dist.	-325 May 03 j 08:04	7°♁03'34	20.39955 AU
retrograde	-333 Jul 19 j 02:52	7°♃54'02		retrograde	-325 Aug 22 j 11:11	11°♁15'31	
opposition	-333 Oct 04 j 03:21	5°♃53'36	0°-40'-52	opposition	-325 Nov 06 j 00:49	9°♁14'17	0°-19'-22
min. Earth dist.	-333 Oct 03 j 18:03	5°♃54'33	18.81553 AU	min. Earth dist.	-325 Nov 06 j 05:02	9°♁13'50	18.36717 AU
direct	-333 Dec 17 j 18:33	3°♃55'44		direct	-324 Jan 19 j 13:51	7°♁14'01	
conjunction	-332 Apr 02 j 09:08	7°♃52'59	0°-36'-4	conjunction	-324 May 07 j 05:02	11°♁21'17	0°-15'-58
minimum elong	-332 Apr 02 j 09:08	7°♃52'59	0°36'05	minimum elong	-324 May 07 j 05:02	11°♁21'17	0°15'59

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:12, page 6

Attention, astronomical year style is used: The year -324 in astronomical counting style is the year 325 BCE in historical counting style.

max. Earth dist.	-324 May 06 j 22:39	11°♃20'21	20.33456 AU	max. Earth dist.	-318 Jun 03 j 12:23	7°♃38'30	19.92391 AU
	-324 Jul 20 j 16:50	15°♃		retrograde	-318 Sep 22 j 08:27	11°♃58'20	
retrograde	-324 Aug 26 j 03:25	15°♃33'35		opposition	-318 Dec 05 j 19:28	9°♃56'05	0°06'20
	-324 Oct 01 j 20:22	15°♃		min. Earth dist.	-318 Dec 06 j 11:12	9°♃54'23	17.89114 AU
opposition	-324 Nov 09 j 11:54	13°♃32'13	0°-15'-56	direct	-317 Feb 18 j 20:03	7°♃52'48	
min. Earth dist.	-324 Nov 09 j 17:32	13°♃31'37	18.30105 AU	max. Earth dist.	-317 Jun 08 j 11:04	12°♃07'48	19.85901 AU
direct	-323 Jan 23 j 01:59	11°♃31'34					
	-323 Apr 30 j 12:39	15°♃		conjunction	-317 Jun 09 j 06:14	12°♃10'41	0°07'27
				minimum elong	-317 Jun 09 j 06:14	12°♃10'41	0°07'27
conjunction	-323 May 11 j 23:28	15°♃40'19	0°-12'-49	behind sun begin	-317 Jun 09 j 00:04	12°♃09'46	
minimum elong	-323 May 11 j 23:28	15°♃40'19	0°12'50	behind sun end	-317 Jun 09 j 12:24	12°♃11'35	
behind sun begin	-323 May 11 j 19:24	15°♃39'44		retrograde	-317 Sep 27 j 03:44	16°♃28'25	
behind sun end	-323 May 12 j 03:32	15°♃40'54		opposition	-317 Dec 10 j 11:09	14°♃26'06	0°10'07
max. Earth dist.	-323 May 11 j 15:22	15°♃39'08	20.26735 AU	min. Earth dist.	-317 Dec 11 j 03:51	14°♃24'18	17.82759 AU
retrograde	-323 Aug 30 j 18:53	19°♃53'25		direct	-316 Feb 23 j 13:46	12°♃22'26	
opposition	-323 Nov 13 j 23:41	17°♃51'55	0°-12'-23	max. Earth dist.	-316 Jun 12 j 08:05	16°♃38'33	19.79696 AU
min. Earth dist.	-323 Nov 14 j 07:45	17°♃51'04	18.23294 AU				
direct	-322 Jan 27 j 14:38	15°♃50'52		conjunction	-316 Jun 13 j 05:48	16°♃41'49	0°10'50
				minimum elong	-316 Jun 13 j 05:47	16°♃41'49	0°10'51
conjunction	-322 May 16 j 18:44	20°♃01'06	0°-9'-35	behind sun begin	-316 Jun 13 j 00:42	16°♃41'04	
minimum elong	-322 May 16 j 18:44	20°♃01'06	0°09'36	behind sun end	-316 Jun 13 j 10:52	16°♃42'34	
behind sun begin	-322 May 16 j 13:11	20°♃00'18		retrograde	-316 Sep 30 j 23:30	21°♃00'18	
behind sun end	-322 May 17 j 00:17	20°♃01'54		opposition	-316 Dec 14 j 03:34	18°♃57'55	0°13'53
max. Earth dist.	-322 May 16 j 07:32	19°♃59'27	20.19866 AU	min. Earth dist.	-316 Dec 14 j 21:37	18°♃55'58	17.76720 AU
retrograde	-322 Sep 04 j 11:05	24°♃15'01		direct	-315 Feb 27 j 07:52	16°♃53'54	
opposition	-322 Nov 18 j 11:51	22°♃13'21	0°-8'-45	max. Earth dist.	-315 Jun 17 j 08:27	21°♃11'30	19.73809 AU
min. Earth dist.	-322 Nov 18 j 21:24	22°♃12'20	18.16376 AU				
direct	-321 Feb 01 j 04:20	20°♃11'50		conjunction	-315 Jun 18 j 06:16	21°♃14'48	0°14'11
				minimum elong	-315 Jun 18 j 06:15	21°♃14'48	0°14'11
conjunction	-321 May 21 j 14:53	24°♃23'36	0°-6'-17	behind sun begin	-315 Jun 18 j 03:12	21°♃14'21	
minimum elong	-321 May 21 j 14:53	24°♃23'36	0°06'17	behind sun end	-315 Jun 18 j 09:18	21°♃15'15	
behind sun begin	-321 May 21 j 08:29	24°♃22'41		retrograde	-315 Oct 05 j 20:53	25°♃33'58	
behind sun end	-321 May 21 j 21:17	24°♃24'32		opposition	-315 Dec 18 j 20:48	23°♃31'36	0°17'35
max. Earth dist.	-321 May 21 j 02:25	24°♃21'46	20.12911 AU	min. Earth dist.	-315 Dec 19 j 15:32	23°♃29'34	17.70986 AU
retrograde	-321 Sep 09 j 03:45	28°♃38'18		direct	-314 Mar 04 j 03:17	21°♃27'17	
opposition	-321 Nov 23 j 00:49	26°♃36'29	0°-5'-2	max. Earth dist.	-314 Jun 22 j 07:09	25°♃45'58	19.68232 AU
min. Earth dist.	-321 Nov 23 j 12:21	26°♃35'15	18.09413 AU				
direct	-320 Feb 05 j 19:05	24°♃34'32		conjunction	-314 Jun 23 j 07:19	25°♃49'38	0°17'28
				minimum elong	-314 Jun 23 j 07:19	25°♃49'38	0°17'28
conjunction	-320 May 25 j 11:25	28°♃47'48	0°-2'-55				
minimum elong	-320 May 25 j 11:25	28°♃47'48	0°02'56	retrograde	-314 Sep 22 j 04:04	0°♃	
behind sun begin	-320 May 25 j 04:40	28°♃46'49					
behind sun end	-320 May 25 j 18:11	28°♃48'47		opposition	-314 Dec 23 j 14:51	28°♃07'08	0°21'11
max. Earth dist.	-320 May 24 j 20:05	28°♃45'32	20.05966 AU	min. Earth dist.	-314 Dec 24 j 11:13	28°♃04'55	17.65577 AU
	-320 Jun 14 j 22:04	0°♃		direct	-313 Mar 08 j 22:31	26°♃02'31	
retrograde	-320 Sep 12 j 20:30	3°♃03'18					
opposition	-320 Nov 26 j 14:22	1°♃01'19	0°-1'-16	max. Earth dist.	-313 Jun 27 j 08:49	0°♃22'36	19.62967 AU
min. Earth dist.	-320 Nov 27 j 03:15	0°♃59'56	18.02506 AU				
	-320 Dec 21 j 11:49	30°♃		conjunction	-313 Jun 28 j 09:10	0°♃26'19	0°20'39
direct	-319 Feb 09 j 10:41	28°♃58'54		minimum elong	-313 Jun 28 j 09:09	0°♃26'19	0°20'40
	-319 Mar 30 j 10:08	0°♃		retrograde	-313 Oct 15 j 16:56	4°♃46'48	
asc. node	-319 Mar 31 j 09:56	0°♃02'22		opposition	-313 Dec 28 j 09:46	2°♃44'28	0°24'42
				min. Earth dist.	-313 Dec 29 j 06:33	2°♃42'12	17.60459 AU
conjunction	-319 May 30 j 09:02	3°♃13'42	0°00'35	direct	-312 Mar 12 j 20:11	0°♃39'35	
minimum elong	-319 May 30 j 09:02	3°♃13'42	0°00'35	max. Earth dist.	-312 Jul 01 j 08:59	5°♃00'41	19.57987 AU
behind sun begin	-319 May 30 j 02:16	3°♃12'43					
behind sun end	-319 May 30 j 15:48	3°♃14'41		conjunction	-312 Jul 02 j 11:19	5°♃04'44	0°23'44
max. Earth dist.	-319 May 29 j 16:58	3°♃11'19	19.99099 AU	minimum elong	-312 Jul 02 j 11:19	5°♃04'43	0°23'44
retrograde	-319 Sep 17 j 14:12	7°♃29'57		retrograde	-312 Oct 19 j 14:16	9°♃25'47	
opposition	-319 Dec 01 j 04:30	5°♃27'50	0°02'31	opposition	-311 Jan 01 j 05:33	7°♃23'28	0°28'04
min. Earth dist.	-319 Dec 01 j 18:56	5°♃26'17	17.95709 AU	min. Earth dist.	-311 Jan 02 j 04:07	7°♃21'00	17.55635 AU
direct	-318 Feb 14 j 02:54	3°♃24'59		direct	-311 Mar 17 j 16:49	5°♃18'19	
				max. Earth dist.	-311 Jul 06 j 11:30	9°♃40'36	19.53300 AU
conjunction	-318 Jun 04 j 07:16	7°♃41'19	0°04'03				
minimum elong	-318 Jun 04 j 07:15	7°♃41'19	0°04'04	conjunction	-311 Jul 07 j 14:15	9°♃44'43	0°26'41
behind sun begin	-318 Jun 04 j 00:34	7°♃40'21		minimum elong	-311 Jul 07 j 14:15	9°♃44'43	0°26'42
behind sun end	-318 Jun 04 j 13:57	7°♃42'18		retrograde	-311 Oct 24 j 14:28	14°♃06'16	

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:12, page 7

Attention, astronomical year style is used: The year -310 in astronomical counting style is the year 311 BCE in historical counting style.

opposition	-310 Jan 06 j 01:53	12°♄03'57	0°31'16	minimum elong	-303 Aug 15 j 18:14	17°♃40'07	0°42'36
min. Earth dist.	-310 Jan 07 j 00:35	12°♄01'29	17.51091 AU	max. Earth dist.	-303 Aug 14 j 14:49	17°♃35'48	19.30566 AU
direct	-310 Mar 22 j 16:50	9°♄58'33		retrograde	-303 Dec 01 j 09:21	22°♃03'11	
conjunction	-310 Jul 12 j 17:32	14°♄26'07	0°29'28	opposition	-302 Feb 12 j 19:14	20°♃00'54	0°47'59
minimum elong	-310 Jul 12 j 17:32	14°♄26'07	0°29'27	min. Earth dist.	-302 Feb 13 j 17:51	19°♃58'26	17.30411 AU
max. Earth dist.	-310 Jul 11 j 13:21	14°♄21'46	19.48902 AU	direct	-302 Apr 30 j 08:14	17°♃54'13	
retrograde	-310 Oct 29 j 12:06	18°♄48'06		conjunction	-302 Aug 20 j 21:19	22°♃26'37	0°43'23
opposition	-309 Jan 10 j 23:12	16°♄45'47	0°34'16	minimum elong	-302 Aug 20 j 21:19	22°♃26'37	0°43'23
min. Earth dist.	-309 Jan 11 j 23:34	16°♄43'07	17.46869 AU	max. Earth dist.	-302 Aug 19 j 20:09	22°♃22'39	19.30318 AU
direct	-309 Mar 27 j 15:08	14°♄40'07		retrograde	-302 Dec 06 j 09:25	26°♃49'34	
conjunction	-309 Jul 17 j 20:55	19°♄08'44	0°32'03	opposition	-301 Feb 17 j 20:35	24°♃47'24	0°48'42
minimum elong	-309 Jul 17 j 20:55	19°♄08'44	0°32'04	min. Earth dist.	-301 Feb 18 j 18:47	24°♃44'59	17.30484 AU
max. Earth dist.	-309 Jul 16 j 16:20	19°♄04'18	19.44851 AU	direct	-301 May 05 j 10:34	22°♃40'49	
retrograde	-309 Nov 03 j 12:42	23°♄31'06		conjunction	-301 Aug 25 j 23:44	27°♃13'12	0°43'53
opposition	-308 Jan 15 j 21:00	21°♄28'45	0°37'03	minimum elong	-301 Aug 25 j 23:44	27°♃13'12	0°43'54
min. Earth dist.	-308 Jan 16 j 20:56	21°♄26'08	17.43002 AU	max. Earth dist.	-301 Aug 24 j 22:44	27°♃09'15	19.30720 AU
direct	-308 Mar 31 j 17:02	19°♄22'51		retrograde	-301 Oct 12 j 09:45	0°♃	
max. Earth dist.	-308 Jul 20 j 19:36	23°♄47'53	19.41177 AU	retrograde	-301 Dec 11 j 10:21	1°♃36'00	
conjunction	-308 Jul 22 j 00:36	23°♄52'24	0°34'26	retrograde	-300 Feb 12 j 20:09	30°♃	
minimum elong	-308 Jul 22 j 00:36	23°♄52'24	0°34'27	opposition	-300 Feb 22 j 22:08	29°♃33'58	0°49'06
retrograde	-308 Nov 07 j 10:23	28°♄15'03		min. Earth dist.	-300 Feb 23 j 18:56	29°♃31'43	17.31196 AU
opposition	-307 Jan 19 j 19:25	26°♄12'41	0°39'36	direct	-300 May 09 j 13:53	27°♃27'30	
min. Earth dist.	-307 Jan 20 j 20:45	26°♄09'55	17.39552 AU	retrograde	-300 Jul 28 j 09:25	0°♃	
direct	-307 Apr 05 j 16:45	24°♄06'33		max. Earth dist.	-300 Aug 29 j 03:33	1°♃56'11	19.31726 AU
max. Earth dist.	-307 Jul 25 j 22:55	28°♄32'19	19.37956 AU	conjunction	-300 Aug 30 j 02:08	1°♃59'45	0°44'05
conjunction	-307 Jul 27 j 04:21	28°♄36'54	0°36'36	minimum elong	-300 Aug 30 j 02:08	1°♃59'45	0°44'05
minimum elong	-307 Jul 27 j 04:21	28°♄36'54	0°36'36	retrograde	-300 Dec 15 j 10:47	6°♃22'18	
retrograde	-307 Aug 18 j 16:24	0°♃		opposition	-299 Feb 26 j 23:53	4°♃20'26	0°49'09
opposition	-307 Nov 12 j 11:08	2°♃59'46		min. Earth dist.	-299 Feb 27 j 19:55	4°♃18'16	17.32471 AU
min. Earth dist.	-306 Jan 24 j 18:21	0°♃57'23	0°41'52	direct	-299 May 14 j 16:59	2°♃14'08	
direct	-306 Jan 25 j 18:50	0°♃54'42	17.36566 AU	max. Earth dist.	-299 Sep 03 j 05:41	6°♃42'35	19.33274 AU
retrograde	-306 Feb 16 j 11:36	30°♃		conjunction	-299 Sep 04 j 04:01	6°♃46'06	0°43'59
opposition	-306 Jan 24 j 18:21	0°♃57'23	0°41'52	minimum elong	-299 Sep 04 j 04:01	6°♃46'06	0°43'59
min. Earth dist.	-306 Jan 25 j 18:50	0°♃54'42	17.36566 AU	retrograde	-299 Dec 20 j 10:48	11°♃08'22	
direct	-306 Apr 10 j 20:31	28°♄51'03		opposition	-298 Mar 04 j 02:01	9°♃06'37	0°48'52
max. Earth dist.	-306 Jul 31 j 03:21	3°♃17'35	19.35216 AU	min. Earth dist.	-298 Mar 04 j 20:57	9°♃04'34	17.34280 AU
conjunction	-306 Aug 01 j 08:07	3°♃22'05	0°38'30	direct	-298 May 19 j 20:48	7°♃00'30	
minimum elong	-306 Aug 01 j 08:06	3°♃22'05	0°38'31	max. Earth dist.	-298 Sep 08 j 09:27	11°♃28'52	19.35326 AU
retrograde	-306 Nov 17 j 08:57	7°♃45'06		conjunction	-298 Sep 09 j 05:25	11°♃32'01	0°43'35
opposition	-305 Jan 29 j 17:59	5°♃42'42	0°43'52	minimum elong	-298 Sep 09 j 05:25	11°♃32'01	0°43'35
min. Earth dist.	-305 Jan 30 j 19:18	5°♃39'56	17.34103 AU	retrograde	-298 Dec 25 j 10:37	15°♃53'53	
direct	-305 Apr 15 j 21:48	3°♃36'12		opposition	-297 Mar 09 j 04:19	13°♃52'17	0°48'14
max. Earth dist.	-305 Aug 05 j 06:40	8°♃03'13	19.33044 AU	min. Earth dist.	-297 Mar 09 j 21:50	13°♃50'24	17.36552 AU
conjunction	-305 Aug 06 j 11:38	8°♃07'46	0°40'08	direct	-297 May 25 j 01:21	11°♃46'23	
minimum elong	-305 Aug 06 j 11:38	8°♃07'46	0°40'08	max. Earth dist.	-297 Sep 13 j 10:56	16°♃14'15	19.37827 AU
retrograde	-305 Nov 22 j 09:40	12°♃30'52		conjunction	-297 Sep 14 j 06:13	16°♃17'18	0°42'52
opposition	-304 Feb 03 j 17:55	10°♃28'28	0°45'33	minimum elong	-297 Sep 14 j 06:13	16°♃17'18	0°42'52
min. Earth dist.	-304 Feb 04 j 17:54	10°♃25'51	17.32234 AU	retrograde	-297 Dec 30 j 09:20	20°♃38'43	
direct	-304 Apr 20 j 02:10	8°♃21'50		opposition	-296 Mar 13 j 06:33	18°♃37'12	0°47'17
max. Earth dist.	-304 Aug 09 j 11:45	12°♃49'31	19.31478 AU	min. Earth dist.	-296 Mar 13 j 23:10	18°♃35'25	17.39277 AU
conjunction	-304 Aug 10 j 15:03	12°♃53'48	0°41'31	direct	-296 May 29 j 05:00	16°♃31'30	
minimum elong	-304 Aug 10 j 15:03	12°♃53'48	0°41'31	conjunction	-296 Sep 18 j 06:27	21°♃01'42	0°41'53
retrograde	-304 Sep 14 j 08:38	15°♃		minimum elong	-296 Sep 18 j 06:27	21°♃01'42	0°41'53
opposition	-303 Feb 07 j 18:29	15°♃14'33	0°46'55	max. Earth dist.	-296 Sep 17 j 13:14	20°♃58'59	19.40761 AU
min. Earth dist.	-303 Feb 08 j 18:38	15°♃11'55	17.30989 AU	retrograde	-295 Jan 03 j 08:26	25°♃22'34	
direct	-303 Feb 13 j 08:11	15°♃		opposition	-295 Mar 18 j 08:45	23°♃21'10	0°46'01
retrograde	-303 Nov 26 j 08:32	17°♃16'55		min. Earth dist.	-295 Mar 18 j 23:25	23°♃19'36	17.42393 AU
opposition	-303 Feb 07 j 18:29	15°♃14'33	0°46'55	direct	-295 Jun 03 j 10:09	21°♃15'42	
min. Earth dist.	-303 Feb 08 j 18:38	15°♃11'55	17.30989 AU	conjunction	-295 Sep 23 j 05:54	25°♃45'01	0°40'36
direct	-303 Apr 25 j 04:22	13°♃07'53					
retrograde	-303 Jul 01 j 12:17	15°♃					
conjunction	-303 Aug 15 j 18:14	17°♃40'07	0°42'36				

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:12, page 8

Attention, astronomical year style is used: The year -295 in astronomical counting style is the year 296 BCE in historical counting style.

minimum elong	-295 Sep 23 j 05:54	25° $\mathring{M}$ 45'01	0°40'35			-287 Sep 14 j 13:59	0° $\mathring{M}$	
max. Earth dist.	-295 Sep 22 j 13:57	25° $\mathring{M}$ 42'30	19.44075 AU					
	-295 Dec 25 j 12:16	0° $\mathring{A}$		conjunction		-287 Oct 29 j 17:55	2° $\mathring{M}$ 36'18	0°22'10
retrograde	-294 Jan 08 j 05:52	0° $\mathring{A}$ 05'18		minimum elong		-287 Oct 29 j 17:55	2° $\mathring{M}$ 36'18	0°22'10
	-294 Jan 22 j 04:01	30° $\mathring{R}$ $\mathring{M}$		max. Earth dist.		-287 Oct 29 j 20:11	2° $\mathring{M}$ 36'38	19.84901 AU
opposition	-294 Mar 23 j 10:53	28° $\mathring{M}$ 03'59	0°44'26	retrograde		-286 Feb 13 j 22:49	6° $\mathring{M}$ 50'36	
min. Earth dist.	-294 Mar 24 j 00:44	28° $\mathring{M}$ 02'31	17.45905 AU	opposition		-286 Apr 30 j 13:56	4° $\mathring{M}$ 50'13	0°22'58
direct	-294 Jun 08 j 13:02	25° $\mathring{M}$ 58'45		min. Earth dist.		-286 Apr 30 j 11:21	4° $\mathring{M}$ 50'29	17.88167 AU
	-294 Sep 21 j 00:35	0° $\mathring{A}$		direct		-286 Jul 16 j 18:02	2° $\mathring{M}$ 47'44	
conjunction	-294 Sep 28 j 04:35	0° $\mathring{A}$ 27'03	0°39'03	conjunction		-286 Nov 03 j 09:30	7° $\mathring{M}$ 05'18	0°19'08
minimum elong	-294 Sep 28 j 04:35	0° $\mathring{A}$ 27'03	0°39'03	minimum elong		-286 Nov 03 j 09:30	7° $\mathring{M}$ 05'17	0°19'09
max. Earth dist.	-294 Sep 27 j 14:36	0° $\mathring{A}$ 24'51	19.47791 AU	max. Earth dist.		-286 Nov 03 j 12:55	7° $\mathring{M}$ 05'49	19.91517 AU
retrograde	-293 Jan 13 j 04:24	4° $\mathring{A}$ 46'42		retrograde		-285 Feb 18 j 17:47	11° $\mathring{M}$ 18'49	
opposition	-293 Mar 28 j 12:42	2° $\mathring{A}$ 45'27	0°42'33	opposition		-285 May 05 j 11:59	9° $\mathring{M}$ 18'35	0°19'31
min. Earth dist.	-293 Mar 29 j 00:00	2° $\mathring{A}$ 44'15	17.49800 AU	min. Earth dist.		-285 May 05 j 06:38	9° $\mathring{M}$ 19'09	17.94862 AU
direct	-293 Jun 13 j 17:26	0° $\mathring{A}$ 40'27		direct		-285 Jul 21 j 16:34	7° $\mathring{M}$ 16'34	
conjunction	-293 Oct 03 j 02:16	5° $\mathring{A}$ 07'38	0°37'15	conjunction		-285 Nov 08 j 00:22	11° $\mathring{M}$ 32'37	0°16'00
minimum elong	-293 Oct 03 j 02:16	5° $\mathring{A}$ 07'38	0°37'15	minimum elong		-285 Nov 08 j 00:22	11° $\mathring{M}$ 32'37	0°15'59
max. Earth dist.	-293 Oct 02 j 14:21	5° $\mathring{A}$ 05'46	19.51885 AU	behind sun begin		-285 Nov 07 j 23:06	11° $\mathring{M}$ 32'26	
retrograde	-292 Jan 18 j 00:40	9° $\mathring{A}$ 26'35		behind sun end		-285 Nov 08 j 01:38	11° $\mathring{M}$ 32'49	
opposition	-292 Apr 01 j 14:17	7° $\mathring{A}$ 25'23	0°40'24	max. Earth dist.		-285 Nov 08 j 06:50	11° $\mathring{M}$ 33'36	19.98261 AU
min. Earth dist.	-292 Apr 02 j 00:43	7° $\mathring{A}$ 24'17	17.54093 AU			-284 Jan 12 j 17:26	15° $\mathring{M}$	
direct	-292 Jun 17 j 18:53	5° $\mathring{A}$ 20'38		retrograde		-284 Feb 23 j 10:23	15° $\mathring{M}$ 45'20	
						-284 Apr 06 j 18:20	15° $\mathring{R}$ $\mathring{M}$	
conjunction	-292 Oct 06 j 23:06	9° $\mathring{A}$ 46'36	0°35'12	opposition		-284 May 09 j 09:33	13° $\mathring{M}$ 45'17	0°15'58
minimum elong	-292 Oct 06 j 23:06	9° $\mathring{A}$ 46'36	0°35'12	min. Earth dist.		-284 May 09 j 03:05	13° $\mathring{M}$ 45'57	18.01637 AU
max. Earth dist.	-292 Oct 06 j 13:03	9° $\mathring{A}$ 45'02	19.56387 AU	direct		-284 Jul 25 j 13:10	11° $\mathring{M}$ 43'43	
retrograde	-291 Jan 21 j 22:19	14° $\mathring{A}$ 04'48				-284 Oct 26 j 15:15	15° $\mathring{M}$	
opposition	-291 Apr 06 j 15:13	12° $\mathring{A}$ 03'41	0°37'59	conjunction		-284 Nov 11 j 14:20	15° $\mathring{M}$ 58'13	0°12'47
min. Earth dist.	-291 Apr 06 j 22:40	12° $\mathring{A}$ 02'54	17.58789 AU	minimum elong		-284 Nov 11 j 14:20	15° $\mathring{M}$ 58'13	0°12'46
direct	-291 Jun 22 j 22:08	9° $\mathring{A}$ 59'12		behind sun begin		-284 Nov 11 j 10:08	15° $\mathring{M}$ 57'36	
				behind sun end		-284 Nov 11 j 18:31	15° $\mathring{M}$ 58'51	
conjunction	-291 Oct 11 j 19:06	14° $\mathring{A}$ 23'54	0°32'57	max. Earth dist.		-284 Nov 11 j 21:34	15° $\mathring{M}$ 59'19	20.05055 AU
minimum elong	-291 Oct 11 j 19:06	14° $\mathring{A}$ 23'54	0°32'57	retrograde		-283 Feb 27 j 03:24	20° $\mathring{M}$ 10'08	
max. Earth dist.	-291 Oct 11 j 11:46	14° $\mathring{A}$ 22'45	19.61295 AU	opposition		-283 May 14 j 06:23	18° $\mathring{M}$ 10'13	0°12'21
retrograde	-290 Jan 26 j 17:24	18° $\mathring{A}$ 41'20		min. Earth dist.		-283 May 13 j 21:35	18° $\mathring{M}$ 11'08	18.08434 AU
opposition	-290 Apr 11 j 16:05	16° $\mathring{A}$ 40'19	0°35'22	direct		-283 Jul 30 j 09:56	16° $\mathring{M}$ 09'05	
min. Earth dist.	-290 Apr 11 j 22:22	16° $\mathring{A}$ 39'39	17.63913 AU	conjunction		-283 Nov 16 j 03:45	20° $\mathring{M}$ 22'04	0°09'31
direct	-290 Jun 27 j 21:48	14° $\mathring{A}$ 36'09		minimum elong		-283 Nov 16 j 03:45	20° $\mathring{M}$ 22'04	0°09'30
				behind sun begin		-283 Nov 15 j 22:15	20° $\mathring{M}$ 21'15	
conjunction	-290 Oct 16 j 13:59	18° $\mathring{A}$ 59'29	0°30'30	behind sun end		-283 Nov 16 j 09:14	20° $\mathring{M}$ 22'53	
minimum elong	-290 Oct 16 j 13:59	18° $\mathring{A}$ 59'29	0°30'29	max. Earth dist.		-283 Nov 16 j 13:48	20° $\mathring{M}$ 23'35	20.11828 AU
max. Earth dist.	-290 Oct 16 j 08:28	18° $\mathring{A}$ 58'37	19.66641 AU	retrograde		-282 Mar 03 j 18:56	24° $\mathring{M}$ 33'09	
retrograde	-289 Jan 31 j 14:36	23° $\mathring{A}$ 16'09		opposition		-282 May 19 j 02:44	22° $\mathring{M}$ 33'22	0°08'40
opposition	-289 Apr 16 j 16:17	21° $\mathring{A}$ 15'14	0°32'31	min. Earth dist.		-282 May 18 j 16:42	22° $\mathring{M}$ 34'23	18.15170 AU
min. Earth dist.	-289 Apr 16 j 19:14	21° $\mathring{A}$ 14'56	17.69460 AU	direct		-282 Aug 04 j 05:39	20° $\mathring{M}$ 32'37	
direct	-289 Jul 02 j 23:17	19° $\mathring{A}$ 11'27		conjunction		-282 Nov 20 j 16:07	24° $\mathring{M}$ 44'02	0°06'13
				minimum elong		-282 Nov 20 j 16:08	24° $\mathring{M}$ 44'02	0°06'12
conjunction	-289 Oct 21 j 08:13	23° $\mathring{A}$ 33'23	0°27'53	behind sun begin		-282 Nov 20 j 09:55	24° $\mathring{M}$ 43'07	
minimum elong	-289 Oct 21 j 08:13	23° $\mathring{A}$ 33'23	0°27'53	behind sun end		-282 Nov 20 j 22:20	24° $\mathring{M}$ 44'58	
max. Earth dist.	-289 Oct 21 j 05:49	23° $\mathring{A}$ 33'01	19.72389 AU	max. Earth dist.		-282 Nov 21 j 02:43	24° $\mathring{M}$ 45'38	20.18519 AU
retrograde	-288 Feb 05 j 08:47	27° $\mathring{A}$ 49'16		retrograde		-281 Mar 08 j 09:53	28° $\mathring{M}$ 54'20	
opposition	-288 Apr 20 j 15:58	25° $\mathring{A}$ 48'31	0°29'30	opposition		-281 May 23 j 22:17	26° $\mathring{M}$ 54'38	0°04'59
min. Earth dist.	-288 Apr 20 j 17:44	25° $\mathring{A}$ 48'20	17.75395 AU	min. Earth dist.		-281 May 23 j 10:22	26° $\mathring{M}$ 55'50	18.21808 AU
direct	-288 Jul 06 j 21:07	23° $\mathring{A}$ 45'08		direct		-281 Aug 09 j 00:09	24° $\mathring{M}$ 54'14	
				conjunction		-281 Nov 25 j 04:03	29° $\mathring{M}$ 04'08	0°02'53
conjunction	-288 Oct 25 j 01:29	28° $\mathring{A}$ 05'39	0°25'06	minimum elong		-281 Nov 25 j 04:02	29° $\mathring{M}$ 04'08	0°02'53
minimum elong	-288 Oct 25 j 01:29	28° $\mathring{A}$ 05'39	0°25'06	behind sun begin		-281 Nov 24 j 21:31	29° $\mathring{M}$ 03'10	
max. Earth dist.	-288 Oct 25 j 00:30	28° $\mathring{A}$ 05'30	19.78505 AU	behind sun end		-281 Nov 25 j 10:33	29° $\mathring{M}$ 05'05	
	-288 Nov 25 j 19:25	0° $\mathring{M}$		max. Earth dist.		-281 Nov 25 j 17:11	29° $\mathring{M}$ 06'07	20.25081 AU
retrograde	-287 Feb 09 j 05:08	2° $\mathring{M}$ 20'45				-281 Dec 10 j 15:29	0° $\mathring{A}$	
opposition	-287 Apr 25 j 15:06	0° $\mathring{M}$ 20'10	0°26'18	conjunction				
min. Earth dist.	-287 Apr 25 j 13:44	0° $\mathring{M}$ 20'19	17.81657 AU	minimum elong				
	-287 May 03 j 17:49	30° $\mathring{R}$ $\mathring{A}$		behind sun begin				
direct	-287 Jul 11 j 21:02	28° $\mathring{A}$ 17'14		behind sun end				



Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:12, page 9

Attention, astronomical year style is used: The year -280 in astronomical counting style is the year 281 BCE in historical counting style.

retrograde	-280 Mar 12 j 00:00	3°♄13'35		minimum elong	-274 Dec 23 j 18:11	28°♄32'39	0°19'18
opposition	-280 May 27 j 16:53	1°♄13'57	0°01'17	max. Earth dist.	-274 Dec 24 j 16:52	28°♄36'00	20.67402 AU
min. Earth dist.	-280 May 27 j 03:44	1°♄15'17	18.28289 AU		-273 Jan 17 j 22:54	0°♄	
	-280 Jun 29 j 08:12	30°♄		retrograde	-273 Apr 11 j 12:29	2°♄37'18	
direct	-280 Aug 12 j 18:16	29°♄13'54		min. Earth dist.	-273 Jun 27 j 07:38	0°♄40'19	18.70168 AU
	-280 Sep 24 j 10:09	0°♄		opposition	-273 Jun 28 j 06:31	0°♄38'01	0°-22'-54
desc. node	-280 Oct 03 j 03:41	0°♄19'58			-273 Jul 14 j 08:03	30°♄	
				direct	-273 Sep 12 j 17:34	28°♄40'06	
conjunction	-280 Nov 28 j 14:57	3°♄22'15	0°00'-31		-273 Nov 08 j 18:40	0°♄	
minimum elong	-280 Nov 28 j 14:57	3°♄22'15	0°00'32				
behind sun begin	-280 Nov 28 j 08:26	3°♄21'18		conjunction	-273 Dec 28 j 01:06	2°♄39'17	0°-22'-5
behind sun end	-280 Nov 28 j 21:28	3°♄23'13		minimum elong	-273 Dec 28 j 01:06	2°♄39'17	0°22'06
max. Earth dist.	-280 Nov 29 j 04:32	3°♄24'18	20.31491 AU	max. Earth dist.	-273 Dec 29 j 01:43	2°♄42'54	20.72833 AU
retrograde	-279 Mar 16 j 13:25	7°♄30'55		retrograde	-272 Apr 14 j 23:29	6°♄43'25	
opposition	-279 Jun 01 j 10:53	5°♄31'18	0°-2'-23	opposition	-272 Jul 01 j 19:11	4°♄44'14	0°-25'-56
min. Earth dist.	-279 May 31 j 20:10	5°♄32'48	18.34636 AU	min. Earth dist.	-272 Jun 30 j 18:53	4°♄46'40	18.75460 AU
direct	-279 Aug 17 j 10:27	3°♄31'32		direct	-272 Sep 16 j 05:12	2°♄46'38	
conjunction	-279 Dec 03 j 01:07	7°♄38'24	0°-3'-51	conjunction	-272 Dec 31 j 07:31	6°♄44'48	0°-24'-46
minimum elong	-279 Dec 03 j 01:06	7°♄38'24	0°03'52	minimum elong	-272 Dec 31 j 07:31	6°♄44'48	0°24'46
behind sun begin	-279 Dec 02 j 18:38	7°♄37'27		max. Earth dist.	-271 Jan 01 j 08:11	6°♄48'25	20.77974 AU
behind sun end	-279 Dec 03 j 07:34	7°♄39'20		retrograde	-271 Apr 19 j 09:35	10°♄48'30	
max. Earth dist.	-279 Dec 03 j 17:23	7°♄40'50	20.37764 AU	min. Earth dist.	-271 Jul 05 j 07:19	8°♄51'51	18.80450 AU
retrograde	-278 Mar 21 j 02:11	11°♄46'16		opposition	-271 Jul 06 j 07:37	8°♄49'25	0°-28'-49
min. Earth dist.	-278 Jun 05 j 11:44	9°♄48'20	18.40844 AU	direct	-271 Sep 20 j 13:26	6°♄52'06	
opposition	-278 Jun 06 j 04:06	9°♄46'41	0°-6'00				
direct	-278 Aug 22 j 02:37	7°♄47'12		conjunction	-270 Jan 04 j 13:45	10°♄49'20	0°-27'-18
				minimum elong	-270 Jan 04 j 13:45	10°♄49'20	0°27'20
conjunction	-278 Dec 07 j 10:28	11°♄52'36	0°-7'-5	max. Earth dist.	-270 Jan 05 j 15:59	10°♄53'10	20.82779 AU
minimum elong	-278 Dec 07 j 10:28	11°♄52'36	0°07'07	retrograde	-270 Apr 23 j 20:18	14°♄52'38	
behind sun begin	-278 Dec 07 j 04:25	11°♄51'43		opposition	-270 Jul 10 j 19:18	12°♄53'38	0°-31'-33
behind sun end	-278 Dec 07 j 16:31	11°♄53'29		min. Earth dist.	-270 Jul 09 j 17:51	12°♄56'11	18.85057 AU
max. Earth dist.	-278 Dec 08 j 03:22	11°♄55'07	20.43916 AU	direct	-270 Sep 25 j 00:09	10°♄56'35	
retrograde	-277 Mar 25 j 14:40	15°♄59'44					
opposition	-277 Jun 10 j 20:23	14°♄00'09	0°-9'-34	conjunction	-269 Jan 08 j 19:45	14°♄52'57	0°-29'-43
min. Earth dist.	-277 Jun 10 j 02:40	14°♄01'57	18.46960 AU	minimum elong	-269 Jan 08 j 19:45	14°♄52'57	0°29'43
direct	-277 Aug 26 j 16:40	12°♄00'57		max. Earth dist.	-269 Jan 09 j 21:33	14°♄56'43	20.87167 AU
				retrograde	-269 Apr 28 j 05:52	18°♄55'54	
conjunction	-277 Dec 11 j 19:20	16°♄04'58	0°-10'-15	min. Earth dist.	-269 Jul 14 j 05:35	16°♄59'26	18.89233 AU
minimum elong	-277 Dec 11 j 19:20	16°♄04'58	0°10'16	opposition	-269 Jul 15 j 06:24	16°♄56'57	0°-34'-7
behind sun begin	-277 Dec 11 j 14:06	16°♄04'13		direct	-269 Sep 29 j 07:18	15°♄00'07	
behind sun end	-277 Dec 12 j 00:34	16°♄05'44					
max. Earth dist.	-277 Dec 12 j 14:46	16°♄07'52	20.49974 AU	conjunction	-268 Jan 13 j 01:43	18°♄55'42	0°-31'-57
retrograde	-276 Mar 29 j 02:32	20°♄11'23		minimum elong	-268 Jan 13 j 01:43	18°♄55'42	0°31'58
opposition	-276 Jun 14 j 11:54	18°♄11'52	0°-13'-3	max. Earth dist.	-268 Jan 14 j 04:28	18°♄59'35	20.91099 AU
min. Earth dist.	-276 Jun 13 j 16:22	18°♄13'50	18.52963 AU	retrograde	-268 May 01 j 15:48	22°♄58'19	
direct	-276 Aug 30 j 06:48	16°♄12'58		opposition	-268 Jul 18 j 16:57	20°♄59'23	0°-36'-30
				min. Earth dist.	-268 Jul 17 j 15:12	21°♄01'57	18.92912 AU
conjunction	-276 Dec 15 j 03:22	20°♄15'39	0°-13'-21	direct	-268 Oct 02 j 17:11	19°♄02'44	
minimum elong	-276 Dec 15 j 03:22	20°♄15'39	0°13'23				
behind sun begin	-276 Dec 14 j 23:31	20°♄15'06		conjunction	-267 Jan 16 j 07:11	22°♄57'34	0°-34'-2
behind sun end	-276 Dec 15 j 07:13	20°♄16'13		minimum elong	-267 Jan 16 j 07:11	22°♄57'34	0°34'03
max. Earth dist.	-276 Dec 15 j 23:20	20°♄18'37	20.55920 AU	max. Earth dist.	-267 Jan 17 j 09:14	23°♄01'20	20.94522 AU
retrograde	-275 Apr 02 j 14:10	24°♄21'26		retrograde	-267 May 06 j 01:02	26°♄59'54	
min. Earth dist.	-275 Jun 18 j 06:12	22°♄24'02	18.58863 AU	min. Earth dist.	-267 Jul 22 j 02:17	25°♄03'25	18.96092 AU
opposition	-275 Jun 19 j 02:49	22°♄21'58	0°-16'-27	opposition	-267 Jul 23 j 03:10	25°♄00'56	0°-38'-42
direct	-275 Sep 03 j 18:53	20°♄23'24		direct	-267 Oct 06 j 23:50	23°♄04'24	
conjunction	-275 Dec 19 j 11:07	24°♄24'50	0°-16'-22	conjunction	-266 Jan 20 j 12:44	26°♄58'34	0°-35'-56
minimum elong	-275 Dec 19 j 11:06	24°♄24'50	0°16'23	minimum elong	-266 Jan 20 j 12:44	26°♄58'34	0°35'57
max. Earth dist.	-275 Dec 20 j 09:26	24°♄28'08	20.61748 AU	max. Earth dist.	-266 Jan 21 j 15:35	27°♄02'27	20.97455 AU
retrograde	-274 Apr 07 j 01:38	28°♄30'01			-266 Mar 20 j 16:11	0°♄	
opposition	-274 Jun 23 j 16:56	26°♄30'38	0°-19'-44	retrograde	-266 May 10 j 09:55	1°♄00'37	
min. Earth dist.	-274 Jun 22 j 18:34	26°♄32'53	18.64609 AU		-266 Jul 02 j 01:06	30°♄	
direct	-274 Sep 08 j 07:38	24°♄32'23		min. Earth dist.	-266 Jul 26 j 10:51	29°♄04'10	18.98779 AU
				opposition	-266 Jul 27 j 12:35	29°♄01'36	0°-40'-42
conjunction	-274 Dec 23 j 18:11	28°♄32'39	0°-19'-17	direct	-266 Oct 11 j 08:38	27°♄05'09	

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:12, page 10

Attention, astronomical year style is used: The year -265 in astronomical counting style is the year 266 BCE in historical counting style.

	-265 Jan 07 j 14:53	0°♊		opposition	-258 Aug 29 j 01:47	0°♋49'03	0°-48'-50
					-258 Sep 18 j 23:36	30°♌	
conjunction	-265 Jan 24 j 17:56	0°♊58'43	0°-37'-39	direct	-258 Nov 12 j 05:59	28°♌52'47	
minimum elong	-265 Jan 24 j 17:56	0°♊58'43	0°37'41		-257 Jan 03 j 06:23	0°♋	
max. Earth dist.	-265 Jan 25 j 20:01	1°♊02'28	20.99909 AU				
retrograde	-265 May 14 j 18:22	5°♋00'33		conjunction	-257 Feb 25 j 13:37	2°♋44'58	0°-44'-14
opposition	-265 Jul 31 j 21:38	3°♋01'26	0°-42'-29	minimum elong	-257 Feb 25 j 13:37	2°♋44'58	0°44'15
min. Earth dist.	-265 Jul 30 j 20:55	3°♋03'55	19.01021 AU	max. Earth dist.	-257 Feb 26 j 13:15	2°♋48'20	21.05716 AU
direct	-265 Oct 15 j 14:42	1°♋05'02		retrograde	-257 Jun 16 j 10:46	6°♋47'10	
				min. Earth dist.	-257 Sep 01 j 11:45	4°♋49'45	19.05255 AU
conjunction	-264 Jan 28 j 23:07	4°♋58'05	0°-39'-10	opposition	-257 Sep 02 j 08:35	4°♋47'39	0°-48'-50
minimum elong	-264 Jan 28 j 23:07	4°♋58'05	0°39'11	direct	-257 Nov 16 j 09:24	2°♋51'21	
max. Earth dist.	-264 Jan 30 j 02:00	5°♋01'58	21.01939 AU				
retrograde	-264 May 18 j 02:47	8°♋59'45		conjunction	-256 Feb 29 j 20:23	6°♋43'47	0°-44'-8
min. Earth dist.	-264 Aug 03 j 04:22	7°♋03'07	19.02849 AU	minimum elong	-256 Feb 29 j 20:23	6°♋43'47	0°44'09
opposition	-264 Aug 04 j 05:58	7°♋00'33	0°-44'-3	max. Earth dist.	-256 Mar 01 j 19:30	6°♋47'05	21.04577 AU
direct	-264 Oct 18 j 22:03	5°♋04'11		retrograde	-256 Jun 19 j 20:37	10°♋46'17	
				opposition	-256 Sep 05 j 15:12	8°♋46'44	0°-48'-36
conjunction	-263 Feb 01 j 04:08	8°♋56'49	0°-40'-30	min. Earth dist.	-256 Sep 04 j 18:33	8°♋48'49	19.03847 AU
minimum elong	-263 Feb 01 j 04:07	8°♋56'49	0°40'32	direct	-256 Nov 19 j 15:37	6°♋50'21	
max. Earth dist.	-263 Feb 02 j 06:19	9°♋00'34	21.03577 AU				
retrograde	-263 May 22 j 10:07	12°♋58'22		conjunction	-255 Mar 05 j 03:35	10°♋43'08	0°-43'-49
opposition	-263 Aug 08 j 14:08	10°♋59'05	0°-45'-24	minimum elong	-255 Mar 05 j 03:35	10°♋43'08	0°43'49
min. Earth dist.	-263 Aug 07 j 13:35	11°♋01'33	19.04317 AU	max. Earth dist.	-255 Mar 06 j 00:38	10°♋46'08	21.02900 AU
direct	-263 Oct 23 j 03:34	9°♋02'45		retrograde	-255 Jun 24 j 04:37	14°♋45'59	
				opposition	-255 Sep 09 j 21:58	12°♋46'20	0°-48'-8
conjunction	-262 Feb 05 j 09:15	12°♋55'03	0°-41'-37	min. Earth dist.	-255 Sep 09 j 03:43	12°♋48'11	19.01898 AU
minimum elong	-262 Feb 05 j 09:15	12°♋55'03	0°41'38	direct	-255 Nov 23 j 19:29	10°♋49'50	
max. Earth dist.	-262 Feb 06 j 12:09	12°♋58'54	21.04868 AU				
retrograde	-262 Mar 15 j 13:14	15°♋		conjunction	-254 Mar 09 j 11:21	14°♋43'03	0°-43'-17
				minimum elong	-254 Mar 09 j 11:21	14°♋43'03	0°43'18
opposition	-262 May 26 j 19:09	16°♋56'33		max. Earth dist.	-254 Mar 10 j 07:29	14°♋45'55	21.00684 AU
min. Earth dist.	-262 Aug 11 j 17:54	15°♌		retrograde	-254 Jun 28 j 14:35	18°♋46'15	
direct	-262 Aug 12 j 21:44	14°♋57'12	0°-46'-32	min. Earth dist.	-254 Sep 13 j 10:46	16°♋48'18	18.99396 AU
				opposition	-254 Sep 14 j 04:34	16°♋46'30	0°-47'-26
conjunction	-262 Oct 27 j 09:56	13°♋00'53		direct	-254 Nov 28 j 01:57	14°♋49'50	
conjunction	-261 Feb 09 j 14:26	16°♋52'58	0°-42'-33	conjunction	-253 Mar 13 j 19:31	18°♋43'31	0°-42'-32
minimum elong	-261 Feb 09 j 14:26	16°♋52'58	0°42'34	minimum elong	-253 Mar 13 j 19:31	18°♋43'31	0°42'32
max. Earth dist.	-261 Feb 10 j 16:25	16°♋56'41	21.05796 AU	max. Earth dist.	-253 Mar 14 j 13:25	18°♋46'04	20.97916 AU
retrograde	-261 May 31 j 01:45	20°♋54'29		retrograde	-253 Jul 02 j 22:48	22°♋47'08	
min. Earth dist.	-261 Aug 16 j 05:06	18°♋57'30	19.06182 AU	opposition	-253 Sep 18 j 11:12	20°♋47'14	0°-46'-29
opposition	-261 Aug 17 j 05:02	18°♋55'06	0°-47'-27	min. Earth dist.	-253 Sep 17 j 19:55	20°♋48'47	18.96376 AU
direct	-261 Oct 31 j 14:21	16°♋58'48		direct	-253 Dec 02 j 06:21	18°♋50'21	
conjunction	-260 Feb 13 j 19:53	20°♋50'46	0°-43'-17	conjunction	-252 Mar 17 j 04:10	22°♋44'37	0°-41'-34
minimum elong	-260 Feb 13 j 19:53	20°♋50'46	0°43'18	minimum elong	-252 Mar 17 j 04:10	22°♋44'37	0°41'35
max. Earth dist.	-260 Feb 14 j 22:15	20°♋54'32	21.06374 AU	max. Earth dist.	-252 Mar 17 j 21:06	22°♋47'02	20.94674 AU
retrograde	-260 Jun 03 j 11:07	24°♋52'21		retrograde	-252 Jul 06 j 08:53	26°♋48'39	
min. Earth dist.	-260 Aug 19 j 11:35	22°♋55'23	19.06568 AU	opposition	-252 Sep 21 j 17:47	24°♋48'36	0°-45'-19
opposition	-260 Aug 20 j 12:04	22°♋52'55	0°-48'-8	min. Earth dist.	-252 Sep 21 j 02:55	24°♋50'07	18.92905 AU
direct	-260 Nov 03 j 20:23	20°♋56'39		direct	-252 Dec 05 j 13:03	22°♋51'29	
conjunction	-259 Feb 17 j 01:16	24°♋48'35	0°-43'-48	conjunction	-251 Mar 21 j 13:06	26°♋46'23	0°-40'-24
minimum elong	-259 Feb 17 j 01:17	24°♋48'35	0°43'49	minimum elong	-251 Mar 21 j 13:06	26°♋46'23	0°40'25
max. Earth dist.	-259 Feb 18 j 02:32	24°♋52'11	21.06569 AU	max. Earth dist.	-251 Mar 22 j 04:05	26°♋48'31	20.91000 AU
retrograde	-259 Jun 07 j 17:50	28°♋50'19			-251 May 25 j 11:28	0°♌	
opposition	-259 Aug 24 j 19:09	26°♋50'52	0°-48'-36	retrograde	-251 Jul 10 j 17:28	0°♌50'56	
min. Earth dist.	-259 Aug 23 j 20:18	26°♋53'10	19.06568 AU		-251 Aug 26 j 23:30	30°♌	
direct	-259 Nov 07 j 23:57	24°♋54'36		opposition	-251 Sep 26 j 00:39	28°♋50'42	0°-43'-55
				min. Earth dist.	-251 Sep 25 j 12:12	28°♋51'59	18.89043 AU
conjunction	-258 Feb 21 j 07:19	28°♋46'36	0°-44'-7	direct	-251 Dec 09 j 17:46	26°♋53'20	
minimum elong	-258 Feb 21 j 07:19	28°♋46'36	0°44'09		-250 Mar 11 j 14:33	0°♌	
max. Earth dist.	-258 Feb 22 j 08:35	28°♋50'12	21.06369 AU				
retrograde	-258 Mar 15 j 01:40	0°♋		conjunction	-250 Mar 25 j 22:52	0°♌48'58	0°-39'-1
min. Earth dist.	-258 Jun 12 j 03:27	2°♋48'32		minimum elong	-250 Mar 25 j 22:52	0°♌48'58	0°39'02
				max. Earth dist.	-250 Mar 26 j 12:48	0°♌50'58	20.86975 AU

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:12, page 11

Attention, astronomical year style is used: The year -250 in astronomical counting style is the year 251 BCE in historical counting style.

retrograde	-250 Jul 15 j 04:22	4°♃54'02		retrograde	-242 Aug 18 j 08:53	8°♃06'04	
opposition	-250 Sep 30 j 07:18	2°♃53'39	0°-42'-17	opposition	-242 Nov 02 j 02:07	6°♃04'55	0°-22'-5
min. Earth dist.	-250 Sep 29 j 19:19	2°♃54'53	18.84850 AU	min. Earth dist.	-242 Nov 02 j 03:32	6°♃04'46	18.42579 AU
direct	-250 Dec 14 j 00:50	0°♃56'01		direct	-241 Jan 15 j 15:34	4°♃05'01	
conjunction	-249 Mar 30 j 09:08	4°♃52'29	0°-37'-27	conjunction	-241 May 03 j 23:03	8°♃10'54	0°-18'-28
minimum elong	-249 Mar 30 j 09:08	4°♃52'29	0°37'28	minimum elong	-241 May 03 j 23:03	8°♃10'54	0°18'29
max. Earth dist.	-249 Mar 30 j 21:03	4°♃54'11	20.82629 AU	max. Earth dist.	-241 May 03 j 19:32	8°♃10'24	20.39421 AU
retrograde	-249 Jul 19 j 13:36	8°♃58'08		retrograde	-241 Aug 22 j 22:44	12°♃22'27	
opposition	-249 Oct 04 j 14:27	6°♃57'36	0°-40'-27	opposition	-241 Nov 06 j 12:50	10°♃21'10	0°-18'-46
min. Earth dist.	-249 Oct 04 j 04:51	6°♃58'36	18.80368 AU	min. Earth dist.	-241 Nov 06 j 16:56	10°♃20'44	18.36179 AU
direct	-249 Dec 18 j 06:00	4°♃59'42		direct	-240 Jan 20 j 01:32	8°♃20'54	
conjunction	-248 Apr 02 j 19:56	8°♃57'05	0°-35'-41	conjunction	-240 May 07 j 16:29	12°♃28'10	0°-15'-25
minimum elong	-248 Apr 02 j 19:56	8°♃57'05	0°35'42	minimum elong	-240 May 07 j 16:29	12°♃28'10	0°15'26
max. Earth dist.	-248 Apr 03 j 06:43	8°♃58'37	20.78028 AU	behind sun begin	-240 May 07 j 15:06	12°♃27'58	
retrograde	-248 Jul 23 j 01:38	13°♃03'21		behind sun end	-240 May 07 j 17:51	12°♃28'22	
opposition	-248 Oct 07 j 21:43	11°♃02'42	0°-38'-24	max. Earth dist.	-240 May 07 j 10:18	12°♃27'16	20.32921 AU
min. Earth dist.	-248 Oct 07 j 12:32	11°♃03'39	18.75641 AU		-240 Jun 22 j 17:50	15°♃	
direct	-248 Dec 21 j 13:22	9°♃04'32		retrograde	-240 Aug 26 j 15:08	16°♃40'31	
conjunction	-247 Apr 07 j 07:31	13°♃02'54	0°-33'-44		-240 Nov 01 j 17:48	15°♃	
minimum elong	-247 Apr 07 j 07:31	13°♃02'54	0°33'46	opposition	-240 Nov 09 j 23:57	14°♃39'04	0°-15'-20
max. Earth dist.	-247 Apr 07 j 16:20	13°♃04'10	20.73187 AU	min. Earth dist.	-240 Nov 10 j 05:16	14°♃38'30	18.29576 AU
retrograde	-247 Jul 27 j 12:16	17°♃09'51		direct	-239 Jan 23 j 14:50	12°♃38'22	
opposition	-247 Oct 12 j 05:24	15°♃09'06	0°-36'-9		-239 Apr 11 j 05:03	15°♃	
min. Earth dist.	-247 Oct 11 j 22:39	15°♃09'48	18.70693 AU	conjunction	-239 May 12 j 10:59	16°♃47'05	0°-12'-16
direct	-247 Dec 25 j 19:24	13°♃10'39		minimum elong	-239 May 12 j 10:59	16°♃47'05	0°12'18
conjunction	-246 Apr 11 j 19:58	17°♃10'07	0°-31'-36	behind sun begin	-239 May 12 j 06:36	16°♃46'27	
minimum elong	-246 Apr 11 j 19:59	17°♃10'07	0°31'38	behind sun end	-239 May 12 j 15:21	16°♃47'42	
max. Earth dist.	-246 Apr 12 j 03:16	17°♃11'10	20.68147 AU	max. Earth dist.	-239 May 12 j 03:00	16°♃45'55	20.26229 AU
retrograde	-246 Aug 01 j 01:27	21°♃17'46		retrograde	-239 Aug 31 j 05:40	21°♃00'11	
opposition	-246 Oct 16 j 13:21	19°♃16'56	0°-33'-42	opposition	-239 Nov 14 j 11:37	18°♃58'36	0°-11'-47
min. Earth dist.	-246 Oct 16 j 07:14	19°♃17'35	18.65538 AU	min. Earth dist.	-239 Nov 14 j 19:28	18°♃57'45	18.22820 AU
direct	-246 Dec 30 j 03:23	17°♃18'14		direct	-238 Jan 28 j 02:20	16°♃57'27	
conjunction	-245 Apr 16 j 09:09	21°♃18'52	0°-29'-18	conjunction	-238 May 17 j 06:12	21°♃07'37	0°-9'-2
minimum elong	-245 Apr 16 j 09:09	21°♃18'52	0°29'19	minimum elong	-238 May 17 j 06:11	21°♃07'37	0°09'03
max. Earth dist.	-245 Apr 16 j 14:26	21°♃19'37	20.62881 AU	behind sun begin	-238 May 17 j 00:28	21°♃06'48	
retrograde	-245 Aug 05 j 13:33	25°♃27'16		behind sun end	-238 May 17 j 11:55	21°♃08'27	
opposition	-245 Oct 20 j 21:49	23°♃26'22	0°-31'-4	max. Earth dist.	-238 May 16 j 19:26	21°♃06'03	20.19437 AU
min. Earth dist.	-245 Oct 20 j 18:17	23°♃26'44	18.60165 AU	retrograde	-238 Sep 04 j 22:59	25°♃21'30	
direct	-244 Jan 03 j 10:29	21°♃27'25		opposition	-238 Nov 18 j 23:49	23°♃19'44	0°-8'-8
conjunction	-244 Apr 19 j 23:14	25°♃29'16	0°-26'-49	min. Earth dist.	-238 Nov 19 j 08:55	23°♃18'46	18.16002 AU
minimum elong	-244 Apr 19 j 23:14	25°♃29'16	0°26'51	direct	-237 Feb 01 j 17:19	21°♃18'09	
max. Earth dist.	-244 Apr 20 j 02:37	25°♃29'45	20.57411 AU	conjunction	-237 May 22 j 02:08	25°♃29'49	0°-5'-44
retrograde	-244 Aug 09 j 04:05	29°♃38'28		minimum elong	-237 May 22 j 02:07	25°♃29'49	0°05'45
opposition	-244 Oct 24 j 06:40	27°♃37'29	0°-28'-14	behind sun begin	-237 May 21 j 19:37	25°♃28'52	
min. Earth dist.	-244 Oct 24 j 04:04	27°♃37'46	18.54571 AU	behind sun end	-237 May 22 j 08:36	25°♃30'45	
direct	-243 Jan 06 j 19:49	25°♃38'15		max. Earth dist.	-237 May 21 j 14:08	25°♃28'03	20.12597 AU
conjunction	-243 Apr 24 j 14:11	29°♃41'24	0°-24'-11	retrograde	-237 Sep 09 j 14:25	29°♃44'28	
minimum elong	-243 Apr 24 j 14:11	29°♃41'24	0°24'11	opposition	-237 Nov 23 j 12:44	27°♃42'33	0°-4'-25
max. Earth dist.	-243 Apr 24 j 15:24	29°♃41'35	20.51684 AU	min. Earth dist.	-237 Nov 23 j 23:53	27°♃41'21	18.09175 AU
retrograde	-243 Apr 29 j 22:05	0°♃		direct	-236 Feb 06 j 06:37	25°♃40'31	
opposition	-243 Aug 13 j 17:13	3°♃51'23		conjunction	-236 May 25 j 22:43	29°♃53'41	0°-2'-22
min. Earth dist.	-243 Oct 28 j 16:25	1°♃50'19	18.48710 AU	minimum elong	-236 May 25 j 22:44	29°♃53'41	0°02'22
direct	-242 Jan 11 j 04:16	29°♃50'48		behind sun begin	-236 May 25 j 15:57	29°♃52'42	
conjunction	-242 Apr 29 j 06:12	3°♃55'18	0°-21'-24	behind sun end	-236 May 26 j 05:31	29°♃54'40	
minimum elong	-242 Apr 29 j 06:12	3°♃55'18	0°21'25	max. Earth dist.	-236 May 25 j 08:05	29°♃51'31	20.05810 AU
max. Earth dist.	-242 Apr 29 j 04:53	3°♃55'06	20.45695 AU	retrograde	-236 May 27 j 17:07	0°♃	
				retrograde	-236 Sep 13 j 08:33	4°♃09'07	
				opposition	-236 Nov 27 j 02:09	2°♃07'04	0°00'-40
				min. Earth dist.	-236 Nov 27 j 14:27	2°♃05'44	18.02442 AU
				asc. node	-235 Feb 01 j 16:27	0°♃06'25	
				direct	-235 Feb 09 j 22:39	0°♃04'35	

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:12, page 12

Attention, astronomical year style is used: The year -235 in astronomical counting style is the year 236 BCE in historical counting style.

conjunction	-235 May 30 j 20:16	4°II19'18	0°01'08	direct	-228 Mar 13 j 07:42	1°☾46'07	
minimum elong	-235 May 30 j 20:17	4°II19'18	0°01'08				
behind sun begin	-235 May 30 j 13:29	4°II18'19		conjunction	-228 Jul 02 j 22:58	6°☾11'13	0°24'10
behind sun end	-235 May 31 j 03:04	4°II20'17		minimum elong	-228 Jul 02 j 22:58	6°☾11'13	0°24'10
max. Earth dist.	-235 May 30 j 04:50	4°II17'00	19.99128 AU	max. Earth dist.	-228 Jul 01 j 20:36	6°☾07'10	19.58837 AU
retrograde	-235 Sep 18 j 01:40	8°II33'30		retrograde	-228 Oct 20 j 02:58	10°☾32'16	
opposition	-235 Dec 01 j 16:25	6°II33'20	0°03'06	opposition	-227 Jan 01 j 17:34	8°☾30'03	0°28'31
min. Earth dist.	-235 Dec 02 j 06:22	6°II31'50	17.95839 AU	min. Earth dist.	-227 Jan 02 j 16:05	8°☾27'35	17.56464 AU
direct	-234 Feb 14 j 14:07	4°II30'28		direct	-227 Mar 18 j 05:12	6°☾25'00	
				max. Earth dist.	-227 Jul 06 j 23:12	10°☾47'14	19.54102 AU
conjunction	-234 Jun 04 j 18:27	8°II46'42	0°04'34				
minimum elong	-234 Jun 04 j 18:27	8°II46'43	0°04'35	conjunction	-227 Jul 08 j 01:54	10°☾51'21	0°27'04
behind sun begin	-234 Jun 04 j 11:49	8°II45'44		minimum elong	-227 Jul 08 j 01:54	10°☾51'21	0°27'04
behind sun end	-234 Jun 05 j 01:06	8°II47'41		retrograde	-227 Oct 25 j 02:11	15°☾12'52	
max. Earth dist.	-234 Jun 04 j 00:20	8°II44'00	19.92621 AU	opposition	-226 Jan 06 j 13:59	13°☾10'38	0°31'41
retrograde	-234 Sep 22 j 20:29	13°II03'41		min. Earth dist.	-226 Jan 07 j 12:40	13°☾08'09	17.51869 AU
opposition	-234 Dec 06 j 07:18	11°II01'27	0°06'54	direct	-226 Mar 23 j 04:05	11°☾05'19	
min. Earth dist.	-234 Dec 06 j 22:22	10°II59'49	17.89449 AU	max. Earth dist.	-226 Jul 12 j 00:45	15°☾28'24	19.49658 AU
direct	-233 Feb 19 j 07:18	8°II58'12					
				conjunction	-226 Jul 13 j 05:01	15°☾32'47	0°29'49
conjunction	-233 Jun 09 j 17:31	13°II16'00	0°07'58	minimum elong	-226 Jul 13 j 05:01	15°☾32'47	0°29'50
minimum elong	-233 Jun 09 j 17:31	13°II16'00	0°07'58	retrograde	-226 Oct 30 j 00:36	19°☾54'42	
behind sun begin	-233 Jun 09 j 11:29	13°II15'07		opposition	-225 Jan 11 j 11:08	17°☾52'26	0°34'39
behind sun end	-233 Jun 09 j 23:34	13°II16'53		min. Earth dist.	-225 Jan 12 j 11:21	17°☾49'47	17.47610 AU
max. Earth dist.	-233 Jun 08 j 23:02	13°II13'13	19.86341 AU	direct	-225 Mar 28 j 03:08	15°☾46'49	
retrograde	-233 Sep 27 j 15:33	17°II33'43		max. Earth dist.	-225 Jul 17 j 04:00	20°☾10'54	19.45586 AU
opposition	-233 Dec 10 j 23:03	15°II31'28	0°10'41				
min. Earth dist.	-233 Dec 11 j 15:19	15°II29'42	17.83299 AU	conjunction	-225 Jul 18 j 08:25	20°☾15'18	0°32'22
direct	-232 Feb 24 j 00:48	13°II27'53		minimum elong	-225 Jul 18 j 08:25	20°☾15'18	0°32'22
				retrograde	-225 Nov 04 j 00:03	24°☾37'34	
conjunction	-232 Jun 13 j 17:02	17°II47'13	0°11'20	opposition	-224 Jan 16 j 08:46	22°☾35'14	0°37'23
minimum elong	-232 Jun 13 j 17:02	17°II47'13	0°11'20	min. Earth dist.	-224 Jan 17 j 08:34	22°☾32'38	17.43737 AU
behind sun begin	-232 Jun 13 j 12:10	17°II46'30		direct	-224 Apr 01 j 04:16	20°☾29'22	
behind sun end	-232 Jun 13 j 21:55	17°II47'56		max. Earth dist.	-224 Jul 21 j 06:57	24°☾54'14	19.41923 AU
max. Earth dist.	-232 Jun 12 j 20:00	17°II44'03	19.80331 AU				
retrograde	-232 Oct 01 j 11:31	22°II05'43		conjunction	-224 Jul 22 j 11:55	24°☾58'44	0°34'43
opposition	-232 Dec 14 j 15:33	20°II03'27	0°14'25	minimum elong	-224 Jul 22 j 11:54	24°☾58'44	0°34'43
min. Earth dist.	-232 Dec 15 j 09:08	20°II01'32	17.77430 AU	retrograde	-224 Nov 07 j 22:12	29°☾21'15	
direct	-231 Feb 27 j 19:19	17°II59'33		opposition	-223 Jan 20 j 07:09	27°☾18'53	0°39'53
				min. Earth dist.	-223 Jan 21 j 08:14	27°☾16'08	17.40313 AU
conjunction	-231 Jun 18 j 17:40	22°II20'26	0°14'40	direct	-223 Apr 06 j 04:52	25°☾12'46	
minimum elong	-231 Jun 18 j 17:40	22°II20'26	0°14'40	max. Earth dist.	-223 Jul 26 j 10:25	29°☾38'22	19.38743 AU
behind sun begin	-231 Jun 18 j 15:08	22°II20'03					
behind sun end	-231 Jun 18 j 20:13	22°II20'48		conjunction	-223 Jul 27 j 15:29	29°☾42'54	0°36'49
max. Earth dist.	-231 Jun 17 j 20:24	22°II17'12	19.74585 AU	minimum elong	-223 Jul 27 j 15:29	29°☾42'54	0°36'50
retrograde	-231 Oct 06 j 08:34	26°II39'37					
opposition	-231 Dec 19 j 08:46	24°II37'23	0°18'06	retrograde	-223 Aug 01 j 05:01	0°♁	
min. Earth dist.	-231 Dec 20 j 03:23	24°II35'22	17.71812 AU	retrograde	-223 Nov 12 j 21:47	4°♁05'36	
direct	-230 Mar 04 j 14:44	22°II33'13		opposition	-222 Jan 25 j 05:52	2°♁03'12	0°42'06
				min. Earth dist.	-222 Jan 26 j 06:00	2°♁00'33	17.37390 AU
conjunction	-230 Jun 23 j 18:51	26°II55'35	0°17'56				
minimum elong	-230 Jun 23 j 18:51	26°II55'35	0°17'56	direct	-222 Mar 31 j 10:54	30°R☾	
max. Earth dist.	-230 Jun 22 j 19:00	26°II51'57	19.69092 AU	direct	-222 Apr 11 j 07:48	29°☾56'52	
retrograde	-230 Aug 18 j 08:58	0°☾		conjunction	-222 Apr 22 j 03:51	0°♁	
				conjunction	-222 Aug 01 j 19:05	4°♁27'39	0°38'41
retrograde	-230 Oct 11 j 05:58	1°☾15'28		minimum elong	-222 Aug 01 j 19:05	4°♁27'39	0°38'41
				max. Earth dist.	-222 Jul 31 j 14:36	4°♁23'12	19.36089 AU
opposition	-230 Dec 05 j 17:32	30°RII		retrograde	-222 Nov 17 j 20:15	8°♁50'28	
min. Earth dist.	-230 Dec 24 j 02:57	29°II13'14	0°21'42	opposition	-221 Jan 30 j 05:25	6°♁48'03	0°44'02
direct	-230 Dec 24 j 23:10	29°II11'03	17.66455 AU	min. Earth dist.	-221 Jan 31 j 06:17	6°♁45'20	17.35038 AU
				direct	-221 Apr 16 j 09:25	4°♁41'33	
conjunction	-229 Mar 09 j 10:40	27°II08'47					
				conjunction	-221 Aug 06 j 22:20	9°♁12'51	0°40'17
conjunction	-229 Jun 28 j 20:38	1°☾32'33	0°21'06	minimum elong	-221 Aug 06 j 22:20	9°♁12'51	0°40'17
minimum elong	-229 Jun 28 j 20:38	1°☾32'33	0°21'06	max. Earth dist.	-221 Aug 05 j 17:52	9°♁08'23	19.34044 AU
max. Earth dist.	-229 Jun 27 j 20:34	1°☾28'53	19.63844 AU	retrograde	-221 Nov 22 j 20:32	13°♁35'44	
retrograde	-229 Oct 16 j 04:36	5°☾53'03		opposition	-220 Feb 04 j 05:13	11°♁33'20	0°45'41
opposition	-229 Dec 28 j 21:55	3°☾50'51	0°25'11	min. Earth dist.	-220 Feb 05 j 04:38	11°♁30'47	17.33306 AU
min. Earth dist.	-229 Dec 29 j 18:44	3°☾48'35	17.61328 AU				

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:12, page 13

Attention, astronomical year style is used: The year -220 in astronomical counting style is the year 221 BCE in historical counting style.

direct	-220 Apr 20 j 13:14	9°♈26'44		retrograde	-213 Dec 30 j 19:44	21°♐40'48	
max. Earth dist.	-220 Aug 09 j 22:46	13°♈54'12	19.32627 AU	opposition	-212 Mar 13 j 16:50	19°♐39'20	0°47'01
				min. Earth dist.	-212 Mar 14 j 09:42	19°♐37'31	17.40360 AU
conjunction	-220 Aug 11 j 01:45	13°♈58'26	0°41'36	direct	-212 May 29 j 14:43	17°♐33'39	
minimum elong	-220 Aug 11 j 01:45	13°♈58'26	0°41'36				
	-220 Aug 27 j 12:35	15°♈		conjunction	-212 Sep 18 j 16:40	22°♐03'37	0°41'37
retrograde	-220 Nov 26 j 19:23	18°♈21'19		minimum elong	-212 Sep 18 j 16:40	22°♐03'37	0°41'36
opposition	-219 Feb 08 j 05:31	16°♈18'59	0°47'00	max. Earth dist.	-212 Sep 17 j 23:09	22°♐00'52	19.41769 AU
min. Earth dist.	-219 Feb 09 j 05:15	16°♈16'24	17.32214 AU	retrograde	-211 Jan 03 j 19:04	26°♐24'17	
	-219 Mar 12 j 20:36	15°♈♌		opposition	-211 Mar 18 j 18:43	24°♐22'54	0°45'42
direct	-219 Apr 25 j 15:03	14°♈12'21		min. Earth dist.	-211 Mar 19 j 09:50	24°♐21'17	17.43330 AU
	-219 Jun 07 j 12:13	15°♈		direct	-211 Jun 03 j 19:56	22°♐17'26	
max. Earth dist.	-219 Aug 15 j 01:51	18°♈40'05	19.31868 AU				
conjunction	-219 Aug 16 j 04:53	18°♈44'20	0°42'39	conjunction	-211 Sep 23 j 15:57	26°♐46'32	0°40'18
minimum elong	-219 Aug 16 j 04:53	18°♈44'20	0°42'38	minimum elong	-211 Sep 23 j 15:57	26°♐46'32	0°40'18
retrograde	-219 Dec 01 j 20:22	23°♈07'11		max. Earth dist.	-211 Sep 22 j 23:34	26°♐43'58	19.44950 AU
opposition	-218 Feb 13 j 06:14	21°♈04'57	0°48'00		-211 Nov 20 j 00:19	0°♌	
min. Earth dist.	-218 Feb 14 j 04:25	21°♈02'32	17.31771 AU	retrograde	-210 Jan 08 j 15:45	1°♌06'37	
direct	-218 Apr 30 j 18:57	18°♈58'21			-210 Mar 01 j 16:10	30°♈	
max. Earth dist.	-218 Aug 20 j 06:55	23°♈26'34	19.31732 AU	opposition	-210 Mar 23 j 20:37	29°♈05'17	0°44'04
				min. Earth dist.	-210 Mar 24 j 10:45	29°♈03'47	17.46720 AU
conjunction	-218 Aug 21 j 07:49	23°♈30'29	0°43'24	direct	-210 Jun 08 j 22:38	27°♈00'02	
minimum elong	-218 Aug 21 j 07:48	23°♈30'29	0°43'25		-210 Sep 04 j 19:40	0°♌	
retrograde	-218 Dec 06 j 20:00	27°♈53'14		conjunction	-210 Sep 28 j 14:16	1°♌28'08	0°38'43
opposition	-217 Feb 18 j 07:29	25°♈51'08	0°48'41	minimum elong	-210 Sep 28 j 14:16	1°♌28'08	0°38'42
min. Earth dist.	-217 Feb 19 j 05:34	25°♈48'44	17.31933 AU	max. Earth dist.	-210 Sep 28 j 00:13	1°♌25'55	19.48558 AU
direct	-217 May 05 j 21:25	23°♈44'39		retrograde	-209 Jan 13 j 14:00	5°♌47'34	
max. Earth dist.	-217 Aug 25 j 09:27	28°♈12'51	19.32192 AU	opposition	-209 Mar 28 j 22:10	3°♌46'18	0°42'09
				min. Earth dist.	-209 Mar 29 j 09:48	3°♌45'03	17.50526 AU
conjunction	-217 Aug 26 j 10:22	28°♈16'47	0°43'51	direct	-209 Jun 14 j 03:25	1°♌41'16	
minimum elong	-217 Aug 26 j 10:22	28°♈16'47	0°43'51				
	-217 Sep 23 j 08:56	0°♐		conjunction	-209 Oct 03 j 11:49	6°♌08'15	0°36'53
retrograde	-217 Dec 11 j 20:49	2°♐39'22		minimum elong	-209 Oct 03 j 11:49	6°♌08'15	0°36'52
opposition	-216 Feb 23 j 08:49	0°♐37'25	0°49'02	max. Earth dist.	-209 Oct 02 j 23:41	6°♌06'21	19.52585 AU
min. Earth dist.	-216 Feb 24 j 05:34	0°♐35'10	17.32672 AU	retrograde	-208 Jan 18 j 09:25	10°♌27'00	
	-216 Mar 08 j 23:22	30°♈♌		opposition	-208 Apr 01 j 23:19	8°♌25'47	0°39'58
direct	-216 May 10 j 00:56	28°♈31'02		min. Earth dist.	-208 Apr 02 j 09:55	8°♌24'39	17.54783 AU
	-216 Jul 08 j 13:14	0°♐		direct	-208 Jun 18 j 04:36	6°♌20'59	
conjunction	-216 Aug 30 j 12:45	3°♐03'03	0°44'00	conjunction	-208 Oct 07 j 08:28	10°♌46'48	0°34'49
minimum elong	-216 Aug 30 j 12:45	3°♐03'03	0°44'01	minimum elong	-208 Oct 07 j 08:28	10°♌46'48	0°34'49
max. Earth dist.	-216 Aug 29 j 14:05	2°♐59'29	19.33190 AU	max. Earth dist.	-208 Oct 06 j 22:30	10°♌45'14	19.57076 AU
retrograde	-216 Dec 15 j 21:01	7°♐25'23		retrograde	-207 Jan 22 j 06:57	15°♌04'48	
opposition	-215 Feb 27 j 10:39	5°♐23'35	0°49'02	opposition	-207 Apr 07 j 00:09	13°♌03'41	0°37'33
min. Earth dist.	-215 Feb 28 j 06:54	5°♐21'24	17.33911 AU	min. Earth dist.	-207 Apr 07 j 07:41	13°♌02'53	17.59490 AU
direct	-215 May 15 j 04:12	3°♐17'22		direct	-207 Jun 23 j 07:17	10°♌59'11	
conjunction	-215 Sep 04 j 14:32	7°♐49'05	0°43'51	conjunction	-207 Oct 12 j 04:12	15°♌23'43	0°32'33
minimum elong	-215 Sep 04 j 14:32	7°♐49'05	0°43'51	minimum elong	-207 Oct 12 j 04:12	15°♌23'43	0°32'32
max. Earth dist.	-215 Sep 03 j 15:56	7°♐45'31	19.34673 AU	max. Earth dist.	-207 Oct 11 j 20:50	15°♌22'34	19.62012 AU
retrograde	-215 Dec 20 j 21:06	12°♐11'08		retrograde	-206 Jan 27 j 02:01	19°♌40'59	
opposition	-214 Mar 04 j 12:37	10°♐09'27	0°48'42	opposition	-206 Apr 12 j 00:47	17°♌39'58	0°34'54
min. Earth dist.	-214 Mar 05 j 07:40	10°♐07'24	17.35631 AU	min. Earth dist.	-206 Apr 12 j 07:03	17°♌39'18	17.64656 AU
direct	-214 May 20 j 07:21	8°♐03'24		direct	-206 Jun 28 j 07:04	15°♌35'48	
conjunction	-214 Sep 09 j 15:58	12°♐34'41	0°43'24	conjunction	-206 Oct 16 j 23:04	19°♌59'01	0°30'05
minimum elong	-214 Sep 09 j 15:58	12°♐34'41	0°43'24	minimum elong	-206 Oct 16 j 23:04	19°♌59'01	0°30'05
max. Earth dist.	-214 Sep 08 j 19:42	12°♐31'29	19.36617 AU	max. Earth dist.	-206 Oct 16 j 17:39	19°♌58'11	19.67407 AU
retrograde	-214 Dec 25 j 21:19	16°♐56'20		retrograde	-205 Jan 31 j 22:56	24°♌15'32	
opposition	-213 Mar 09 j 14:46	14°♐54'46	0°48'01	opposition	-205 Apr 17 j 00:42	22°♌14'40	0°32'02
min. Earth dist.	-213 Mar 10 j 08:39	14°♐52'51	17.37783 AU	min. Earth dist.	-205 Apr 17 j 03:43	22°♌14'21	17.70246 AU
direct	-213 May 25 j 11:43	12°♐48'55		direct	-205 Jul 03 j 07:33	20°♌10'53	
conjunction	-213 Sep 14 j 16:32	17°♐19'36	0°42'39	conjunction	-205 Oct 21 j 17:07	24°♌32'44	0°27'26
minimum elong	-213 Sep 14 j 16:32	17°♐19'36	0°42'40	minimum elong	-205 Oct 21 j 17:07	24°♌32'44	0°27'26
max. Earth dist.	-213 Sep 13 j 20:47	17°♐16'29	19.38986 AU	max. Earth dist.	-205 Oct 21 j 14:35	24°♌32'20	19.73188 AU

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:12, page 14

Attention, astronomical year style is used: The year -204 in astronomical counting style is the year 205 BCE in historical counting style.

retrograde	-204 Feb 05 j 17:26	28°♄48'28		behind sun begin	-198 Nov 20 j 18:46	25°♃40'56	
opposition	-204 Apr 21 j 00:24	26°♄47'46	0°29'00	behind sun end	-198 Nov 21 j 07:19	25°♃42'48	
min. Earth dist.	-204 Apr 21 j 02:18	26°♄47'34	17.76194 AU	max. Earth dist.	-198 Nov 21 j 10:58	25°♃43'21	20.18497 AU
direct	-204 Jul 07 j 06:04	24°♄44'25		retrograde	-197 Mar 08 j 18:46	29°♃52'01	
				opposition	-197 May 24 j 06:10	27°♃52'15	0°04'27
conjunction	-204 Oct 25 j 10:16	29°♄04'50	0°24'39	min. Earth dist.	-197 May 23 j 18:42	27°♃53'26	18.21706 AU
minimum elong	-204 Oct 25 j 10:16	29°♄04'50	0°24'38	direct	-197 Aug 09 j 08:28	25°♃51'46	
max. Earth dist.	-204 Oct 25 j 09:16	29°♄04'41	19.79295 AU				
	-204 Nov 09 j 08:08	0°♃		conjunction	-197 Nov 25 j 12:49	0°♃01'37	0°02'24
retrograde	-203 Feb 09 j 13:41	3°♃19'48		minimum elong	-197 Nov 25 j 12:49	0°♃01'37	0°02'24
opposition	-203 Apr 25 j 23:25	1°♃19'16	0°25'48	behind sun begin	-197 Nov 25 j 06:17	0°♃00'40	
min. Earth dist.	-203 Apr 25 j 22:13	1°♃19'24	17.82426 AU	behind sun end	-197 Nov 25 j 19:21	0°♃02'35	
	-203 May 30 j 11:48	30°♃♄			-197 Nov 25 j 02:02	0°♃	
direct	-203 Jul 12 j 05:17	29°♄16'21		max. Earth dist.	-197 Nov 26 j 01:27	0°♃03'31	20.24915 AU
	-203 Aug 22 j 14:26	0°♃		retrograde	-196 Mar 12 j 07:48	4°♃10'58	
				opposition	-196 May 28 j 00:50	2°♃11'15	0°00'46
conjunction	-203 Oct 30 j 02:46	3°♃35'20	0°21'43	min. Earth dist.	-196 May 27 j 12:11	2°♃12'33	18.28073 AU
minimum elong	-203 Oct 30 j 02:46	3°♃35'20	0°21'43	desc. node	-196 Aug 12 j 18:32	0°♃11'06	
max. Earth dist.	-203 Oct 30 j 04:43	3°♃35'38	19.85641 AU	direct	-196 Aug 13 j 02:27	0°♃11'06	
retrograde	-202 Feb 14 j 06:57	7°♃49'30					
opposition	-202 Apr 30 j 22:13	5°♃49'09	0°22'27	conjunction	-196 Nov 28 j 23:29	4°♃19'25	0°00'-59
min. Earth dist.	-202 Apr 30 j 19:59	5°♃49'23	17.88867 AU	minimum elong	-196 Nov 28 j 23:29	4°♃19'25	0°01'00
direct	-202 Jul 17 j 03:07	3°♃46'41		behind sun begin	-196 Nov 28 j 16:58	4°♃18'28	
				behind sun end	-196 Nov 29 j 06:01	4°♃20'23	
conjunction	-202 Nov 03 j 18:14	8°♃04'09	0°18'40	max. Earth dist.	-196 Nov 29 j 12:48	4°♃21'25	20.31242 AU
minimum elong	-202 Nov 03 j 18:14	8°♃04'09	0°18'39	retrograde	-195 Mar 16 j 22:12	8°♃28'00	
max. Earth dist.	-202 Nov 03 j 21:20	8°♃04'37	19.92162 AU	opposition	-195 Jun 01 j 18:43	6°♃28'19	0°-2'-53
retrograde	-201 Feb 19 j 02:10	12°♃17'33		min. Earth dist.	-195 Jun 01 j 04:07	6°♃29'48	18.34373 AU
opposition	-201 May 05 j 20:15	10°♃17'20	0°18'59	direct	-195 Aug 17 j 18:57	4°♃28'28	
min. Earth dist.	-201 May 05 j 15:13	10°♃17'52	17.95441 AU				
direct	-201 Jul 22 j 01:05	8°♃15'19		conjunction	-195 Dec 03 j 09:40	8°♃35'20	0°-4'-18
				minimum elong	-195 Dec 03 j 09:40	8°♃35'20	0°04'20
conjunction	-201 Nov 08 j 09:13	12°♃31'17	0°15'31	behind sun begin	-195 Dec 03 j 03:14	8°♃34'23	
minimum elong	-201 Nov 08 j 09:13	12°♃31'17	0°15'31	behind sun end	-195 Dec 03 j 16:05	8°♃36'16	
behind sun begin	-201 Nov 08 j 07:11	12°♃30'58		max. Earth dist.	-195 Dec 04 j 01:51	8°♃37'45	20.37505 AU
behind sun end	-201 Nov 08 j 11:15	12°♃31'35		retrograde	-194 Mar 21 j 10:21	12°♃43'08	
max. Earth dist.	-201 Nov 08 j 15:06	12°♃32'10	19.98766 AU	opposition	-194 Jun 06 j 11:49	10°♃43'31	0°-6'-30
	-201 Dec 21 j 09:21	15°♃		min. Earth dist.	-194 Jun 05 j 19:39	10°♃45'09	18.40610 AU
retrograde	-200 Feb 23 j 18:02	16°♃43'51		direct	-194 Aug 22 j 11:05	8°♃43'59	
	-200 May 03 j 03:50	15°♃♃					
opposition	-200 May 09 j 17:41	14°♃43'48	0°15'26	conjunction	-194 Dec 07 j 18:55	12°♃49'25	0°-7'-31
min. Earth dist.	-200 May 09 j 11:46	14°♃44'25	18.02063 AU	minimum elong	-194 Dec 07 j 18:55	12°♃49'25	0°07'32
direct	-200 Jul 25 j 21:46	12°♃42'12		behind sun begin	-194 Dec 07 j 12:57	12°♃48'33	
	-200 Oct 10 j 00:35	15°♃		behind sun end	-194 Dec 08 j 00:53	12°♃50'17	
				max. Earth dist.	-194 Dec 08 j 11:46	12°♃51'56	20.43716 AU
conjunction	-200 Nov 11 j 23:16	16°♃56'39	0°12'18	retrograde	-193 Mar 25 j 23:03	16°♃56'31	
minimum elong	-200 Nov 11 j 23:16	16°♃56'39	0°12'17	min. Earth dist.	-193 Jun 10 j 10:17	14°♃58'45	18.46803 AU
behind sun begin	-200 Nov 11 j 18:50	16°♃55'59		opposition	-193 Jun 11 j 04:07	14°♃56'57	0°-10'-2
behind sun end	-200 Nov 12 j 03:43	16°♃57'18		direct	-193 Aug 27 j 00:46	12°♃57'44	
max. Earth dist.	-200 Nov 12 j 05:52	16°♃57'38	20.05395 AU				
retrograde	-199 Feb 27 j 11:54	21°♃08'25		conjunction	-193 Dec 12 j 03:47	17°♃01'50	0°-10'-40
opposition	-199 May 14 j 14:33	19°♃08'29	0°11'49	minimum elong	-193 Dec 12 j 03:46	17°♃01'50	0°10'42
min. Earth dist.	-199 May 14 j 06:11	19°♃09'20	18.08682 AU	behind sun begin	-193 Dec 11 j 22:41	17°♃01'06	
direct	-199 Jul 30 j 18:21	17°♃07'16		behind sun end	-193 Dec 12 j 08:52	17°♃02'34	
				max. Earth dist.	-193 Dec 12 j 23:17	17°♃04'44	20.49862 AU
conjunction	-199 Nov 16 j 12:35	21°♃20'11	0°09'02	retrograde	-192 Mar 29 j 10:42	21°♃08'16	
minimum elong	-199 Nov 16 j 12:35	21°♃20'11	0°09'02	opposition	-192 Jun 14 j 19:33	19°♃08'47	0°-13'-30
behind sun begin	-199 Nov 16 j 06:58	21°♃19'21		min. Earth dist.	-192 Jun 14 j 00:08	19°♃10'45	18.52901 AU
behind sun end	-199 Nov 16 j 18:12	21°♃21'01		direct	-192 Aug 30 j 15:10	17°♃09'55	
max. Earth dist.	-199 Nov 16 j 21:58	21°♃21'36	20.11983 AU				
retrograde	-198 Mar 04 j 02:29	25°♃31'09		conjunction	-192 Dec 15 j 11:55	21°♃12'44	0°-13'-45
opposition	-198 May 19 j 10:52	23°♃31'19	0°08'08	minimum elong	-192 Dec 15 j 11:55	21°♃12'43	0°13'46
min. Earth dist.	-198 May 19 j 01:28	23°♃32'17	18.15233 AU	behind sun begin	-192 Dec 15 j 08:18	21°♃12'12	
direct	-198 Aug 04 j 13:49	21°♃30'30		behind sun end	-192 Dec 15 j 15:31	21°♃13'15	
				max. Earth dist.	-192 Dec 16 j 07:52	21°♃15'41	20.55910 AU
conjunction	-198 Nov 21 j 01:03	25°♃41'52	0°05'44	retrograde	-191 Apr 02 j 22:24	25°♃18'33	
minimum elong	-198 Nov 21 j 01:02	25°♃41'52	0°05'44	opposition	-191 Jun 19 j 10:30	23°♃19'10	0°-16'-53

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:12, page 15

Attention, astronomical year style is used: The year -191 in astronomical counting style is the year 192 BCE in historical counting style.

min. Earth dist.	-191 Jun 18 j 13:51	23° <del>21</del> '14	18.58896 AU	opposition	-183 Jul 23 j 11:38	26° <del>30</del> '11	0°-38'-58
direct	-191 Sep 04 j 02:42	21° <del>20</del> '38		direct	-183 Oct 07 j 09:06	24° <del>30</del> '34	
conjunction	-191 Dec 19 j 19:35	25° <del>22</del> '13	0°-16'-45	conjunction	-182 Jan 20 j 21:45	27° <del>35</del> '46	0°-36'-9
minimum elong	-191 Dec 19 j 19:35	25° <del>22</del> '13	0°16'46	minimum elong	-182 Jan 20 j 21:45	27° <del>35</del> '46	0°36'11
max. Earth dist.	-191 Dec 20 j 17:59	25° <del>25</del> '32	20.61818 AU	max. Earth dist.	-182 Jan 22 j 00:21	28° <del>30</del> '17	20.96782 AU
retrograde	-190 Apr 07 j 09:43	29° <del>27</del> '27		retrograde	-182 Feb 26 j 19:52	0° <del>59</del> '	
min. Earth dist.	-190 Jun 23 j 02:36	27° <del>30</del> '25	18.64704 AU	retrograde	-182 May 10 j 18:28	1° <del>59</del> '49	
opposition	-190 Jun 24 j 00:43	27° <del>28</del> '11	0°-20'-9	opposition	-182 Jul 27 j 21:07	0° <del>00</del> '43	0°-40'-55
direct	-190 Sep 08 j 15:16	25° <del>30</del> '01		min. Earth dist.	-182 Jul 26 j 19:44	0° <del>03</del> '15	18.98064 AU
conjunction	-190 Dec 24 j 02:50	29° <del>30</del> '26	0°-19'-39	direct	-182 Jul 28 j 04:13	30° <del>R</del> ' <del>30</del>	
minimum elong	-190 Dec 24 j 02:50	29° <del>30</del> '26	0°19'40	direct	-182 Oct 11 j 17:50	28° <del>30</del> '49	
max. Earth dist.	-190 Dec 25 j 01:21	29° <del>33</del> '45	20.67515 AU	direct	-182 Dec 20 j 13:18	0° <del>59</del> '	
retrograde	-189 Jan 01 j 11:25	0° <del>38</del> '		conjunction	-181 Jan 25 j 02:58	1° <del>57</del> '46	0°-37'-50
retrograde	-189 Apr 11 j 20:53	3° <del>35</del> '09		minimum elong	-181 Jan 25 j 02:58	1° <del>57</del> '46	0°37'51
opposition	-189 Jun 28 j 14:12	1° <del>35</del> '59	0°-23'-18	max. Earth dist.	-181 Jan 26 j 04:50	2° <del>01</del> '30	20.99169 AU
min. Earth dist.	-189 Jun 27 j 15:32	1° <del>38</del> '15	18.70286 AU	retrograde	-181 May 15 j 01:55	5° <del>59</del> '36	
direct	-189 Aug 14 j 02:36	30° <del>R</del> ' <del>38</del>		min. Earth dist.	-181 Jul 31 j 05:32	4° <del>02</del> '52	19.00270 AU
direct	-189 Sep 13 j 01:36	29° <del>38</del> '08		opposition	-181 Aug 01 j 06:05	4° <del>00</del> '25	0°-42'-40
	-189 Oct 12 j 08:25	0° <del>38</del> '		direct	-181 Oct 15 j 23:22	2° <del>03</del> '55	
conjunction	-189 Dec 28 j 09:50	3° <del>37</del> '29	0°-22'-26	conjunction	-180 Jan 29 j 08:13	5° <del>57</del> '02	0°-39'-20
minimum elong	-189 Dec 28 j 09:50	3° <del>37</del> '29	0°22'27	minimum elong	-180 Jan 29 j 08:13	5° <del>57</del> '02	0°39'21
max. Earth dist.	-189 Dec 29 j 10:16	3° <del>41</del> '04	20.72944 AU	max. Earth dist.	-180 Jan 30 j 11:09	6° <del>00</del> '54	21.01189 AU
retrograde	-188 Apr 15 j 07:44	7° <del>41</del> '41		retrograde	-180 May 18 j 10:53	9° <del>58</del> '42	
min. Earth dist.	-188 Jul 01 j 03:15	5° <del>45</del> '01	18.75551 AU	opposition	-180 Aug 04 j 14:35	7° <del>59</del> '27	0°-44'-13
opposition	-188 Jul 02 j 03:08	5° <del>42</del> '38	0°-26'-19	min. Earth dist.	-180 Aug 03 j 13:08	8° <del>02</del> '00	19.02110 AU
direct	-188 Sep 16 j 12:29	3° <del>45</del> '06		direct	-180 Oct 19 j 07:13	6° <del>03</del> '01	
conjunction	-188 Dec 31 j 16:15	7° <del>43</del> '25	0°-25'-6	conjunction	-179 Feb 01 j 13:09	9° <del>55</del> '44	0°-40'-38
minimum elong	-188 Dec 31 j 16:15	7° <del>43</del> '25	0°25'08	minimum elong	-179 Feb 01 j 13:09	9° <del>55</del> '44	0°40'38
max. Earth dist.	-187 Jan 01 j 16:28	7° <del>46</del> '57	20.78031 AU	max. Earth dist.	-179 Feb 02 j 15:18	9° <del>59</del> '29	21.02853 AU
retrograde	-187 Apr 19 j 18:21	11° <del>47</del> '12		retrograde	-179 May 22 j 18:44	13° <del>57</del> '21	
opposition	-187 Jul 06 j 15:40	9° <del>48</del> '12	0°-29'-11	opposition	-179 Aug 08 j 22:52	11° <del>58</del> '02	0°-45'-32
min. Earth dist.	-187 Jul 05 j 15:43	9° <del>50</del> '36	18.80461 AU	min. Earth dist.	-179 Aug 07 j 22:21	12° <del>00</del> '30	19.03612 AU
direct	-187 Sep 20 j 21:59	7° <del>50</del> '56		direct	-179 Oct 23 j 11:40	10° <del>01</del> '39	
conjunction	-186 Jan 04 j 22:43	11° <del>48</del> '18	0°-27'-38	conjunction	-178 Feb 05 j 18:26	13° <del>54</del> '04	0°-41'-44
minimum elong	-186 Jan 04 j 22:43	11° <del>48</del> '18	0°27'38	minimum elong	-178 Feb 05 j 18:26	13° <del>54</del> '04	0°41'45
max. Earth dist.	-186 Jan 06 j 00:25	11° <del>52</del> '04	20.82726 AU	max. Earth dist.	-178 Feb 06 j 21:24	13° <del>57</del> '56	21.04181 AU
retrograde	-186 Apr 24 j 04:54	15° <del>51</del> '40		retrograde	-178 Feb 25 j 03:47	15° <del>59</del> '	
min. Earth dist.	-186 Jul 10 j 02:31	13° <del>55</del> '13	18.84935 AU	retrograde	-178 May 27 j 03:21	17° <del>55</del> '40	
opposition	-186 Jul 11 j 03:25	13° <del>52</del> '43	0°-31'-54	min. Earth dist.	-178 Aug 12 j 05:16	15° <del>58</del> '51	19.04758 AU
direct	-186 Sep 25 j 07:59	11° <del>55</del> '42		opposition	-178 Aug 13 j 06:29	15° <del>56</del> '19	0°-46'-38
conjunction	-185 Jan 09 j 04:47	15° <del>52</del> '10	0°-30'-1	direct	-178 Sep 06 j 16:02	15° <del>R</del> ' <del>59</del>	
minimum elong	-185 Jan 09 j 04:47	15° <del>52</del> '10	0°30'02	direct	-178 Oct 27 j 18:39	14° <del>00</del> '00	
max. Earth dist.	-185 Jan 10 j 05:48	15° <del>55</del> '49	20.86963 AU	direct	-178 Dec 15 j 19:53	15° <del>59</del> '	
retrograde	-185 Apr 28 j 14:31	19° <del>55</del> '10		conjunction	-177 Feb 09 j 23:42	17° <del>52</del> '14	0°-42'-38
opposition	-185 Jul 15 j 14:46	17° <del>56</del> '14	0°-34'-27	minimum elong	-177 Feb 09 j 23:42	17° <del>52</del> '14	0°42'38
min. Earth dist.	-185 Jul 14 j 14:20	17° <del>58</del> '40	18.88939 AU	max. Earth dist.	-177 Feb 11 j 01:31	17° <del>55</del> '56	21.05146 AU
direct	-185 Sep 29 j 16:25	15° <del>59</del> '23		retrograde	-177 May 31 j 11:44	21° <del>53</del> '53	
conjunction	-184 Jan 13 j 10:44	19° <del>55</del> '02	0°-32'-14	opposition	-177 Aug 17 j 14:06	19° <del>54</del> '31	0°-47'-31
minimum elong	-184 Jan 13 j 10:44	19° <del>55</del> '02	0°32'15	min. Earth dist.	-177 Aug 16 j 14:09	19° <del>56</del> '55	19.05543 AU
max. Earth dist.	-184 Jan 14 j 12:53	19° <del>58</del> '50	20.90713 AU	direct	-177 Oct 31 j 22:36	17° <del>58</del> '15	
retrograde	-184 May 02 j 00:34	23° <del>57</del> '40		conjunction	-176 Feb 14 j 05:09	21° <del>50</del> '23	0°-43'-20
min. Earth dist.	-184 Jul 18 j 00:08	22° <del>01</del> '14	18.92436 AU	minimum elong	-176 Feb 14 j 05:09	21° <del>50</del> '23	0°43'21
opposition	-184 Jul 19 j 01:23	21° <del>58</del> '42	0°-36'-48	max. Earth dist.	-176 Feb 15 j 07:31	21° <del>54</del> '09	21.05739 AU
direct	-184 Oct 03 j 01:57	20° <del>02</del> '00		retrograde	-176 Jun 03 j 20:20	25° <del>52</del> '09	
conjunction	-183 Jan 16 j 16:18	23° <del>56</del> '53	0°-34'-17	opposition	-176 Aug 20 j 21:19	23° <del>52</del> '47	0°-48'-10
minimum elong	-183 Jan 16 j 16:18	23° <del>56</del> '53	0°34'18	min. Earth dist.	-176 Aug 19 j 20:55	23° <del>55</del> '14	19.05930 AU
max. Earth dist.	-183 Jan 17 j 17:44	24° <del>00</del> '34	20.93971 AU	direct	-176 Nov 04 j 04:45	21° <del>56</del> '33	
retrograde	-183 May 06 j 08:53	27° <del>59</del> '13		conjunction	-175 Feb 17 j 10:50	25° <del>48</del> '41	0°-43'-49
min. Earth dist.	-183 Jul 22 j 11:04	26° <del>02</del> '38	18.95472 AU	minimum elong	-175 Feb 17 j 10:50	25° <del>48</del> '41	0°43'51

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:12, page 16

Attention, astronomical year style is used: The year -175 in astronomical counting style is the year 176 BCE in historical counting style.

max. Earth dist.	-175 Feb 18 j 11:49	25° $\approx$ 52'16	21.05923 AU	max. Earth dist.	-167 Mar 22 j 14:21	27° $\approx$ 51'45	20.89575 AU
retrograde	-175 Jun 08 j 04:41	29° $\approx$ 50'39			-167 Apr 30 j 23:21	0° $\approx$	
min. Earth dist.	-175 Aug 24 j 05:48	27° $\approx$ 53'32	19.05902 AU	retrograde	-167 Jul 11 j 03:19	1° $\approx$ 54'18	
opposition	-175 Aug 25 j 04:31	27° $\approx$ 51'15	0°-48'-36		-167 Sep 24 j 00:03	30° $\approx$ R $\approx$	
direct	-175 Nov 08 j 08:55	25° $\approx$ 55'03		opposition	-167 Sep 26 j 10:56	29° $\approx$ 53'57	0°-43'-34
				min. Earth dist.	-167 Sep 25 j 22:25	29° $\approx$ 55'15	18.87646 AU
conjunction	-174 Feb 21 j 17:04	29° $\approx$ 47'18	0°-44'-6	direct	-167 Dec 10 j 04:17	27° $\approx$ 56'29	
minimum elong	-174 Feb 21 j 17:04	29° $\approx$ 47'18	0°44'07		-166 Feb 20 j 10:51	0° $\approx$	
max. Earth dist.	-174 Feb 22 j 18:07	29° $\approx$ 50'52	21.05669 AU				
	-174 Feb 25 j 09:59	0° $\approx$		conjunction	-166 Mar 26 j 09:08	1° $\approx$ 52'15	0°-38'-42
retrograde	-174 Jun 12 j 13:56	3° $\approx$ 49'28		minimum elong	-166 Mar 26 j 09:08	1° $\approx$ 52'15	0°38'43
opposition	-174 Aug 29 j 11:26	1° $\approx$ 50'03	0°-48'-48	max. Earth dist.	-166 Mar 26 j 23:19	1° $\approx$ 54'17	20.85608 AU
min. Earth dist.	-174 Aug 28 j 12:44	1° $\approx$ 52'20	19.05398 AU	retrograde	-166 Jul 15 j 14:34	5° $\approx$ 57'27	
	-174 Oct 28 j 01:03	30° $\approx$ R $\approx$		opposition	-166 Sep 30 j 17:49	3° $\approx$ 56'58	0°-41'-55
direct	-174 Nov 12 j 14:40	29° $\approx$ 53'50		min. Earth dist.	-166 Sep 30 j 05:35	3° $\approx$ 58'14	18.83526 AU
	-174 Nov 27 j 23:47	0° $\approx$		direct	-166 Dec 14 j 11:25	1° $\approx$ 59'14	
conjunction	-173 Feb 25 j 23:33	3° $\approx$ 46'16	0°-44'-11	conjunction	-165 Mar 30 j 19:19	5° $\approx$ 55'49	0°-37'-6
minimum elong	-173 Feb 25 j 23:33	3° $\approx$ 46'16	0°44'12	minimum elong	-165 Mar 30 j 19:19	5° $\approx$ 55'49	0°37'06
max. Earth dist.	-173 Feb 26 j 22:42	3° $\approx$ 49'34	21.04907 AU	max. Earth dist.	-165 Mar 31 j 07:23	5° $\approx$ 57'33	20.81349 AU
retrograde	-173 Jun 16 j 21:45	7° $\approx$ 48'42		retrograde	-165 Jul 19 j 23:54	10° $\approx$ 01'36	
opposition	-173 Sep 02 j 18:20	5° $\approx$ 49'15	0°-48'-45	opposition	-165 Oct 05 j 01:01	8° $\approx$ 00'59	0°-40'-3
min. Earth dist.	-173 Sep 01 j 21:48	5° $\approx$ 51'19	19.04376 AU	min. Earth dist.	-165 Oct 04 j 15:06	8° $\approx$ 02'00	18.79142 AU
direct	-173 Nov 16 j 19:05	3° $\approx$ 52'59		direct	-165 Dec 18 j 16:26	6° $\approx$ 03'00	
conjunction	-172 Mar 01 j 06:35	7° $\approx$ 45'40	0°-44'-2	conjunction	-164 Apr 03 j 06:18	10° $\approx$ 00'29	0°-35'-18
minimum elong	-172 Mar 01 j 06:35	7° $\approx$ 45'40	0°44'02	minimum elong	-164 Apr 03 j 06:18	10° $\approx$ 00'29	0°35'20
max. Earth dist.	-172 Mar 02 j 05:18	7° $\approx$ 48'55	21.03620 AU	max. Earth dist.	-164 Apr 03 j 17:25	10° $\approx$ 02'05	20.76856 AU
retrograde	-172 Jun 20 j 07:34	11° $\approx$ 48'24		retrograde	-164 Jul 23 j 12:16	14° $\approx$ 06'54	
min. Earth dist.	-172 Sep 05 j 04:53	9° $\approx$ 50'54	19.02805 AU	opposition	-164 Oct 08 j 08:22	12° $\approx$ 06'10	0°-37'-58
opposition	-172 Sep 06 j 01:09	9° $\approx$ 48'51	0°-48'-29	min. Earth dist.	-164 Oct 07 j 22:49	12° $\approx$ 07'09	18.74525 AU
direct	-172 Nov 20 j 01:14	7° $\approx$ 52'30		direct	-164 Dec 22 j 00:12	10° $\approx$ 07'56	
conjunction	-171 Mar 05 j 13:47	11° $\approx$ 45'30	0°-43'-40	conjunction	-163 Apr 07 j 17:54	14° $\approx$ 06'25	0°-33'-20
minimum elong	-171 Mar 05 j 13:47	11° $\approx$ 45'30	0°43'42	minimum elong	-163 Apr 07 j 17:54	14° $\approx$ 06'25	0°33'20
max. Earth dist.	-171 Mar 06 j 10:21	11° $\approx$ 48'26	21.01774 AU	max. Earth dist.	-163 Apr 08 j 02:54	14° $\approx$ 07'42	20.72125 AU
retrograde	-171 Jun 24 j 15:06	15° $\approx$ 48'34		retrograde	-163 Jul 27 j 22:46	18° $\approx$ 13'31	
opposition	-171 Sep 10 j 08:05	13° $\approx$ 48'54	0°-47'-58	opposition	-163 Oct 12 j 16:14	16° $\approx$ 12'41	0°-35'-41
min. Earth dist.	-171 Sep 09 j 14:11	13° $\approx$ 50'43	19.00685 AU	min. Earth dist.	-163 Oct 12 j 09:11	16° $\approx$ 13'25	18.69676 AU
direct	-171 Nov 24 j 05:37	11° $\approx$ 52'22		direct	-163 Dec 26 j 05:53	14° $\approx$ 14'13	
conjunction	-170 Mar 09 j 21:40	15° $\approx$ 45'46	0°-43'-6	conjunction	-162 Apr 12 j 06:30	18° $\approx$ 13'47	0°-31'-10
minimum elong	-170 Mar 09 j 21:40	15° $\approx$ 45'46	0°43'06	minimum elong	-162 Apr 12 j 06:30	18° $\approx$ 13'47	0°31'11
max. Earth dist.	-170 Mar 10 j 17:34	15° $\approx$ 48'37	20.99399 AU	max. Earth dist.	-162 Apr 12 j 14:09	18° $\approx$ 14'53	20.67170 AU
retrograde	-170 Jun 29 j 01:08	19° $\approx$ 49'10		retrograde	-162 Aug 01 j 12:27	22° $\approx$ 21'36	
opposition	-170 Sep 14 j 14:38	17° $\approx$ 49'21	0°-47'-13	opposition	-162 Oct 17 j 00:12	20° $\approx$ 20'43	0°-33'-12
min. Earth dist.	-170 Sep 13 j 21:09	17° $\approx$ 51'08	18.98047 AU	min. Earth dist.	-162 Oct 16 j 17:51	20° $\approx$ 21'22	18.64590 AU
direct	-170 Nov 28 j 12:20	15° $\approx$ 52'38		direct	-162 Dec 30 j 14:41	18° $\approx$ 21'59	
conjunction	-169 Mar 14 j 05:47	19° $\approx$ 46'30	0°-42'-18	conjunction	-161 Apr 16 j 19:50	22° $\approx$ 22'45	0°-28'-50
minimum elong	-169 Mar 14 j 05:47	19° $\approx$ 46'30	0°42'20	minimum elong	-161 Apr 16 j 19:50	22° $\approx$ 22'45	0°28'51
max. Earth dist.	-169 Mar 14 j 23:29	19° $\approx$ 49'01	20.96526 AU	max. Earth dist.	-161 Apr 17 j 01:11	22° $\approx$ 23'31	20.61955 AU
retrograde	-169 Jul 03 j 08:36	23° $\approx$ 50'16		retrograde	-161 Aug 06 j 00:04	26° $\approx$ 31'19	
opposition	-169 Sep 18 j 21:26	21° $\approx$ 50'17	0°-46'-14	opposition	-161 Oct 21 j 08:54	24° $\approx$ 30'22	0°-30'-32
min. Earth dist.	-169 Sep 18 j 06:19	21° $\approx$ 51'50	18.94954 AU	min. Earth dist.	-161 Oct 21 j 05:17	24° $\approx$ 30'45	18.59244 AU
direct	-169 Dec 02 j 16:41	19° $\approx$ 53'20		direct	-160 Jan 03 j 21:31	22° $\approx$ 31'23	
conjunction	-168 Mar 17 j 14:18	23° $\approx$ 47'44	0°-41'-19	conjunction	-160 Apr 20 j 09:58	26° $\approx$ 33'22	0°-26'-20
minimum elong	-168 Mar 17 j 14:18	23° $\approx$ 47'44	0°41'20	minimum elong	-160 Apr 20 j 09:58	26° $\approx$ 33'22	0°26'20
max. Earth dist.	-168 Mar 18 j 07:23	23° $\approx$ 50'10	20.93237 AU	max. Earth dist.	-160 Apr 20 j 13:33	26° $\approx$ 33'53	20.56479 AU
retrograde	-168 Jul 06 j 19:04	27° $\approx$ 51'56			-160 Jun 28 j 22:34	0° $\approx$	
opposition	-168 Sep 22 j 04:07	25° $\approx$ 51'47	0°-45'-1	retrograde	-160 Aug 09 j 14:57	0° $\approx$ 842'44	
min. Earth dist.	-168 Sep 21 j 13:15	25° $\approx$ 53'18	18.91468 AU		-160 Sep 20 j 19:52	30° $\approx$ R $\approx$	
direct	-168 Dec 05 j 23:37	23° $\approx$ 54'34		opposition	-160 Oct 24 j 17:58	28° $\approx$ 41'43	0°-27'-41
				min. Earth dist.	-160 Oct 24 j 15:20	28° $\approx$ 41'59	18.53615 AU
conjunction	-167 Mar 21 j 23:22	27° $\approx$ 49'36	0°-40'-6	direct	-159 Jan 07 j 07:29	26° $\approx$ 42'27	
minimum elong	-167 Mar 21 j 23:22	27° $\approx$ 49'36	0°40'07		-159 Apr 11 j 21:16	0° $\approx$	



Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:12, page 17

Attention, astronomical year style is used: The year -159 in astronomical counting style is the year 160 BCE in historical counting style.

conjunction	-159 Apr 25 j 01:10	0°♄45'43	0°-23'-40	direct	-152 Feb 06 j 17:51	26°♄45'35	
minimum elong	-159 Apr 25 j 01:10	0°♄45'43	0°23'41		-152 May 09 j 19:29	0°♂	
max. Earth dist.	-159 Apr 25 j 02:13	0°♄45'53	20.50693 AU				
retrograde	-159 Aug 14 j 04:00	4°♄55'52		conjunction	-152 May 26 j 09:38	0°♂58'51	0°-1'-47
opposition	-159 Oct 29 j 03:35	2°♄54'45	0°-24'-39	minimum elong	-152 May 26 j 09:37	0°♂58'51	0°01'48
min. Earth dist.	-159 Oct 29 j 03:54	2°♄54'43	18.47679 AU	behind sun begin	-152 May 26 j 02:50	0°♂57'52	
direct	-158 Jan 11 j 16:06	0°♄55'09		behind sun end	-152 May 26 j 16:24	0°♂59'50	
				max. Earth dist.	-152 May 25 j 19:38	0°♂56'46	20.05000 AU
conjunction	-158 Apr 29 j 17:14	4°♄59'46	0°-20'-51	retrograde	-152 Sep 13 j 19:44	5°♂14'27	
minimum elong	-158 Apr 29 j 17:15	4°♄59'46	0°20'52	opposition	-152 Nov 27 j 13:44	3°♂12'20	0°00'-2
max. Earth dist.	-158 Apr 29 j 15:58	4°♄59'35	20.44620 AU	min. Earth dist.	-152 Nov 28 j 01:19	3°♂11'06	18.01733 AU
retrograde	-158 Aug 18 j 19:35	9°♄10'42		asc. node	-152 Dec 03 j 05:40	2°♂57'46	
opposition	-158 Nov 02 j 13:39	7°♄09'28	0°-21'-28	direct	-151 Feb 10 j 09:36	1°♂09'52	
min. Earth dist.	-158 Nov 02 j 15:05	7°♄09'19	18.41460 AU				
direct	-157 Jan 16 j 03:12	5°♄09'30		conjunction	-151 May 31 j 07:15	5°♂24'40	0°01'42
				minimum elong	-151 May 31 j 07:15	5°♂24'40	0°01'42
conjunction	-157 May 04 j 09:59	9°♄15'29	0°-17'-55	behind sun begin	-151 May 31 j 00:27	5°♂23'41	
minimum elong	-157 May 04 j 09:59	9°♄15'29	0°17'56	behind sun end	-151 May 31 j 14:02	5°♂25'39	
max. Earth dist.	-157 May 04 j 06:25	9°♄14'58	20.38267 AU	max. Earth dist.	-151 May 30 j 16:21	5°♂22'27	19.98526 AU
retrograde	-157 Aug 23 j 09:53	13°♄27'12		retrograde	-151 Sep 18 j 13:18	9°♂41'01	
opposition	-157 Nov 07 j 00:22	11°♄25'49	0°-18'-9	opposition	-151 Dec 02 j 03:58	7°♂38'51	0°03'43
min. Earth dist.	-157 Nov 07 j 04:32	11°♄25'23	18.34998 AU	min. Earth dist.	-151 Dec 02 j 17:20	7°♂37'24	17.95354 AU
direct	-156 Jan 20 j 13:36	9°♄25'27		direct	-150 Feb 15 j 01:01	5°♂36'00	
conjunction	-156 May 08 j 03:33	13°♄32'50	0°-14'-51	conjunction	-150 Jun 05 j 05:30	9°♂52'20	0°05'07
minimum elong	-156 May 08 j 03:33	13°♄32'50	0°14'53	minimum elong	-150 Jun 05 j 05:29	9°♂52'20	0°05'07
behind sun begin	-156 May 08 j 01:15	13°♄32'30		behind sun begin	-150 Jun 04 j 22:55	9°♂51'22	
behind sun end	-156 May 08 j 05:51	13°♄33'10		behind sun end	-150 Jun 05 j 12:04	9°♂53'18	
max. Earth dist.	-156 May 07 j 21:37	13°♄31'59	20.31728 AU	max. Earth dist.	-150 Jun 04 j 12:03	9°♂49'43	19.92257 AU
	-156 Jun 02 j 08:20	15°♄		retrograde	-150 Sep 23 j 08:07	14°♂09'26	
retrograde	-156 Aug 27 j 02:02	17°♄45'20		opposition	-150 Dec 06 j 18:59	12°♂07'13	0°07'30
opposition	-156 Nov 10 j 11:22	15°♄43'48	0°-14'-42	min. Earth dist.	-150 Dec 07 j 09:18	12°♂05'40	17.89199 AU
min. Earth dist.	-156 Nov 10 j 16:36	15°♄43'15	18.28383 AU	direct	-149 Feb 19 j 18:40	10°♂04'01	
	-156 Nov 28 j 01:12	15°♄		max. Earth dist.	-149 Jun 09 j 10:38	14°♂19'13	19.86203 AU
direct	-155 Jan 24 j 01:55	13°♄43'01					
	-155 Mar 20 j 13:49	15°♄		conjunction	-149 Jun 10 j 04:29	14°♂21'54	0°08'30
				minimum elong	-149 Jun 10 j 04:29	14°♂21'54	0°08'30
conjunction	-155 May 12 j 21:59	17°♄51'50	0°-11'-42	behind sun begin	-149 Jun 09 j 22:35	14°♂21'02	
minimum elong	-155 May 12 j 22:00	17°♄51'50	0°11'43	behind sun end	-149 Jun 10 j 10:23	14°♂22'46	
behind sun begin	-155 May 12 j 17:18	17°♄51'10		retrograde	-149 Sep 28 j 03:12	18°♂39'45	
behind sun end	-155 May 13 j 02:41	17°♄52'30		opposition	-149 Dec 11 j 10:49	16°♂37'31	0°11'16
max. Earth dist.	-155 May 12 j 14:11	17°♄50'42	20.25050 AU	min. Earth dist.	-149 Dec 12 j 02:37	16°♂35'49	17.83259 AU
retrograde	-155 Aug 31 j 17:26	22°♄05'06		direct	-148 Feb 24 j 11:47	14°♂34'01	
opposition	-155 Nov 14 j 23:07	20°♄03'25	0°-11'-8	max. Earth dist.	-148 Jun 13 j 07:45	18°♂50'18	19.80379 AU
min. Earth dist.	-155 Nov 15 j 06:50	20°♄02'35	18.21668 AU				
direct	-154 Jan 28 j 14:06	18°♄02'12		conjunction	-148 Jun 14 j 04:15	18°♂53'24	0°11'52
				minimum elong	-148 Jun 14 j 04:14	18°♂53'24	0°11'52
conjunction	-154 May 17 j 17:08	22°♄12'29	0°-8'-28	behind sun begin	-148 Jun 13 j 23:38	18°♂52'43	
minimum elong	-154 May 17 j 17:08	22°♄12'29	0°08'29	behind sun end	-148 Jun 14 j 08:51	18°♂54'05	
behind sun begin	-154 May 17 j 11:14	22°♄11'38		retrograde	-148 Oct 01 j 23:28	23°♂11'59	
behind sun end	-154 May 17 j 23:02	22°♄13'20		opposition	-148 Dec 15 j 03:16	21°♂09'45	0°15'00
max. Earth dist.	-154 May 17 j 06:53	22°♄10'59	20.18325 AU	min. Earth dist.	-148 Dec 15 j 20:23	21°♂07'54	17.77548 AU
retrograde	-154 Sep 05 j 09:59	26°♄26'32		direct	-147 Feb 28 j 06:44	19°♂05'56	
opposition	-154 Nov 19 j 11:15	24°♄24'41	0°-7'-30	max. Earth dist.	-147 Jun 18 j 08:04	23°♂23'39	19.74755 AU
min. Earth dist.	-154 Nov 19 j 19:55	24°♄23'45	18.14945 AU				
direct	-153 Feb 02 j 03:57	22°♄23'02		conjunction	-147 Jun 19 j 05:01	23°♂26'49	0°15'11
				minimum elong	-147 Jun 19 j 05:00	23°♂26'49	0°15'11
conjunction	-153 May 22 j 13:06	26°♄34'48	0°-5'-10	behind sun begin	-147 Jun 19 j 03:09	23°♂26'33	
minimum elong	-153 May 22 j 13:06	26°♄34'48	0°05'10	behind sun end	-147 Jun 19 j 06:52	23°♂27'06	
behind sun begin	-153 May 22 j 06:32	26°♄33'51		retrograde	-147 Oct 06 j 20:36	27°♂46'04	
behind sun end	-153 May 22 j 19:40	26°♄35'45		opposition	-147 Dec 19 j 20:42	25°♂43'52	0°18'40
max. Earth dist.	-153 May 22 j 01:32	26°♄33'06	20.11611 AU	min. Earth dist.	-147 Dec 20 j 15:08	25°♂41'52	17.72018 AU
	-153 Jul 27 j 22:45	0°♂		direct	-146 Mar 05 j 02:01	23°♂39'45	
retrograde	-153 Sep 10 j 02:26	0°♂49'37		max. Earth dist.	-146 Jun 23 j 06:29	27°♂58'28	19.69314 AU
	-153 Oct 24 j 20:50	30°♄					
opposition	-153 Nov 24 j 00:12	28°♄47'39	0°-3'-48	conjunction	-146 Jun 24 j 06:10	28°♂02'04	0°18'26
min. Earth dist.	-153 Nov 24 j 10:55	28°♄46'29	18.08274 AU	minimum elong	-146 Jun 24 j 06:10	28°♂02'04	0°18'27

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:13, page 18

Attention, astronomical year style is used: The year -146 in astronomical counting style is the year 147 BCE in historical counting style.

	-146 Jul 27 j 13:47	0°♄		conjunction	-138 Aug 02 j 06:03	5°♁32'24	0°38'55
retrograde	-146 Oct 11 j 17:46	2°♄21'58		minimum elong	-138 Aug 02 j 06:03	5°♁32'24	0°38'56
opposition	-146 Dec 24 j 14:54	0°♄19'45	0°22'15	retrograde	-138 Nov 18 j 07:46	9°♁55'12	
min. Earth dist.	-146 Dec 25 j 10:51	0°♄17'35	17.66683 AU	opposition	-137 Jan 30 j 17:01	7°♁52'49	0°44'17
	-145 Jan 01 j 05:16	30°♁II		min. Earth dist.	-137 Jan 31 j 17:31	7°♁50'08	17.35438 AU
direct	-145 Mar 09 j 22:15	28°♁II15'19		direct	-137 Apr 16 j 19:59	5°♁46'22	
	-145 May 13 j 23:55	0°♄		max. Earth dist.	-137 Aug 06 j 05:35	10°♁13'16	19.34513 AU
max. Earth dist.	-145 Jun 28 j 08:07	2°♄35'21	19.64065 AU				
				conjunction	-137 Aug 07 j 09:28	10°♁17'38	0°40'29
conjunction	-145 Jun 29 j 08:08	2°♄39'01	0°21'35	minimum elong	-137 Aug 07 j 09:28	10°♁17'38	0°40'28
minimum elong	-145 Jun 29 j 08:07	2°♄39'01	0°21'35	retrograde	-137 Nov 23 j 08:33	14°♁40'32	
retrograde	-145 Oct 16 j 16:28	6°♄59'29		opposition	-136 Feb 04 j 16:40	12°♁38'12	0°45'53
opposition	-145 Dec 29 j 09:51	4°♄57'16	0°25'42	min. Earth dist.	-136 Feb 05 j 15:44	12°♁35'41	17.33843 AU
min. Earth dist.	-145 Dec 30 j 06:39	4°♄55'00	17.61538 AU	direct	-136 Apr 20 j 23:56	10°♁31'43	
direct	-144 Mar 13 j 19:43	2°♄52'31		max. Earth dist.	-136 Aug 10 j 10:19	14°♁59'14	19.33230 AU
max. Earth dist.	-144 Jul 02 j 07:59	7°♄13'27	19.59029 AU		-136 Aug 10 j 15:12	15°♁	
				conjunction	-136 Aug 11 j 12:57	15°♁03'25	0°41'46
conjunction	-144 Jul 03 j 10:24	7°♄17'30	0°24'37	minimum elong	-136 Aug 11 j 12:57	15°♁03'25	0°41'46
minimum elong	-144 Jul 03 j 10:24	7°♄17'30	0°24'37	retrograde	-136 Nov 27 j 07:07	19°♁26'21	
retrograde	-144 Oct 20 j 13:57	11°♄38'30		opposition	-135 Feb 08 j 17:06	17°♁24'07	0°47'10
opposition	-143 Jan 02 j 05:35	9°♄36'14	0°29'01	min. Earth dist.	-135 Feb 09 j 16:36	17°♁21'34	17.32872 AU
min. Earth dist.	-143 Jan 03 j 03:57	9°♄33'48	17.56633 AU	direct	-135 Apr 26 j 01:57	15°♁17'39	
direct	-143 Mar 18 j 17:06	7°♄31'10					
max. Earth dist.	-143 Jul 07 j 10:44	11°♄53'18	19.54251 AU	conjunction	-135 Aug 16 j 16:06	19°♁49'38	0°42'46
				minimum elong	-135 Aug 16 j 16:06	19°♁49'38	0°42'47
conjunction	-143 Jul 08 j 13:18	11°♄57'23	0°27'30	max. Earth dist.	-135 Aug 15 j 13:29	19°♁45'27	19.32570 AU
minimum elong	-143 Jul 08 j 13:18	11°♄57'23	0°27'31	retrograde	-135 Dec 02 j 08:11	24°♁12'33	
retrograde	-143 Oct 25 j 13:50	16°♄18'50		opposition	-134 Feb 13 j 17:48	22°♁10'27	0°48'07
opposition	-142 Jan 07 j 01:53	14°♄16'32	0°32'09	min. Earth dist.	-134 Feb 14 j 15:48	22°♁08'04	17.32503 AU
min. Earth dist.	-142 Jan 08 j 00:35	14°♄14'04	17.52000 AU	direct	-134 May 01 j 06:13	20°♁04'02	
direct	-142 Mar 23 j 16:46	12°♄11'11					
				conjunction	-134 Aug 21 j 19:13	24°♁36'11	0°43'29
conjunction	-142 Jul 13 j 16:24	16°♄38'30	0°30'13	minimum elong	-134 Aug 21 j 19:13	24°♁36'11	0°43'29
minimum elong	-142 Jul 13 j 16:24	16°♄38'30	0°30'13	max. Earth dist.	-134 Aug 20 j 18:28	24°♁32'18	19.32483 AU
max. Earth dist.	-142 Jul 12 j 12:11	16°♄34'09	19.49784 AU	retrograde	-134 Dec 07 j 07:41	28°♁58'59	
retrograde	-142 Oct 30 j 11:24	21°♄00'21		opposition	-133 Feb 18 j 19:05	26°♁57'02	0°48'45
opposition	-141 Jan 11 j 23:00	18°♄58'01	0°35'04	min. Earth dist.	-133 Feb 19 j 17:13	26°♁54'38	17.32690 AU
min. Earth dist.	-141 Jan 12 j 23:05	18°♄55'23	17.47731 AU	direct	-133 May 06 j 08:24	24°♁50'42	
direct	-141 Mar 28 j 15:16	16°♄52'21					
				conjunction	-133 Aug 26 j 21:47	29°♁22'51	0°43'53
conjunction	-141 Jul 18 j 19:35	21°♄20'42	0°32'44	minimum elong	-133 Aug 26 j 21:47	29°♁22'51	0°43'54
minimum elong	-141 Jul 18 j 19:35	21°♄20'42	0°32'44	max. Earth dist.	-133 Aug 25 j 20:54	29°♁18'56	19.32937 AU
max. Earth dist.	-141 Jul 17 j 15:32	21°♄16'21	19.45712 AU	retrograde	-133 Sep 05 j 17:55	0°♁	
retrograde	-141 Nov 04 j 11:49	25°♄42'53		retrograde	-133 Dec 12 j 09:04	3°♁45'29	
opposition	-140 Jan 16 j 20:35	23°♄40'30	0°37'46	opposition	-132 Feb 23 j 20:33	1°♁43'39	0°49'03
min. Earth dist.	-140 Jan 17 j 20:17	23°♄37'55	17.43871 AU	min. Earth dist.	-132 Feb 24 j 17:15	1°♁41'24	17.33393 AU
direct	-140 Apr 01 j 16:26	21°♄34'35			-132 Apr 10 j 18:10	30°♁♁	
				direct	-132 May 10 j 12:31	29°♁37'24	
conjunction	-140 Jul 22 j 23:04	26°♄03'50	0°35'02		-132 Jun 08 j 19:56	0°♁	
minimum elong	-140 Jul 22 j 23:04	26°♄03'50	0°35'02	max. Earth dist.	-132 Aug 30 j 01:30	4°♁05'49	19.33874 AU
max. Earth dist.	-140 Jul 21 j 18:20	25°♄59'22	19.42078 AU				
	-140 Oct 08 j 15:21	0°♁		conjunction	-132 Aug 31 j 00:17	4°♁09'25	0°44'00
retrograde	-140 Nov 08 j 09:27	0°♁26'17		minimum elong	-132 Aug 31 j 00:17	4°♁09'25	0°43'59
	-140 Dec 09 j 14:15	30°♁♁		retrograde	-132 Dec 16 j 08:43	8°♁31'45	
opposition	-139 Jan 20 j 18:46	28°♄23'52	0°40'13	opposition	-131 Feb 27 j 22:19	6°♁30'03	0°49'00
min. Earth dist.	-139 Jan 21 j 19:39	28°♄21'09	17.40499 AU	min. Earth dist.	-131 Feb 28 j 18:46	6°♁27'50	17.34555 AU
direct	-139 Apr 06 j 16:11	26°♄17'43		direct	-131 May 15 j 15:06	4°♁23'55	
	-139 Jul 15 j 07:03	0°♁		max. Earth dist.	-131 Sep 04 j 03:21	8°♁52'01	19.35270 AU
max. Earth dist.	-139 Jul 26 j 22:04	0°♁43'19	19.38970 AU				
				conjunction	-131 Sep 05 j 02:10	8°♁55'37	0°43'48
conjunction	-139 Jul 28 j 02:37	0°♁47'46	0°37'06	minimum elong	-131 Sep 05 j 02:10	8°♁55'37	0°43'48
minimum elong	-139 Jul 28 j 02:37	0°♁47'46	0°37'06	retrograde	-131 Dec 21 j 09:23	13°♁17'37	
retrograde	-139 Nov 13 j 10:03	5°♁10'25		opposition	-130 Mar 05 j 00:18	11°♁16'00	0°48'36
opposition	-138 Jan 25 j 17:32	3°♁08'00	0°42'23	min. Earth dist.	-130 Mar 05 j 19:23	11°♁13'56	17.36177 AU
min. Earth dist.	-138 Jan 26 j 17:22	3°♁05'24	17.37667 AU	direct	-130 May 20 j 19:20	9°♁09'59	
direct	-138 Apr 11 j 19:03	1°♁01'41		max. Earth dist.	-130 Sep 09 j 07:03	13°♁37'59	19.37107 AU
max. Earth dist.	-138 Aug 01 j 01:59	5°♁28'01	19.36423 AU				

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:13, page 19

Attention, astronomical year style is used: The year -130 in astronomical counting style is the year 131 BCE in historical counting style.

conjunction	-130 Sep 10 j 03:29	13° $\mathbb{M}$ 41'13	0°43'18	minimum elong	-122 Oct 17 j 10:02	21° $\mathbb{L}$ 02'48	0°29'39
minimum elong	-130 Sep 10 j 03:29	13° $\mathbb{M}$ 41'13	0°43'18	max. Earth dist.	-122 Oct 17 j 04:45	21° $\mathbb{L}$ 01'59	19.67944 AU
retrograde	-130 Dec 26 j 08:27	18° $\mathbb{M}$ 02'48		retrograde	-121 Feb 01 j 09:52	25° $\mathbb{L}$ 19'14	
opposition	-129 Mar 10 j 02:22	16° $\mathbb{M}$ 01'15	0°47'52	opposition	-121 Apr 17 j 11:32	23° $\mathbb{L}$ 18'24	0°31'33
min. Earth dist.	-129 Mar 10 j 20:31	15° $\mathbb{M}$ 59'18	17.38217 AU	min. Earth dist.	-121 Apr 17 j 14:31	23° $\mathbb{L}$ 18'05	17.70803 AU
direct	-129 May 25 j 22:50	13° $\mathbb{M}$ 55'24		direct	-121 Jul 03 j 19:05	21° $\mathbb{L}$ 14'40	
max. Earth dist.	-129 Sep 14 j 08:04	18° $\mathbb{M}$ 22'50	19.39369 AU				
conjunction	-129 Sep 15 j 04:08	18° $\mathbb{M}$ 26'00	0°42'30	conjunction	-121 Oct 22 j 04:09	25° $\mathbb{L}$ 36'28	0°26'59
minimum elong	-129 Sep 15 j 04:08	18° $\mathbb{M}$ 26'00	0°42'29	minimum elong	-121 Oct 22 j 04:09	25° $\mathbb{L}$ 36'28	0°26'59
retrograde	-129 Dec 31 j 07:32	22° $\mathbb{M}$ 47'05		max. Earth dist.	-121 Oct 22 j 01:26	25° $\mathbb{L}$ 36'03	19.73760 AU
opposition	-128 Mar 14 j 04:11	20° $\mathbb{M}$ 45'36	0°46'49	retrograde	-120 Feb 06 j 04:05	29° $\mathbb{L}$ 52'08	
min. Earth dist.	-128 Mar 14 j 21:10	20° $\mathbb{M}$ 43'47	17.40696 AU	opposition	-120 Apr 21 j 11:04	27° $\mathbb{L}$ 51'30	0°28'29
direct	-128 May 30 j 02:59	18° $\mathbb{M}$ 39'53		min. Earth dist.	-120 Apr 21 j 13:07	27° $\mathbb{L}$ 51'17	17.76768 AU
max. Earth dist.	-128 Sep 18 j 10:34	23° $\mathbb{M}$ 06'57	19.42066 AU	direct	-120 Jul 07 j 16:49	25° $\mathbb{L}$ 48'12	
					-120 Oct 23 j 14:00	0° $\mathbb{M}$	
conjunction	-128 Sep 19 j 04:14	23° $\mathbb{M}$ 09'44	0°41'25	conjunction	-120 Oct 25 j 21:24	0° $\mathbb{M}$ 08'36	0°24'10
minimum elong	-128 Sep 19 j 04:14	23° $\mathbb{M}$ 09'44	0°41'25	minimum elong	-120 Oct 25 j 21:24	0° $\mathbb{M}$ 08'36	0°24'10
retrograde	-127 Jan 04 j 05:37	27° $\mathbb{M}$ 30'16		max. Earth dist.	-120 Oct 25 j 20:16	0° $\mathbb{M}$ 08'26	19.79863 AU
opposition	-127 Mar 19 j 06:06	25° $\mathbb{M}$ 28'49	0°45'27	retrograde	-119 Feb 10 j 00:14	4° $\mathbb{M}$ 23'31	
min. Earth dist.	-127 Mar 19 j 21:25	25° $\mathbb{M}$ 27'11	17.43594 AU	opposition	-119 Apr 26 j 10:10	2° $\mathbb{M}$ 23'03	0°25'15
direct	-127 Jun 04 j 07:19	23° $\mathbb{M}$ 23'17		min. Earth dist.	-119 Apr 26 j 09:12	2° $\mathbb{M}$ 23'09	17.82973 AU
max. Earth dist.	-127 Sep 23 j 10:42	27° $\mathbb{M}$ 49'38	19.45192 AU	direct	-119 Jul 12 j 16:28	0° $\mathbb{M}$ 20'12	
conjunction	-127 Sep 24 j 03:16	27° $\mathbb{M}$ 52'14	0°40'03	conjunction	-119 Oct 30 j 13:49	4° $\mathbb{M}$ 39'10	0°21'13
minimum elong	-127 Sep 24 j 03:16	27° $\mathbb{M}$ 52'14	0°40'03	minimum elong	-119 Oct 30 j 13:49	4° $\mathbb{M}$ 39'10	0°21'12
	-127 Oct 29 j 08:39	0° $\mathbb{L}$		max. Earth dist.	-119 Oct 30 j 15:27	4° $\mathbb{M}$ 39'25	19.86157 AU
retrograde	-126 Jan 09 j 03:10	2° $\mathbb{L}$ 12'10		retrograde	-118 Feb 14 j 18:00	8° $\mathbb{M}$ 53'19	
opposition	-126 Mar 24 j 07:51	0° $\mathbb{L}$ 10'45	0°43'46	opposition	-118 May 01 j 08:56	6° $\mathbb{M}$ 53'01	0°21'53
min. Earth dist.	-126 Mar 24 j 21:54	0° $\mathbb{L}$ 09'15	17.46952 AU	min. Earth dist.	-118 May 01 j 07:06	6° $\mathbb{M}$ 53'13	17.89343 AU
	-126 Mar 28 j 12:49	30° $\mathbb{R}$ $\mathbb{M}$		direct	-118 Jul 17 j 13:15	4° $\mathbb{M}$ 50'36	
direct	-126 Jun 09 j 10:29	28° $\mathbb{M}$ 05'24					
	-126 Aug 16 j 19:18	0° $\mathbb{L}$		conjunction	-118 Nov 04 j 05:27	9° $\mathbb{M}$ 08'05	0°18'08
max. Earth dist.	-126 Sep 28 j 11:37	2° $\mathbb{L}$ 31'09	19.48790 AU	minimum elong	-118 Nov 04 j 05:27	9° $\mathbb{M}$ 08'05	0°18'09
conjunction	-126 Sep 29 j 01:35	2° $\mathbb{L}$ 33'20	0°38'25	max. Earth dist.	-118 Nov 04 j 08:14	9° $\mathbb{M}$ 08'30	19.92587 AU
minimum elong	-126 Sep 29 j 01:35	2° $\mathbb{L}$ 33'20	0°38'26	retrograde	-117 Feb 19 j 12:43	13° $\mathbb{M}$ 21'26	
retrograde	-125 Jan 14 j 00:39	6° $\mathbb{L}$ 52'36		opposition	-117 May 06 j 06:46	11° $\mathbb{M}$ 21'18	0°18'24
opposition	-125 Mar 29 j 09:12	4° $\mathbb{L}$ 51'15	0°41'48	min. Earth dist.	-117 May 06 j 02:12	11° $\mathbb{M}$ 21'46	17.95810 AU
min. Earth dist.	-125 Mar 29 j 20:49	4° $\mathbb{L}$ 50'01	17.50777 AU	direct	-117 Jul 22 j 11:35	9° $\mathbb{M}$ 19'17	
direct	-125 Jun 14 j 14:15	2° $\mathbb{L}$ 46'07					
conjunction	-125 Oct 03 j 22:58	7° $\mathbb{L}$ 12'57	0°36'33	conjunction	-117 Nov 08 j 20:25	13° $\mathbb{M}$ 35'17	0°14'59
minimum elong	-125 Oct 03 j 22:58	7° $\mathbb{L}$ 12'57	0°36'33	minimum elong	-117 Nov 08 j 20:25	13° $\mathbb{M}$ 35'17	0°14'58
max. Earth dist.	-125 Oct 03 j 10:48	7° $\mathbb{L}$ 11'03	19.52862 AU	behind sun begin	-117 Nov 08 j 17:46	13° $\mathbb{M}$ 34'53	
retrograde	-124 Jan 18 j 20:52	11° $\mathbb{L}$ 31'32		behind sun end	-117 Nov 08 j 23:04	13° $\mathbb{M}$ 35'41	
opposition	-124 Apr 02 j 10:23	9° $\mathbb{L}$ 30'15	0°39'35	max. Earth dist.	-117 Nov 09 j 01:49	13° $\mathbb{M}$ 36'06	19.99067 AU
min. Earth dist.	-124 Apr 02 j 20:41	9° $\mathbb{L}$ 29'10	17.55098 AU		-117 Dec 02 j 05:45	15° $\mathbb{M}$	
direct	-124 Jun 18 j 15:45	7° $\mathbb{L}$ 25'24		retrograde	-116 Feb 24 j 05:25	17° $\mathbb{M}$ 47'49	
				opposition	-116 May 10 j 04:17	15° $\mathbb{M}$ 47'48	0°14'50
conjunction	-124 Oct 07 j 19:31	11° $\mathbb{L}$ 51'04	0°34'27	min. Earth dist.	-116 May 09 j 22:56	15° $\mathbb{M}$ 48'21	18.02296 AU
minimum elong	-124 Oct 07 j 19:31	11° $\mathbb{L}$ 51'04	0°34'27		-116 May 30 j 01:41	15° $\mathbb{R}$ $\mathbb{M}$	
max. Earth dist.	-124 Oct 07 j 09:47	11° $\mathbb{L}$ 49'32	19.57432 AU	direct	-116 Jul 26 j 07:54	13° $\mathbb{M}$ 46'12	
retrograde	-123 Jan 22 j 17:53	16° $\mathbb{L}$ 08'56			-116 Sep 18 j 18:45	15° $\mathbb{M}$	
opposition	-123 Apr 07 j 11:05	14° $\mathbb{L}$ 07'46	0°37'07	conjunction	-116 Nov 12 j 10:20	18° $\mathbb{M}$ 00'39	0°11'45
min. Earth dist.	-123 Apr 07 j 18:25	14° $\mathbb{L}$ 07'00	17.59894 AU	minimum elong	-116 Nov 12 j 10:20	18° $\mathbb{M}$ 00'39	0°11'45
direct	-123 Jun 23 j 18:29	12° $\mathbb{L}$ 03'15		behind sun begin	-116 Nov 12 j 05:39	17° $\mathbb{M}$ 59'57	
				behind sun end	-116 Nov 12 j 15:01	18° $\mathbb{M}$ 01'21	
conjunction	-123 Oct 12 j 15:17	16° $\mathbb{L}$ 27'40	0°32'09	max. Earth dist.	-116 Nov 12 j 16:33	18° $\mathbb{M}$ 01'35	20.05553 AU
minimum elong	-123 Oct 12 j 15:17	16° $\mathbb{L}$ 27'40	0°32'09	retrograde	-115 Feb 27 j 22:28	22° $\mathbb{M}$ 12'23	
max. Earth dist.	-123 Oct 12 j 07:53	16° $\mathbb{L}$ 26'31	19.62468 AU	opposition	-115 May 15 j 01:02	20° $\mathbb{M}$ 12'28	0°11'12
retrograde	-122 Jan 27 j 13:06	20° $\mathbb{L}$ 44'50		min. Earth dist.	-115 May 14 j 17:05	20° $\mathbb{M}$ 13'17	18.08768 AU
opposition	-122 Apr 12 j 11:38	18° $\mathbb{L}$ 43'49	0°34'26	direct	-115 Jul 31 j 04:47	18° $\mathbb{M}$ 11'14	
min. Earth dist.	-122 Apr 12 j 17:42	18° $\mathbb{L}$ 43'11	17.65155 AU				
direct	-122 Jun 28 j 17:53	16° $\mathbb{L}$ 39'41		conjunction	-115 Nov 16 j 23:39	22° $\mathbb{M}$ 24'08	0°08'28
conjunction	-122 Oct 17 j 10:02	21° $\mathbb{L}$ 02'48	0°29'39	minimum elong	-115 Nov 16 j 23:39	22° $\mathbb{M}$ 24'08	0°08'28
				behind sun begin	-115 Nov 16 j 17:53	22° $\mathbb{M}$ 23'17	
				behind sun end	-115 Nov 17 j 05:25	22° $\mathbb{M}$ 25'00	

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:13, page 20

Attention, astronomical year style is used: The year -115 in astronomical counting style is the year 116 BCE in historical counting style.

max. Earth dist.	-115 Nov 17 j 08:35	22° $\mathbb{M}$ 25'29	20.12000 AU	opposition	-108 Jun 15 j 05:15	20° $\mathbb{A}$ 11'12	0°-14'-3
retrograde	-114 Mar 04 j 13:32	26° $\mathbb{M}$ 35'02		direct	-108 Aug 31 j 00:56	18° $\mathbb{A}$ 12'19	
opposition	-114 May 19 j 21:08	24° $\mathbb{M}$ 35'11	0°07'31				
min. Earth dist.	-114 May 19 j 12:16	24° $\mathbb{M}$ 36'05	18.15191 AU	conjunction	-108 Dec 15 j 22:12	22° $\mathbb{A}$ 15'06	0°-14'-14
direct	-114 Aug 05 j 00:25	22° $\mathbb{M}$ 34'18		minimum elong	-108 Dec 15 j 22:12	22° $\mathbb{A}$ 15'06	0°14'15
				behind sun begin	-108 Dec 15 j 18:56	22° $\mathbb{A}$ 14'37	
conjunction	-114 Nov 21 j 11:53	26° $\mathbb{M}$ 45'39	0°05'11	behind sun end	-108 Dec 16 j 01:28	22° $\mathbb{A}$ 15'34	
minimum elong	-114 Nov 21 j 11:52	26° $\mathbb{M}$ 45'39	0°05'11	max. Earth dist.	-108 Dec 16 j 18:07	22° $\mathbb{A}$ 18'03	20.56102 AU
behind sun begin	-114 Nov 21 j 05:32	26° $\mathbb{M}$ 44'42		retrograde	-107 Apr 03 j 09:00	26° $\mathbb{A}$ 20'50	
behind sun end	-114 Nov 21 j 18:13	26° $\mathbb{M}$ 46'35		opposition	-107 Jun 19 j 20:14	24° $\mathbb{A}$ 21'28	0°-17'-25
max. Earth dist.	-114 Nov 21 j 21:31	26° $\mathbb{M}$ 47'05	20.18404 AU	min. Earth dist.	-107 Jun 18 j 23:29	24° $\mathbb{A}$ 23'33	18.59117 AU
	-113 Jan 21 j 09:19	0° $\mathbb{A}$		direct	-107 Sep 04 j 13:03	22° $\mathbb{A}$ 22'57	
retrograde	-113 Mar 09 j 04:36	0° $\mathbb{A}$ 55'43					
	-113 Apr 27 j 01:36	30° $\mathbb{R}$ $\mathbb{M}$		conjunction	-107 Dec 20 j 06:02	26° $\mathbb{A}$ 24'31	0°-17'-13
opposition	-113 May 24 j 16:21	28° $\mathbb{M}$ 55'54	0°03'50	minimum elong	-107 Dec 20 j 06:02	26° $\mathbb{A}$ 24'31	0°17'14
min. Earth dist.	-113 May 24 j 05:06	28° $\mathbb{M}$ 57'03	18.21573 AU	max. Earth dist.	-107 Dec 21 j 04:21	26° $\mathbb{A}$ 27'49	20.62065 AU
direct	-113 Aug 09 j 19:10	26° $\mathbb{M}$ 55'20			-106 Mar 04 j 07:08	0° $\mathbb{B}$	
	-113 Nov 07 j 20:41	0° $\mathbb{A}$		retrograde	-106 Apr 07 j 19:52	0° $\mathbb{B}$ 29'41	
					-106 May 13 j 09:19	30° $\mathbb{R}$ $\mathbb{A}$	
conjunction	-113 Nov 25 j 23:27	1° $\mathbb{A}$ 05'08	0°01'51	opposition	-106 Jun 24 j 10:25	28° $\mathbb{A}$ 30'26	0°-20'-40
minimum elong	-113 Nov 25 j 23:28	1° $\mathbb{A}$ 05'08	0°01'51	min. Earth dist.	-106 Jun 23 j 12:31	28° $\mathbb{A}$ 32'38	18.64969 AU
behind sun begin	-113 Nov 25 j 16:55	1° $\mathbb{A}$ 04'10		direct	-106 Sep 09 j 01:38	26° $\mathbb{A}$ 32'17	
behind sun end	-113 Nov 26 j 06:00	1° $\mathbb{A}$ 06'06			-106 Dec 15 j 07:21	0° $\mathbb{B}$	
max. Earth dist.	-113 Nov 26 j 11:56	1° $\mathbb{A}$ 07'01	20.24758 AU				
retrograde	-112 Mar 12 j 18:01	5° $\mathbb{A}$ 14'23		conjunction	-106 Dec 24 j 13:16	0° $\mathbb{B}$ 32'42	0°-20'-6
opposition	-112 May 28 j 10:47	3° $\mathbb{A}$ 14'36	0°00'10	minimum elong	-106 Dec 24 j 13:16	0° $\mathbb{B}$ 32'42	0°20'07
min. Earth dist.	-112 May 27 j 22:22	3° $\mathbb{A}$ 15'52	18.27911 AU	max. Earth dist.	-106 Dec 25 j 11:36	0° $\mathbb{B}$ 35'59	20.67790 AU
desc. node	-112 Jun 13 j 17:53	2° $\mathbb{A}$ 35'31		retrograde	-105 Apr 12 j 07:25	4° $\mathbb{B}$ 37'21	
direct	-112 Aug 13 j 13:07	1° $\mathbb{A}$ 14'21		min. Earth dist.	-105 Jun 28 j 01:28	2° $\mathbb{B}$ 40'28	18.70560 AU
				opposition	-105 Jun 29 j 00:05	2° $\mathbb{B}$ 38'12	0°-23'-48
conjunction	-112 Nov 29 j 10:05	5° $\mathbb{A}$ 22'38	0°-1'-32	direct	-105 Sep 13 j 11:46	0° $\mathbb{B}$ 40'22	
minimum elong	-112 Nov 29 j 10:05	5° $\mathbb{A}$ 22'38	0°01'34				
behind sun begin	-112 Nov 29 j 03:33	5° $\mathbb{A}$ 21'41		conjunction	-105 Dec 28 j 20:16	4° $\mathbb{B}$ 39'43	0°-22'-52
behind sun end	-112 Nov 29 j 16:37	5° $\mathbb{A}$ 23'36		minimum elong	-105 Dec 28 j 20:16	4° $\mathbb{B}$ 39'43	0°22'55
max. Earth dist.	-112 Nov 29 j 23:20	5° $\mathbb{A}$ 24'38	20.31093 AU	max. Earth dist.	-105 Dec 29 j 20:33	4° $\mathbb{B}$ 43'17	20.73205 AU
retrograde	-111 Mar 17 j 07:44	9° $\mathbb{A}$ 31'06		retrograde	-104 Apr 15 j 17:50	8° $\mathbb{B}$ 43'52	
opposition	-111 Jun 02 j 04:33	7° $\mathbb{A}$ 31'22	0°-3'-28	opposition	-104 Jul 02 j 13:05	6° $\mathbb{B}$ 44'51	0°-26'-48
min. Earth dist.	-111 Jun 01 j 13:49	7° $\mathbb{A}$ 32'51	18.34252 AU	min. Earth dist.	-104 Jul 01 j 13:33	6° $\mathbb{B}$ 47'12	18.75796 AU
direct	-111 Aug 18 j 05:24	5° $\mathbb{A}$ 31'25		direct	-104 Sep 16 j 23:34	4° $\mathbb{B}$ 47'19	
conjunction	-111 Dec 03 j 20:04	9° $\mathbb{A}$ 38'15	0°-4'-49	conjunction	-103 Jan 01 j 02:53	8° $\mathbb{B}$ 45'39	0°-25'-31
minimum elong	-111 Dec 03 j 20:04	9° $\mathbb{A}$ 38'15	0°04'50	minimum elong	-103 Jan 01 j 02:53	8° $\mathbb{B}$ 45'39	0°25'32
behind sun begin	-111 Dec 03 j 13:42	9° $\mathbb{A}$ 37'19		max. Earth dist.	-103 Jan 02 j 02:47	8° $\mathbb{B}$ 49'08	20.78250 AU
behind sun end	-111 Dec 04 j 02:27	9° $\mathbb{A}$ 39'11		retrograde	-103 Apr 20 j 04:31	12° $\mathbb{B}$ 49'22	
max. Earth dist.	-111 Dec 04 j 12:17	9° $\mathbb{A}$ 40'40	20.37419 AU	min. Earth dist.	-103 Jul 06 j 01:55	10° $\mathbb{B}$ 52'46	18.80648 AU
retrograde	-110 Mar 21 j 19:59	13° $\mathbb{A}$ 45'57		opposition	-103 Jul 07 j 01:38	10° $\mathbb{B}$ 50'24	0°-29'-39
opposition	-110 Jun 06 j 21:35	11° $\mathbb{A}$ 46'17	0°-7'-4	direct	-103 Sep 21 j 08:09	8° $\mathbb{B}$ 53'08	
min. Earth dist.	-110 Jun 06 j 05:26	11° $\mathbb{A}$ 47'55	18.40569 AU				
direct	-110 Aug 22 j 21:09	9° $\mathbb{A}$ 46'41		conjunction	-102 Jan 05 j 09:20	12° $\mathbb{B}$ 50'30	0°-28'-2
				minimum elong	-102 Jan 05 j 09:20	12° $\mathbb{B}$ 50'30	0°28'03
conjunction	-110 Dec 08 j 05:23	13° $\mathbb{A}$ 52'06	0°-8'-1	max. Earth dist.	-102 Jan 06 j 10:46	12° $\mathbb{B}$ 54'13	20.82872 AU
minimum elong	-110 Dec 08 j 05:22	13° $\mathbb{A}$ 52'06	0°08'03	retrograde	-102 Apr 24 j 14:27	16° $\mathbb{B}$ 53'49	
behind sun begin	-110 Dec 07 j 23:31	13° $\mathbb{A}$ 51'15		opposition	-102 Jul 11 j 13:28	14° $\mathbb{B}$ 54'53	0°-32'-20
behind sun end	-110 Dec 08 j 11:13	13° $\mathbb{A}$ 52'57		min. Earth dist.	-102 Jul 10 j 13:01	14° $\mathbb{B}$ 57'19	18.85036 AU
max. Earth dist.	-110 Dec 08 j 22:10	13° $\mathbb{A}$ 54'36	20.43724 AU	direct	-102 Sep 25 j 18:57	12° $\mathbb{B}$ 57'50	
retrograde	-109 Mar 26 j 09:06	17° $\mathbb{A}$ 59'06					
opposition	-109 Jun 11 j 13:40	15° $\mathbb{A}$ 59'31	0°-10'-36	conjunction	-101 Jan 09 j 15:24	16° $\mathbb{B}$ 54'19	0°-30'-23
min. Earth dist.	-109 Jun 10 j 19:40	16° $\mathbb{A}$ 01'20	18.46859 AU	minimum elong	-101 Jan 09 j 15:24	16° $\mathbb{B}$ 54'19	0°30'24
direct	-109 Aug 27 j 11:04	14° $\mathbb{A}$ 00'15		max. Earth dist.	-101 Jan 10 j 16:03	16° $\mathbb{B}$ 57'54	20.87022 AU
				retrograde	-101 Apr 29 j 00:14	20° $\mathbb{B}$ 57'14	
conjunction	-109 Dec 12 j 14:12	18° $\mathbb{A}$ 04'20	0°-11'-10	min. Earth dist.	-101 Jul 15 j 00:30	19° $\mathbb{B}$ 00'43	18.88958 AU
minimum elong	-109 Dec 12 j 14:12	18° $\mathbb{A}$ 04'20	0°11'10	opposition	-101 Jul 16 j 00:39	18° $\mathbb{B}$ 58'18	0°-34'-50
behind sun begin	-109 Dec 12 j 09:17	18° $\mathbb{A}$ 03'37		direct	-101 Sep 30 j 02:44	17° $\mathbb{B}$ 01'24	
behind sun end	-109 Dec 12 j 19:07	18° $\mathbb{A}$ 05'03					
max. Earth dist.	-109 Dec 13 j 09:41	18° $\mathbb{A}$ 07'14	20.49969 AU	conjunction	-100 Jan 13 j 21:18	20° $\mathbb{B}$ 57'04	0°-32'-34
retrograde	-108 Mar 29 j 20:27	22° $\mathbb{A}$ 10'40		minimum elong	-100 Jan 13 j 21:18	20° $\mathbb{B}$ 57'04	0°32'36
min. Earth dist.	-108 Jun 14 j 09:52	20° $\mathbb{A}$ 13'09	18.53051 AU	max. Earth dist.	-100 Jan 14 j 23:16	21° $\mathbb{B}$ 00'50	20.90709 AU

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:13, page 21

Attention, astronomical year style is used: The year -100 in astronomical counting style is the year 101 BCE in historical counting style.

retrograde	-100 May 02 j 09:24	24°☾59'37		max. Earth dist.	-92 Feb 15 j 17:47	22°☾56'51	21.06245 AU
min. Earth dist.	-100 Jul 18 j 10:20	23°☾03'09	18.92415 AU	retrograde	-92 Jun 04 j 07:03	26°☾54'51	
opposition	-100 Jul 19 j 11:16	23°☾00'39	0°-37'-10	min. Earth dist.	-92 Aug 20 j 07:02	24°☾58'01	19.06428 AU
direct	-100 Oct 03 j 12:07	21°☾03'55		opposition	-92 Aug 21 j 07:12	24°☾55'35	0°-48'-16
				direct	-92 Nov 04 j 14:45	22°☾59'27	
conjunction	-99 Jan 17 j 02:36	24°☾58'47	0°-34'-35	conjunction	-91 Feb 17 j 21:07	26°☾51'37	0°-43'-53
minimum elong	-99 Jan 17 j 02:36	24°☾58'47	0°34'37	minimum elong	-91 Feb 17 j 21:07	26°☾51'37	0°43'54
max. Earth dist.	-99 Jan 18 j 03:56	25°☾02'27	20.93951 AU	max. Earth dist.	-91 Feb 18 j 21:54	26°☾55'09	21.06399 AU
retrograde	-99 May 06 j 18:40	29°☾01'03			-91 Apr 21 j 19:16	0°☿	
opposition	-99 Jul 23 j 21:25	27°☾02'01	0°-39'-17	retrograde	-91 Jun 08 j 14:35	0°☿53'34	
min. Earth dist.	-99 Jul 22 j 20:51	27°☾04'28	18.95463 AU		-91 Jul 27 j 17:22	30°☿☾	
direct	-99 Oct 07 j 19:12	25°☾05'22		opposition	-91 Aug 25 j 14:34	28°☾54'15	0°-48'-39
conjunction	-98 Jan 21 j 08:02	28°☾59'34	0°-36'-26	min. Earth dist.	-91 Aug 24 j 16:09	28°☾56'31	19.06339 AU
minimum elong	-98 Jan 21 j 08:01	28°☾59'34	0°36'27	direct	-91 Nov 08 j 18:35	26°☾58'07	
max. Earth dist.	-98 Jan 22 j 10:40	29°☾03'25	20.96798 AU		-90 Feb 07 j 08:22	0°☿	
	-98 Feb 07 j 22:11	0°☾		conjunction	-90 Feb 22 j 03:31	0°☿50'22	0°-44'-8
retrograde	-98 May 11 j 03:16	3°☾01'34		minimum elong	-90 Feb 22 j 03:31	0°☿50'22	0°44'09
min. Earth dist.	-98 Jul 27 j 05:20	1°☾05'01	18.98121 AU	max. Earth dist.	-90 Feb 23 j 04:16	0°☿53'54	21.06050 AU
opposition	-98 Jul 28 j 06:42	1°☾02'29	0°-41'-13	retrograde	-90 Jun 12 j 23:58	4°☿52'31	
	-98 Aug 24 j 17:35	30°☿☾		opposition	-90 Aug 29 j 21:28	2°☿53'10	0°-48'-49
direct	-98 Oct 12 j 03:05	29°☾05'55		min. Earth dist.	-90 Aug 28 j 23:17	2°☿55'24	19.05711 AU
	-98 Nov 27 j 15:41	0°☾		direct	-90 Nov 13 j 01:15	0°☿56'59	
conjunction	-97 Jan 25 j 13:07	2°☾59'33	0°-38'-5	conjunction	-89 Feb 26 j 10:05	4°☿49'24	0°-44'-11
minimum elong	-97 Jan 25 j 13:07	2°☾59'33	0°38'06	minimum elong	-89 Feb 26 j 10:05	4°☿49'24	0°44'11
max. Earth dist.	-97 Jan 26 j 14:58	3°☾03'16	20.99271 AU	max. Earth dist.	-89 Feb 27 j 08:39	4°☿52'37	21.05144 AU
retrograde	-97 May 15 j 11:52	7°☾01'21		retrograde	-89 Jun 17 j 08:03	8°☿51'48	
opposition	-97 Aug 01 j 15:43	5°☾02'12	0°-42'-55	min. Earth dist.	-89 Sep 02 j 08:29	6°☿54'23	19.04525 AU
min. Earth dist.	-97 Jul 31 j 14:54	5°☾04'41	19.00428 AU	opposition	-89 Sep 03 j 04:36	6°☿52'21	0°-48'-44
direct	-97 Oct 16 j 09:12	3°☾05'43		direct	-89 Nov 17 j 05:07	4°☿56'05	
conjunction	-96 Jan 29 j 18:10	6°☾58'52	0°-39'-32	conjunction	-88 Mar 01 j 16:59	8°☿48'44	0°-44'00
minimum elong	-96 Jan 29 j 18:10	6°☾58'52	0°39'33	minimum elong	-88 Mar 01 j 16:59	8°☿48'44	0°44'01
max. Earth dist.	-96 Jan 30 j 21:15	7°☾02'46	21.01398 AU	max. Earth dist.	-88 Mar 02 j 15:16	8°☿51'54	21.03680 AU
retrograde	-96 May 18 j 20:40	11°☾00'33		retrograde	-88 Jun 20 j 17:17	12°☿51'24	
min. Earth dist.	-96 Aug 03 j 22:35	9°☾03'55	19.02377 AU	opposition	-88 Sep 06 j 11:30	10°☿51'50	0°-48'-25
opposition	-96 Aug 05 j 00:13	9°☾01'21	0°-44'-26	min. Earth dist.	-88 Sep 05 j 15:39	10°☿53'50	19.02773 AU
direct	-96 Oct 19 j 16:10	7°☾04'58		direct	-88 Nov 20 j 11:50	8°☿55'26	
conjunction	-95 Feb 01 j 23:13	10°☾57'43	0°-40'-49	conjunction	-87 Mar 06 j 00:14	12°☿48'22	0°-43'-36
minimum elong	-95 Feb 01 j 23:13	10°☾57'43	0°40'50	minimum elong	-87 Mar 06 j 00:15	12°☿48'22	0°43'36
max. Earth dist.	-95 Feb 03 j 01:22	11°☾01'28	21.03175 AU	max. Earth dist.	-87 Mar 06 j 20:16	12°☿51'13	21.01665 AU
retrograde	-95 May 23 j 04:34	14°☾59'20		retrograde	-87 Jun 25 j 01:38	16°☿51'21	
min. Earth dist.	-95 Aug 08 j 07:41	13°☾02'36	19.03986 AU	opposition	-87 Sep 10 j 18:20	14°☿51'38	0°-47'-52
opposition	-95 Aug 09 j 08:27	13°☾00'07	0°-45'-43	min. Earth dist.	-87 Sep 10 j 00:42	14°☿53'25	19.00505 AU
direct	-95 Oct 23 j 21:28	11°☾03'48		direct	-87 Nov 24 j 16:07	12°☿55'03	
conjunction	-94 Feb 06 j 04:29	14°☾56'16	0°-41'-53	conjunction	-86 Mar 10 j 08:02	16°☿48'23	0°-42'-59
minimum elong	-94 Feb 06 j 04:29	14°☾56'16	0°41'54	minimum elong	-86 Mar 10 j 08:02	16°☿48'23	0°43'01
max. Earth dist.	-94 Feb 07 j 07:33	15°☾00'09	21.04599 AU	max. Earth dist.	-86 Mar 11 j 03:41	16°☿51'11	20.99163 AU
	-94 Feb 07 j 06:30	15°☾		retrograde	-86 Jun 29 j 10:58	20°☿51'43	
retrograde	-94 May 27 j 14:07	18°☾57'52		min. Earth dist.	-86 Sep 14 j 07:38	18°☿53'35	18.97766 AU
opposition	-94 Aug 13 j 16:14	16°☾58'38	0°-46'-47	opposition	-86 Sep 15 j 00:59	18°☿51'49	0°-47'-4
min. Earth dist.	-94 Aug 12 j 14:57	17°☾01'10	19.05212 AU	direct	-86 Nov 28 j 22:32	16°☿55'02	
direct	-94 Oct 28 j 03:54	15°☾02'24		conjunction	-85 Mar 14 j 15:58	20°☿48'50	0°-42'-9
conjunction	-93 Feb 10 j 09:45	18°☾54'40	0°-42'-45	minimum elong	-85 Mar 14 j 15:58	20°☿48'50	0°42'10
minimum elong	-93 Feb 10 j 09:45	18°☾54'40	0°42'47	max. Earth dist.	-85 Mar 15 j 09:28	20°☿51'20	20.96215 AU
max. Earth dist.	-93 Feb 11 j 11:34	18°☾58'22	21.05627 AU	retrograde	-85 Jul 03 j 19:21	24°☿52'35	
retrograde	-93 May 31 j 21:21	22°☾56'20		opposition	-85 Sep 19 j 07:44	22°☿52'31	0°-46'-2
opposition	-93 Aug 17 j 23:50	20°☾57'05	0°-47'-38	min. Earth dist.	-85 Sep 18 j 16:34	22°☿54'04	18.94627 AU
min. Earth dist.	-93 Aug 16 j 23:52	20°☾59'29	19.06040 AU	direct	-85 Dec 03 j 03:17	20°☿55'30	
direct	-93 Nov 01 j 08:19	19°☾00'54		conjunction	-84 Mar 18 j 00:33	24°☿49'53	0°-41'-7
conjunction	-92 Feb 14 j 15:24	22°☾53'05	0°-43'-26	minimum elong	-84 Mar 18 j 00:34	24°☿49'53	0°41'08
minimum elong	-92 Feb 14 j 15:24	22°☾53'05	0°43'27				

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:13, page 22

Attention, astronomical year style is used: The year -84 in astronomical counting style is the year 85 BCE in historical counting style.

max. Earth dist.	-84 Mar 18 j 17:44	24° <del>♄</del> 52'20	20.92904 AU	max. Earth dist.	-76 Apr 20 j 23:54	27° <del>♃</del> 38'06	20.56094 AU
retrograde	-84 Jul 07 j 05:16	28° <del>♄</del> 54'05			-76 Jun 03 j 05:34	0° <del>♄</del>	
opposition	-84 Sep 22 j 14:22	26° <del>♄</del> 53'52	0°-44'-47	retrograde	-76 Aug 10 j 01:44	1° <del>♄</del> 47'07	
min. Earth dist.	-84 Sep 21 j 23:25	26° <del>♄</del> 55'24	18.91142 AU		-76 Oct 19 j 15:58	30° <del>♃</del>	
direct	-84 Dec 06 j 09:46	24° <del>♄</del> 56'37		opposition	-76 Oct 25 j 04:49	29° <del>♃</del> 46'06	0°-27'-10
				min. Earth dist.	-76 Oct 25 j 02:26	29° <del>♃</del> 46'21	18.53151 AU
conjunction	-83 Mar 22 j 09:31	28° <del>♄</del> 51'39	0°-39'-53	direct	-75 Jan 07 j 18:27	27° <del>♃</del> 46'50	
minimum elong	-83 Mar 22 j 09:31	28° <del>♄</del> 51'39	0°39'54		-75 Mar 23 j 19:57	0° <del>♄</del>	
max. Earth dist.	-83 Mar 23 j 00:33	28° <del>♄</del> 53'48	20.89261 AU				
	-83 Apr 11 j 13:15	0° <del>♃</del>		conjunction	-75 Apr 25 j 11:47	1° <del>♄</del> 50'12	0°-23'-12
retrograde	-83 Jul 11 j 14:04	2° <del>♃</del> 56'22		minimum elong	-75 Apr 25 j 11:47	1° <del>♄</del> 50'12	0°23'12
opposition	-83 Sep 26 j 21:18	0° <del>♃</del> 56'01	0°-43'-19	max. Earth dist.	-75 Apr 25 j 12:19	1° <del>♄</del> 50'17	20.50147 AU
min. Earth dist.	-83 Sep 26 j 08:35	0° <del>♃</del> 57'19	18.87350 AU	retrograde	-75 Aug 14 j 14:31	6° <del>♄</del> 00'27	
	-83 Oct 20 j 13:21	30° <del>♃</del>		opposition	-75 Oct 29 j 14:35	3° <del>♄</del> 59'18	0°-24'-7
direct	-83 Dec 10 j 14:39	28° <del>♄</del> 58'32		min. Earth dist.	-75 Oct 29 j 15:08	3° <del>♄</del> 59'15	18.47049 AU
	-82 Jan 29 j 02:57	0° <del>♃</del>		direct	-74 Jan 12 j 02:52	1° <del>♄</del> 59'40	
conjunction	-82 Mar 26 j 19:16	2° <del>♃</del> 54'20	0°-38'-27	conjunction	-74 Apr 30 j 03:49	6° <del>♄</del> 04'19	0°-20'-22
minimum elong	-82 Mar 26 j 19:16	2° <del>♃</del> 54'20	0°38'27	minimum elong	-74 Apr 30 j 03:49	6° <del>♄</del> 04'19	0°20'23
max. Earth dist.	-82 Mar 27 j 09:44	2° <del>♃</del> 56'24	20.85332 AU	max. Earth dist.	-74 Apr 30 j 02:19	6° <del>♄</del> 04'06	20.43912 AU
retrograde	-82 Jul 16 j 00:59	6° <del>♃</del> 59'36		retrograde	-74 Aug 19 j 06:28	10° <del>♄</del> 15'19	
opposition	-82 Oct 01 j 04:05	4° <del>♃</del> 59'07	0°-41'-37	opposition	-74 Nov 03 j 00:34	8° <del>♄</del> 14'00	0°-20'-55
min. Earth dist.	-82 Sep 30 j 15:41	5° <del>♃</del> 00'24	18.83276 AU	min. Earth dist.	-74 Nov 03 j 02:04	8° <del>♄</del> 13'50	18.40683 AU
direct	-82 Dec 14 j 21:40	3° <del>♃</del> 01'25		direct	-73 Jan 16 j 14:44	6° <del>♄</del> 13'57	
conjunction	-81 Mar 31 j 05:28	6° <del>♃</del> 58'04	0°-36'-49	conjunction	-73 May 04 j 20:32	10° <del>♄</del> 19'57	0°-17'-24
minimum elong	-81 Mar 31 j 05:28	6° <del>♃</del> 58'04	0°36'50	minimum elong	-73 May 04 j 20:32	10° <del>♄</del> 19'57	0°17'25
max. Earth dist.	-81 Mar 31 j 17:40	6° <del>♃</del> 59'49	20.81129 AU	max. Earth dist.	-73 May 04 j 16:40	10° <del>♄</del> 19'24	20.37438 AU
retrograde	-81 Jul 20 j 10:22	11° <del>♃</del> 03'57		retrograde	-73 Aug 23 j 19:45	14° <del>♄</del> 31'42	
opposition	-81 Oct 05 j 11:25	9° <del>♃</del> 03'22	0°-39'-43	opposition	-73 Nov 07 j 11:15	12° <del>♄</del> 30'13	0°-17'-34
min. Earth dist.	-81 Oct 05 j 01:20	9° <del>♃</del> 04'25	18.78947 AU	min. Earth dist.	-73 Nov 07 j 15:28	12° <del>♄</del> 29'46	18.34126 AU
direct	-81 Dec 19 j 02:47	7° <del>♃</del> 05'27		direct	-72 Jan 21 j 00:23	10° <del>♄</del> 29'45	
conjunction	-80 Apr 03 j 16:23	11° <del>♃</del> 03'01	0°-34'-59	conjunction	-72 May 08 j 13:59	14° <del>♄</del> 37'07	0°-14'-20
minimum elong	-80 Apr 03 j 16:23	11° <del>♃</del> 03'01	0°34'59	minimum elong	-72 May 08 j 13:59	14° <del>♄</del> 37'07	0°14'21
max. Earth dist.	-80 Apr 04 j 03:50	11° <del>♃</del> 04'40	20.76685 AU	behind sun begin	-72 May 08 j 11:06	14° <del>♄</del> 36'42	
retrograde	-80 Jul 23 j 22:41	15° <del>♃</del> 09'34		behind sun end	-72 May 08 j 16:53	14° <del>♄</del> 37'32	
opposition	-80 Oct 08 j 18:53	13° <del>♃</del> 08'54	0°-37'-36	max. Earth dist.	-72 May 08 j 08:08	14° <del>♄</del> 36'16	20.30826 AU
min. Earth dist.	-80 Oct 08 j 09:14	13° <del>♃</del> 09'54	18.74365 AU		-72 May 15 j 01:47	15° <del>♄</del>	
direct	-80 Dec 22 j 10:27	11° <del>♃</del> 10'46		retrograde	-72 Aug 27 j 12:36	18° <del>♄</del> 49'39	
				opposition	-72 Nov 10 j 22:17	16° <del>♄</del> 47'58	0°-14'-6
conjunction	-79 Apr 08 j 04:07	15° <del>♃</del> 09'22	0°-32'-59	min. Earth dist.	-72 Nov 11 j 03:22	16° <del>♄</del> 47'26	18.27458 AU
minimum elong	-79 Apr 08 j 04:07	15° <del>♃</del> 09'22	0°33'00		-71 Jan 02 j 07:37	15° <del>♃</del>	
max. Earth dist.	-79 Apr 08 j 13:10	15° <del>♃</del> 10'39	20.71975 AU	direct	-71 Jan 24 j 13:46	14° <del>♄</del> 47'03	
retrograde	-79 Jul 28 j 09:18	19° <del>♃</del> 16'36			-71 Feb 15 j 16:21	15° <del>♄</del>	
opposition	-79 Oct 13 j 02:43	17° <del>♃</del> 15'52	0°-35'-17				
min. Earth dist.	-79 Oct 12 j 19:45	17° <del>♃</del> 16'36	18.69521 AU	conjunction	-71 May 13 j 08:23	18° <del>♄</del> 55'51	0°-11'-10
direct	-79 Dec 26 j 16:30	15° <del>♃</del> 17'29		minimum elong	-71 May 13 j 08:23	18° <del>♄</del> 55'51	0°11'11
				behind sun begin	-71 May 13 j 03:27	18° <del>♄</del> 55'09	
conjunction	-78 Apr 12 j 16:52	19° <del>♃</del> 17'12	0°-30'-47	behind sun end	-71 May 13 j 13:19	18° <del>♄</del> 56'34	
minimum elong	-78 Apr 12 j 16:52	19° <del>♃</del> 17'12	0°30'48	max. Earth dist.	-71 May 13 j 00:34	18° <del>♄</del> 54'43	20.24118 AU
max. Earth dist.	-78 Apr 13 j 00:35	19° <del>♃</del> 18'19	20.66998 AU	retrograde	-71 Sep 01 j 02:51	23° <del>♄</del> 09'09	
retrograde	-78 Aug 01 j 22:53	23° <del>♃</del> 25'10		opposition	-71 Nov 15 j 09:55	21° <del>♄</del> 07'19	0°-10'-33
opposition	-78 Oct 17 j 10:54	21° <del>♃</del> 24'22	0°-32'-46	min. Earth dist.	-71 Nov 15 j 17:32	21° <del>♄</del> 06'30	18.20741 AU
min. Earth dist.	-78 Oct 17 j 04:43	21° <del>♃</del> 25'01	18.64386 AU	direct	-70 Jan 29 j 01:02	19° <del>♄</del> 05'58	
direct	-78 Dec 31 j 01:02	19° <del>♃</del> 25'44					
				conjunction	-70 May 18 j 03:30	23° <del>♄</del> 16'13	0°-7'-56
conjunction	-77 Apr 17 j 06:10	23° <del>♃</del> 26'37	0°-28'-25	minimum elong	-70 May 18 j 03:29	23° <del>♄</del> 16'13	0°07'56
minimum elong	-77 Apr 17 j 06:10	23° <del>♃</del> 26'37	0°28'26	behind sun begin	-70 May 17 j 21:27	23° <del>♄</del> 15'21	
max. Earth dist.	-77 Apr 17 j 11:16	23° <del>♃</del> 27'20	20.61703 AU	behind sun end	-70 May 18 j 09:32	23° <del>♄</del> 17'05	
retrograde	-77 Aug 06 j 10:54	27° <del>♃</del> 35'21		max. Earth dist.	-70 May 17 j 17:36	23° <del>♄</del> 14'46	20.17413 AU
opposition	-77 Oct 21 j 19:44	25° <del>♃</del> 34'27	0°-30'-3	retrograde	-70 Sep 05 j 20:33	27° <del>♄</del> 30'18	
min. Earth dist.	-77 Oct 21 j 16:23	25° <del>♃</del> 34'48	18.58933 AU	opposition	-70 Nov 19 j 22:09	25° <del>♄</del> 28'19	0°-6'-54
direct	-76 Jan 04 j 08:19	23° <del>♃</del> 35'32		min. Earth dist.	-70 Nov 20 j 06:28	25° <del>♄</del> 27'25	18.14060 AU
				direct	-69 Feb 02 j 15:43	23° <del>♄</del> 26'33	
conjunction	-76 Apr 20 j 20:35	27° <del>♃</del> 37'37	0°-25'-53	conjunction	-69 May 22 j 23:14	27° <del>♄</del> 38'18	0°-4'-38
minimum elong	-76 Apr 20 j 20:35	27° <del>♃</del> 37'37	0°25'54				

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:13, page 23

Attention, astronomical year style is used: The year -69 in astronomical counting style is the year 70 BCE in historical counting style.

minimum elong	-69 May 22 j 23:15	27°♄38'18	0°04'39	max. Earth dist.	-63 Jun 18 j 18:54	24°♃28'01	19.74274 AU
behind sun begin	-69 May 22 j 16:37	27°♄37'20		retrograde	-63 Oct 07 j 07:46	28°♃50'37	
behind sun end	-69 May 23 j 05:53	27°♄39'15		opposition	-63 Dec 20 j 08:07	26°♃48'25	0°19'13
max. Earth dist.	-69 May 22 j 12:01	27°♄36'39	20.10758 AU	min. Earth dist.	-63 Dec 21 j 02:36	26°♃46'25	17.71520 AU
	-69 Jul 03 j 22:59	0°♃		direct	-62 Mar 05 j 12:57	24°♃44'21	
retrograde	-69 Sep 10 j 12:08	1°♃53'10					
	-69 Nov 20 j 23:53	30°♃		conjunction	-62 Jun 24 j 17:04	29°♃06'47	0°18'55
opposition	-69 Nov 24 j 11:10	29°♄51'04	0°-3'-12	minimum elong	-62 Jun 24 j 17:04	29°♃06'47	0°18'55
min. Earth dist.	-69 Nov 24 j 21:38	29°♄49'56	18.07464 AU	max. Earth dist.	-62 Jun 23 j 17:26	29°♃03'11	19.68796 AU
direct	-68 Feb 07 j 04:41	27°♄48'54			-62 Jul 09 j 07:51	0°♄	
	-68 Apr 21 j 06:42	0°♃		retrograde	-62 Oct 12 j 05:12	3°♄26'52	
				opposition	-62 Dec 25 j 02:26	1°♄24'39	0°22'47
conjunction	-68 May 26 j 19:54	2°♃02'10	0°-1'-15	min. Earth dist.	-62 Dec 25 j 22:11	1°♄22'30	17.66146 AU
minimum elong	-68 May 26 j 19:55	2°♃02'10	0°01'15		-61 Jan 29 j 19:30	30°♃	
behind sun begin	-68 May 26 j 13:08	2°♃01'11		direct	-61 Mar 10 j 09:40	29°♃20'14	
behind sun end	-68 May 27 j 02:42	2°♃03'09			-61 Apr 18 j 09:45	0°♄	
max. Earth dist.	-68 May 26 j 06:29	2°♃00'11	20.04237 AU				
retrograde	-68 Sep 14 j 06:51	6°♃17'50		conjunction	-61 Jun 29 j 18:59	3°♄44'02	0°22'03
asc. node	-68 Oct 06 j 20:03	6°♃04'28		minimum elong	-61 Jun 29 j 18:59	3°♄44'02	0°22'03
opposition	-68 Nov 28 j 00:38	4°♃15'39	0°00'32	max. Earth dist.	-61 Jun 28 j 19:07	3°♄40'23	19.63513 AU
min. Earth dist.	-68 Nov 28 j 11:50	4°♃14'27	18.01023 AU	retrograde	-61 Oct 17 j 03:16	8°♄04'40	
direct	-67 Feb 10 j 20:29	2°♃13'07		opposition	-61 Dec 29 j 21:28	6°♄02'26	0°26'13
				min. Earth dist.	-61 Dec 30 j 18:12	6°♄00'10	17.60974 AU
conjunction	-67 May 31 j 17:33	6°♃27'57	0°02'14	direct	-60 Mar 14 j 07:04	3°♄57'41	
minimum elong	-67 May 31 j 17:33	6°♃27'57	0°02'14				
behind sun begin	-67 May 31 j 10:46	6°♃26'58		conjunction	-60 Jul 03 j 21:23	8°♄22'46	0°25'03
behind sun end	-67 Jun 01 j 00:20	6°♃28'56		minimum elong	-60 Jul 03 j 21:23	8°♄22'46	0°25'04
max. Earth dist.	-67 May 31 j 03:06	6°♃25'48	19.97872 AU	max. Earth dist.	-60 Jul 02 j 19:05	8°♄18'44	19.58468 AU
retrograde	-67 Sep 19 j 00:10	10°♃44'24		retrograde	-60 Oct 21 j 01:40	12°♄43'54	
opposition	-67 Dec 02 j 15:03	8°♃42'11	0°04'18	opposition	-59 Jan 02 j 17:03	10°♄41'36	0°29'29
min. Earth dist.	-67 Dec 03 j 04:10	8°♃40'46	17.94752 AU	min. Earth dist.	-59 Jan 03 j 15:10	10°♄39'12	17.56082 AU
direct	-66 Feb 15 j 11:32	6°♃39'19		direct	-59 Mar 19 j 04:59	8°♄36'32	
				max. Earth dist.	-59 Jul 07 j 22:04	12°♄58'46	19.53726 AU
conjunction	-66 Jun 05 j 15:46	10°♃55'43	0°05'38				
minimum elong	-66 Jun 05 j 15:46	10°♃55'43	0°05'38	conjunction	-59 Jul 09 j 00:19	13°♄02'49	0°27'55
behind sun begin	-66 Jun 05 j 09:15	10°♃54'45		minimum elong	-59 Jul 09 j 00:19	13°♄02'49	0°27'54
behind sun end	-66 Jun 05 j 22:16	10°♃56'40		retrograde	-59 Oct 26 j 00:35	17°♄24'22	
max. Earth dist.	-66 Jun 04 j 22:56	10°♃53'11	19.91702 AU	opposition	-58 Jan 07 j 13:25	15°♄22'02	0°32'35
retrograde	-66 Sep 23 j 19:39	15°♃12'58		min. Earth dist.	-58 Jan 08 j 11:52	15°♄19'35	17.51510 AU
opposition	-66 Dec 07 j 06:05	13°♃10'44	0°08'05	direct	-58 Mar 24 j 03:47	13°♄16'39	
min. Earth dist.	-66 Dec 07 j 20:03	13°♃09'13	17.88684 AU	max. Earth dist.	-58 Jul 12 j 23:20	17°♄39'41	19.49340 AU
direct	-65 Feb 20 j 04:38	11°♃07'33					
				conjunction	-58 Jul 14 j 03:13	17°♄44'00	0°30'35
conjunction	-65 Jun 10 j 14:59	15°♃25'32	0°09'01	minimum elong	-58 Jul 14 j 03:12	17°♄44'00	0°30'36
minimum elong	-65 Jun 10 j 14:59	15°♃25'32	0°09'01	retrograde	-58 Oct 30 j 23:17	22°♄05'56	
behind sun begin	-65 Jun 10 j 09:14	15°♃24'41		opposition	-57 Jan 12 j 10:27	20°♄03'32	0°35'28
behind sun end	-65 Jun 10 j 20:43	15°♃26'22		min. Earth dist.	-57 Jan 13 j 10:03	20°♄00'57	17.47344 AU
max. Earth dist.	-65 Jun 09 j 21:28	15°♃22'54	19.85720 AU	direct	-57 Mar 29 j 02:42	17°♄57'50	
retrograde	-65 Sep 28 j 14:47	19°♃43'33		max. Earth dist.	-57 Jul 18 j 02:59	22°♄21'55	19.45392 AU
opposition	-65 Dec 11 j 21:56	17°♃41'20	0°11'51				
min. Earth dist.	-65 Dec 12 j 13:42	17°♃39'37	17.82796 AU	conjunction	-57 Jul 19 j 06:30	22°♄26'11	0°33'04
direct	-64 Feb 24 j 22:07	15°♃37'52		minimum elong	-57 Jul 19 j 06:30	22°♄26'11	0°33'04
				retrograde	-57 Nov 04 j 22:35	26°♄48'24	
conjunction	-64 Jun 14 j 14:52	19°♃57'23	0°12'22	opposition	-56 Jan 17 j 07:53	24°♄45'58	0°38'07
minimum elong	-64 Jun 14 j 14:51	19°♃57'23	0°12'22	min. Earth dist.	-56 Jan 18 j 07:08	24°♄43'25	17.43631 AU
behind sun begin	-64 Jun 14 j 10:31	19°♃56'44		direct	-56 Apr 02 j 03:27	22°♄40'01	
behind sun end	-64 Jun 14 j 19:12	19°♃58'01		max. Earth dist.	-56 Jul 22 j 05:37	27°♄04'50	19.41926 AU
max. Earth dist.	-64 Jun 13 j 18:37	19°♃54'19	19.79922 AU				
retrograde	-64 Oct 02 j 11:06	24°♃16'09		conjunction	-56 Jul 23 j 09:55	27°♄09'14	0°35'20
opposition	-64 Dec 15 j 14:37	22°♃13'56	0°15'34	minimum elong	-56 Jul 23 j 09:55	27°♄09'14	0°35'20
min. Earth dist.	-64 Dec 16 j 07:35	22°♃12'06	17.77085 AU		-56 Sep 10 j 20:43	0°♃	
direct	-63 Feb 28 j 17:07	20°♃10'09		retrograde	-56 Nov 08 j 20:55	1°♃31'42	
					-55 Jan 09 j 09:35	30°♃	
conjunction	-63 Jun 19 j 15:45	24°♃31'11	0°15'41	opposition	-55 Jan 21 j 06:09	29°♄29'14	0°40'31
minimum elong	-63 Jun 19 j 15:45	24°♃31'11	0°15'42	min. Earth dist.	-55 Jan 22 j 06:23	29°♄26'35	17.40443 AU
behind sun begin	-63 Jun 19 j 15:17	24°♃31'07		direct	-55 Apr 07 j 03:25	27°♄23'04	
behind sun end	-63 Jun 19 j 16:12	24°♃31'15			-55 Jun 27 j 10:25	0°♃	

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:13, page 24

Attention, astronomical year style is used: The year -55 in astronomical counting style is the year 56 BCE in historical counting style.

max. Earth dist.	-55 Jul 27 j 09:32	1°♄48'42	19.39013 AU	opposition	-47 Feb 28 j 09:42	7°♃34'55	0°48'57
				min. Earth dist.	-47 Mar 01 j 06:24	7°♃32'41	17.35156 AU
conjunction	-55 Jul 28 j 13:23	1°♄53'03	0°37'22	direct	-47 May 16 j 02:58	5°♃28'49	
minimum elong	-55 Jul 28 j 13:23	1°♄53'03	0°37'22				
retrograde	-55 Nov 13 j 20:44	6°♄15'42		conjunction	-47 Sep 05 j 13:16	10°♃00'24	0°43'45
opposition	-54 Jan 26 j 04:52	4°♄13'15	0°42'40	minimum elong	-47 Sep 05 j 13:16	10°♃00'24	0°43'44
min. Earth dist.	-54 Jan 27 j 04:04	4°♄10'43	17.37817 AU	max. Earth dist.	-47 Sep 04 j 14:17	9°♃56'47	19.35829 AU
direct	-54 Apr 12 j 06:05	2°♄06'56		retrograde	-47 Dec 21 j 20:05	14°♃22'21	
				opposition	-46 Mar 05 j 11:37	12°♃20'44	0°48'31
conjunction	-54 Aug 02 j 16:55	6°♄37'34	0°39'09	min. Earth dist.	-46 Mar 06 j 06:47	12°♃18'40	17.36696 AU
minimum elong	-54 Aug 02 j 16:55	6°♄37'34	0°39'08	direct	-46 May 21 j 06:34	10°♃14'45	
max. Earth dist.	-54 Aug 01 j 13:16	6°♄33'15	19.36682 AU				
retrograde	-54 Nov 18 j 19:15	11°♄00'21		conjunction	-46 Sep 10 j 14:42	14°♃45'53	0°43'12
opposition	-53 Jan 31 j 04:16	8°♄57'58	0°44'31	minimum elong	-46 Sep 10 j 14:42	14°♃45'53	0°43'12
min. Earth dist.	-53 Feb 01 j 04:10	8°♄55'21	17.35801 AU	max. Earth dist.	-46 Sep 09 j 18:07	14°♃42'38	19.37591 AU
direct	-53 Apr 17 j 07:00	6°♄51'33		retrograde	-46 Dec 26 j 19:48	19°♃07'23	
				opposition	-45 Mar 10 j 13:31	17°♃05'51	0°47'44
conjunction	-53 Aug 07 j 20:19	11°♄22'44	0°40'40	min. Earth dist.	-45 Mar 11 j 07:55	17°♃03'52	17.38671 AU
minimum elong	-53 Aug 07 j 20:19	11°♄22'44	0°40'40	direct	-45 May 26 j 10:24	15°♃00'01	
max. Earth dist.	-53 Aug 06 j 16:59	11°♄18'28	19.34974 AU				
	-53 Oct 14 j 03:39	15°♄		conjunction	-45 Sep 15 j 15:17	19°♃30'31	0°42'21
retrograde	-53 Nov 23 j 19:51	15°♄45'37		minimum elong	-45 Sep 15 j 15:17	19°♃30'31	0°42'22
	-52 Jan 04 j 12:00	15°♄		max. Earth dist.	-45 Sep 14 j 19:04	19°♃27'20	19.39801 AU
opposition	-52 Feb 05 j 04:01	13°♄43'19	0°46'04	retrograde	-45 Dec 31 j 18:27	23°♃51'32	
min. Earth dist.	-52 Feb 06 j 02:37	13°♄40'51	17.34381 AU	opposition	-44 Mar 14 j 15:22	21°♃50'03	0°46'38
direct	-52 Apr 21 j 10:47	11°♄36'53		min. Earth dist.	-44 Mar 15 j 08:19	21°♃48'14	17.41109 AU
	-52 Jul 24 j 15:00	15°♄		direct	-44 May 30 j 13:17	19°♃44'21	
conjunction	-52 Aug 11 j 23:52	16°♄08'30	0°41'55	conjunction	-44 Sep 19 j 15:14	24°♃14'07	0°41'14
minimum elong	-52 Aug 11 j 23:51	16°♄08'30	0°41'55	minimum elong	-44 Sep 19 j 15:14	24°♃14'07	0°41'13
max. Earth dist.	-52 Aug 10 j 21:28	16°♄04'22	19.33840 AU	max. Earth dist.	-44 Sep 18 j 21:43	24°♃11'21	19.42474 AU
retrograde	-52 Nov 27 j 18:47	20°♄31'23		retrograde	-43 Jan 04 j 17:31	28°♃34'34	
opposition	-51 Feb 09 j 04:23	18°♄29'14	0°47'18	opposition	-43 Mar 19 j 17:08	26°♃33'08	0°45'13
min. Earth dist.	-51 Feb 10 j 03:38	18°♄26'42	17.33533 AU	min. Earth dist.	-43 Mar 20 j 08:31	26°♃31'29	17.44008 AU
direct	-51 Apr 26 j 12:24	16°♄22'49		direct	-43 Jun 04 j 18:03	24°♃27'37	
max. Earth dist.	-51 Aug 16 j 00:47	20°♄50'35	19.33271 AU				
				conjunction	-43 Sep 24 j 14:14	28°♃56'29	0°39'49
conjunction	-51 Aug 17 j 03:10	20°♄54'44	0°42'53	minimum elong	-43 Sep 24 j 14:14	28°♃56'29	0°39'50
minimum elong	-51 Aug 17 j 03:09	20°♄54'44	0°42'53	max. Earth dist.	-43 Sep 23 j 21:48	28°♃53'54	19.45628 AU
retrograde	-51 Dec 02 j 20:01	25°♄17'35			-43 Oct 11 j 13:15	0°♄	
opposition	-50 Feb 14 j 05:10	23°♄15'33	0°48'13	retrograde	-42 Jan 09 j 14:16	3°♄16'20	
min. Earth dist.	-50 Feb 15 j 02:59	23°♄13'11	17.33224 AU	opposition	-42 Mar 24 j 18:45	1°♄14'57	0°43'30
direct	-50 May 01 j 16:55	21°♄09'12		min. Earth dist.	-42 Mar 25 j 08:35	1°♄13'28	17.47425 AU
max. Earth dist.	-50 Aug 21 j 05:27	25°♄37'22	19.33208 AU	direct	-42 Apr 25 j 04:54	30°♄	
					-42 Jun 09 j 20:33	29°♃09'37	
conjunction	-50 Aug 22 j 06:12	25°♄41'16	0°43'33		-42 Jul 24 j 05:37	0°♄	
minimum elong	-50 Aug 22 j 06:12	25°♄41'16	0°43'33				
	-50 Nov 25 j 23:06	0°♃		conjunction	-42 Sep 29 j 12:24	3°♄37'30	0°38'10
retrograde	-50 Dec 07 j 19:19	0°♃04'00		minimum elong	-42 Sep 29 j 12:24	3°♄37'30	0°38'09
	-50 Dec 19 j 19:26	30°♄		max. Earth dist.	-42 Sep 28 j 22:49	3°♄35'22	19.49307 AU
opposition	-49 Feb 19 j 06:29	28°♄02'06	0°48'48	retrograde	-41 Jan 14 j 12:11	7°♄56'43	
min. Earth dist.	-49 Feb 20 j 04:41	27°♄59'41	17.33408 AU	opposition	-41 Mar 29 j 20:03	5°♄55'24	0°41'30
direct	-49 May 06 j 19:23	25°♄55'49		min. Earth dist.	-41 Mar 30 j 07:31	5°♄54'11	17.51347 AU
	-49 Aug 19 j 23:58	0°♃		direct	-41 Jun 15 j 01:02	3°♄50'20	
max. Earth dist.	-49 Aug 26 j 08:00	0°♃23'56	19.33634 AU				
				conjunction	-41 Oct 04 j 09:47	8°♄17'08	0°36'16
conjunction	-49 Aug 27 j 08:57	0°♃27'52	0°43'55	minimum elong	-41 Oct 04 j 09:48	8°♄17'08	0°36'15
minimum elong	-49 Aug 27 j 08:57	0°♃27'52	0°43'54	max. Earth dist.	-41 Oct 03 j 21:49	8°♄15'15	19.53493 AU
retrograde	-49 Dec 12 j 20:12	4°♃50'25		retrograde	-40 Jan 19 j 07:41	12°♄35'40	
opposition	-48 Feb 24 j 07:50	2°♃48'37	0°49'03	opposition	-40 Apr 02 j 21:01	10°♄34'27	0°39'15
min. Earth dist.	-48 Feb 25 j 04:37	2°♃46'22	17.34064 AU	min. Earth dist.	-40 Apr 03 j 07:03	10°♄33'24	17.55793 AU
direct	-48 May 10 j 23:45	0°♃42'25		direct	-40 Jun 19 j 02:06	8°♄29'41	
conjunction	-48 Aug 31 j 11:31	5°♃14'20	0°43'59	conjunction	-40 Oct 08 j 06:25	12°♄55'20	0°34'08
minimum elong	-48 Aug 31 j 11:31	5°♃14'20	0°43'59	minimum elong	-40 Oct 08 j 06:25	12°♄55'20	0°34'08
max. Earth dist.	-48 Aug 30 j 12:33	5°♃10'43	19.34510 AU	max. Earth dist.	-40 Oct 07 j 21:01	12°♄53'52	19.58194 AU
retrograde	-48 Dec 16 j 19:55	9°♃36'36		retrograde	-39 Jan 23 j 04:58	17°♄13'10	



Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:13, page 25

Attention, astronomical year style is used: The year -39 in astronomical counting style is the year 40 BCE in historical counting style.

opposition	-39 Apr 07 j 21:45	15°♄12'07	0°36'45	conjunction	-32 Nov 12 j 21:16	19°♃04'19	0°11'14
min. Earth dist.	-39 Apr 08 j 04:57	15°♄11'21	17.60710 AU	minimum elong	-32 Nov 12 j 21:17	19°♃04'19	0°11'13
direct	-39 Jun 24 j 04:55	13°♄07'42		behind sun begin	-32 Nov 12 j 16:23	19°♃03'35	
				behind sun end	-32 Nov 13 j 02:11	19°♃05'03	
conjunction	-39 Oct 13 j 02:03	17°♄32'07	0°31'48	max. Earth dist.	-32 Nov 13 j 03:00	19°♃05'10	20.05964 AU
minimum elong	-39 Oct 13 j 02:03	17°♄32'07	0°31'47	retrograde	-31 Feb 28 j 08:33	23°♃15'49	
max. Earth dist.	-39 Oct 12 j 18:47	17°♄30'59	19.63335 AU	opposition	-31 May 15 j 11:14	21°♃15'50	0°10'37
retrograde	-38 Jan 27 j 23:59	21°♄49'14		min. Earth dist.	-31 May 15 j 03:34	21°♃16'37	18.09117 AU
opposition	-38 Apr 12 j 22:15	19°♄48'20	0°34'02	direct	-31 Jul 31 j 15:56	19°♃14'30	
min. Earth dist.	-38 Apr 13 j 04:13	19°♄47'42	17.66056 AU				
direct	-38 Jun 29 j 04:29	17°♄44'19		conjunction	-31 Nov 17 j 10:19	23°♃27'14	0°07'57
				minimum elong	-31 Nov 17 j 10:19	23°♃27'14	0°07'57
conjunction	-38 Oct 17 j 21:00	22°♄07'25	0°29'16	behind sun begin	-31 Nov 17 j 04:26	23°♃26'22	
minimum elong	-38 Oct 17 j 21:00	22°♄07'25	0°29'17	behind sun end	-31 Nov 17 j 16:12	23°♃28'07	
max. Earth dist.	-38 Oct 17 j 15:52	22°♄06'37	19.68870 AU	max. Earth dist.	-31 Nov 17 j 18:48	23°♃28'31	20.12301 AU
retrograde	-37 Feb 01 j 20:46	26°♄23'47		retrograde	-30 Mar 04 j 22:34	27°♃37'55	
opposition	-37 Apr 17 j 22:01	24°♄23'04	0°31'06	opposition	-30 May 20 j 07:12	25°♃37'59	0°06'56
min. Earth dist.	-37 Apr 18 j 01:08	24°♄22'45	17.71740 AU	min. Earth dist.	-30 May 19 j 22:40	25°♃38'51	18.15452 AU
direct	-37 Jul 04 j 05:19	22°♄19'26		direct	-30 Aug 05 j 10:24	23°♃36'59	
conjunction	-37 Oct 22 j 15:10	26°♄41'12	0°26'35	conjunction	-30 Nov 21 j 22:26	27°♃48'10	0°04'40
minimum elong	-37 Oct 22 j 15:10	26°♄41'12	0°26'34	minimum elong	-30 Nov 21 j 22:27	27°♃48'10	0°04'39
max. Earth dist.	-37 Oct 22 j 12:17	26°♄40'45	19.74696 AU	behind sun begin	-30 Nov 21 j 16:03	27°♃47'13	
	-37 Dec 22 j 09:17	0°♃		behind sun end	-30 Nov 22 j 04:51	27°♃49'07	
retrograde	-36 Feb 06 j 15:07	0°♃56'47		max. Earth dist.	-30 Nov 22 j 07:52	27°♃49'35	20.18645 AU
	-36 Mar 26 j 02:11	30°♃♄			-30 Dec 29 j 23:00	0°♃	
opposition	-36 Apr 21 j 21:42	28°♄56'15	0°28'00	retrograde	-29 Mar 09 j 14:30	1°♃58'01	
min. Earth dist.	-36 Apr 21 j 23:55	28°♄56'01	17.77692 AU		-29 May 24 j 07:43	30°♃♃	
direct	-36 Jul 08 j 03:30	26°♄53'02		opposition	-29 May 25 j 02:06	29°♃58'07	0°03'16
	-36 Oct 06 j 08:59	0°♃		min. Earth dist.	-29 May 24 j 14:59	29°♃59'15	18.21806 AU
				direct	-29 Aug 10 j 05:36	27°♃57'26	
conjunction	-36 Oct 26 j 08:23	1°♃13'22	0°23'43		-29 Oct 20 j 17:25	0°♃	
minimum elong	-36 Oct 26 j 08:23	1°♃13'22	0°23'43				
max. Earth dist.	-36 Oct 26 j 07:10	1°♃13'11	19.80758 AU	conjunction	-29 Nov 26 j 09:54	2°♃07'07	0°01'19
retrograde	-35 Feb 10 j 11:21	5°♃28'10		minimum elong	-29 Nov 26 j 09:54	2°♃07'07	0°01'19
opposition	-35 Apr 26 j 20:46	3°♃27'47	0°24'44	behind sun begin	-29 Nov 26 j 03:22	2°♃06'10	
min. Earth dist.	-35 Apr 26 j 20:03	3°♃27'51	17.83832 AU	behind sun end	-29 Nov 26 j 16:26	2°♃08'05	
direct	-35 Jul 13 j 03:18	1°♃24'58		max. Earth dist.	-29 Nov 26 j 22:15	2°♃08'59	20.25001 AU
				retrograde	-28 Mar 13 j 03:23	6°♃16'10	
conjunction	-35 Oct 31 j 00:55	5°♃43'50	0°20'44	desc. node	-28 Apr 17 j 18:21	5°♃45'27	
minimum elong	-35 Oct 31 j 00:55	5°♃43'50	0°20'45	opposition	-28 May 28 j 20:32	4°♃16'21	0°00'-23
max. Earth dist.	-35 Oct 31 j 02:06	5°♃44'01	19.86967 AU	min. Earth dist.	-28 May 28 j 08:16	4°♃17'36	18.28179 AU
retrograde	-34 Feb 15 j 04:17	9°♃57'50		direct	-28 Aug 13 j 22:34	2°♃16'01	
opposition	-34 May 01 j 19:25	7°♃57'35	0°21'21				
min. Earth dist.	-34 May 01 j 17:57	7°♃57'44	17.90102 AU	conjunction	-28 Nov 29 j 20:18	6°♃24'12	0°-2'-3
direct	-34 Jul 18 j 00:24	5°♃55'11		minimum elong	-28 Nov 29 j 20:19	6°♃24'12	0°02'04
				behind sun begin	-28 Nov 29 j 13:47	6°♃23'14	
conjunction	-34 Nov 04 j 16:31	10°♃12'32	0°17'39	behind sun end	-28 Nov 30 j 02:51	6°♃25'09	
minimum elong	-34 Nov 04 j 16:31	10°♃12'32	0°17'38	max. Earth dist.	-28 Nov 30 j 09:37	6°♃26'12	20.31391 AU
max. Earth dist.	-34 Nov 04 j 18:51	10°♃12'54	19.93279 AU	retrograde	-27 Mar 17 j 17:57	10°♃32'31	
retrograde	-33 Feb 19 j 23:31	14°♃25'43		opposition	-27 Jun 02 j 14:11	8°♃32'45	0°-4'-1
opposition	-33 May 06 j 17:16	12°♃25'35	0°17'51	min. Earth dist.	-27 Jun 01 j 23:22	8°♃34'16	18.34588 AU
min. Earth dist.	-33 May 06 j 13:01	12°♃26'01	17.96432 AU	direct	-27 Aug 18 j 15:25	6°♃32'47	
direct	-33 Jul 22 j 22:52	10°♃23'32					
				conjunction	-27 Dec 04 j 06:19	10°♃39'34	0°-5'-19
conjunction	-33 Nov 09 j 07:22	14°♃39'23	0°14'28	minimum elong	-27 Dec 04 j 06:19	10°♃39'34	0°05'20
minimum elong	-33 Nov 09 j 07:22	14°♃39'23	0°14'28	behind sun begin	-27 Dec 03 j 23:59	10°♃38'38	
behind sun begin	-33 Nov 09 j 04:17	14°♃38'55		behind sun end	-27 Dec 04 j 12:38	10°♃40'29	
behind sun end	-33 Nov 09 j 10:28	14°♃39'51		max. Earth dist.	-27 Dec 04 j 22:31	10°♃41'59	20.37796 AU
max. Earth dist.	-33 Nov 09 j 12:09	14°♃40'06	19.99614 AU	retrograde	-26 Mar 22 j 06:09	14°♃47'09	
	-33 Nov 14 j 21:35	15°♃		opposition	-26 Jun 07 j 07:00	12°♃47'30	0°-7'-36
retrograde	-32 Feb 24 j 14:48	18°♃51'44		min. Earth dist.	-26 Jun 06 j 15:00	12°♃49'07	18.40987 AU
opposition	-32 May 10 j 14:37	16°♃51'41	0°14'15	direct	-26 Aug 23 j 06:39	10°♃47'55	
min. Earth dist.	-32 May 10 j 09:40	16°♃52'12	18.02772 AU				
	-32 Jul 06 j 20:48	15°♃♃		conjunction	-26 Dec 08 j 15:29	14°♃53'19	0°-8'-30
direct	-32 Jul 26 j 18:52	14°♃50'01		minimum elong	-26 Dec 08 j 15:29	14°♃53'19	0°08'31
	-32 Aug 15 j 12:23	15°♃		behind sun begin	-26 Dec 08 j 09:45	14°♃52'28	

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:13, page 26

Attention, astronomical year style is used: The year -26 in astronomical counting style is the year 27 BCE in historical counting style.

behind sun end	-26 Dec 08 j 21:14	14°♁54'09		min. Earth dist.	-18 Jul 10 j 22:39	15°♁59'03	18.85026 AU
max. Earth dist.	-26 Dec 09 j 08:18	14°♁55'49	20.44179 AU	direct	-18 Sep 26 j 04:28	13°♁59'33	
retrograde	-25 Mar 26 j 19:08	19°♁00'15					
opposition	-25 Jun 11 j 23:08	17°♁00'43	0°-11'-8	conjunction	-17 Jan 10 j 01:18	17°♁55'59	0°-30'-43
min. Earth dist.	-25 Jun 11 j 05:06	17°♁02'32	18.47342 AU	minimum elong	-17 Jan 10 j 01:18	17°♁55'59	0°30'45
direct	-25 Aug 27 j 20:53	15°♁01'30		max. Earth dist.	-17 Jan 11 j 01:30	17°♁59'30	20.86964 AU
				retrograde	-17 Apr 29 j 09:10	21°♁58'47	
conjunction	-25 Dec 13 j 00:10	19°♁05'36	0°-11'-38	min. Earth dist.	-17 Jul 15 j 09:47	20°♁02'10	18.88860 AU
minimum elong	-25 Dec 13 j 00:10	19°♁05'36	0°11'40	opposition	-17 Jul 16 j 09:46	19°♁59'47	0°-35'-12
behind sun begin	-25 Dec 12 j 19:28	19°♁04'55		direct	-17 Sep 30 j 12:50	18°♁02'48	
behind sun end	-25 Dec 13 j 04:53	19°♁06'17					
max. Earth dist.	-25 Dec 13 j 19:40	19°♁08'30	20.50474 AU	conjunction	-16 Jan 14 j 06:55	21°♁58'23	0°-32'-53
retrograde	-24 Mar 30 j 06:55	23°♁11'54		minimum elong	-16 Jan 14 j 06:55	21°♁58'23	0°32'54
opposition	-24 Jun 15 j 14:41	21°♁12'30	0°-14'-34	max. Earth dist.	-16 Jan 15 j 08:45	22°♁02'08	20.90590 AU
min. Earth dist.	-24 Jun 14 j 19:33	21°♁14'26	18.53570 AU	retrograde	-16 May 02 j 18:15	26°♁00'48	
direct	-24 Aug 31 j 10:42	19°♁13'41		opposition	-16 Jul 19 j 20:18	24°♁01'45	0°-37'-29
				min. Earth dist.	-16 Jul 18 j 19:34	24°♁04'13	18.92293 AU
conjunction	-24 Dec 16 j 08:16	23°♁16'30	0°-14'-42	direct	-16 Oct 03 j 22:14	22°♁04'54	
minimum elong	-24 Dec 16 j 08:16	23°♁16'30	0°14'42				
behind sun begin	-24 Dec 16 j 05:22	23°♁16'05		conjunction	-15 Jan 17 j 12:13	25°♁59'42	0°-34'-52
behind sun end	-24 Dec 16 j 11:10	23°♁16'56		minimum elong	-15 Jan 17 j 12:13	25°♁59'42	0°34'53
max. Earth dist.	-24 Dec 17 j 04:04	23°♁19'27	20.56628 AU	max. Earth dist.	-15 Jan 18 j 13:29	26°♁03'21	20.93845 AU
retrograde	-23 Apr 03 j 18:45	27°♁22'13			-15 Apr 28 j 12:32	0°≈	
min. Earth dist.	-23 Jun 19 j 08:59	25°♁25'01	18.59639 AU	retrograde	-15 May 07 j 02:58	0°≈01'49	
opposition	-23 Jun 20 j 05:36	25°♁22'57	0°-17'-55		-15 May 15 j 19:12	30°R♁	
direct	-23 Sep 04 j 22:51	23°♁24'30		min. Earth dist.	-15 Jul 23 j 05:37	28°♁05'10	18.95391 AU
				opposition	-15 Jul 24 j 06:16	28°♁02'42	0°-39'-34
conjunction	-23 Dec 20 j 16:02	27°♁26'07	0°-17'-40	direct	-15 Oct 08 j 04:47	26°♁05'57	
minimum elong	-23 Dec 20 j 16:02	27°♁26'07	0°17'41				
max. Earth dist.	-23 Dec 21 j 14:09	27°♁29'23	20.62571 AU	conjunction	-14 Jan 21 j 17:31	0°≈00'05	0°-36'-40
	-22 Feb 05 j 10:33	0°♁		minimum elong	-14 Jan 21 j 17:31	0°≈00'05	0°36'42
retrograde	-22 Apr 08 j 05:51	1°♁31'16			-14 Jan 21 j 16:57	0°≈	
	-22 Jun 13 j 03:38	30°R♁		max. Earth dist.	-14 Jan 22 j 20:18	0°≈03'57	20.96767 AU
opposition	-22 Jun 24 j 19:51	29°♁32'08	0°-21'-9	retrograde	-14 May 11 j 11:41	4°≈01'56	
min. Earth dist.	-22 Jun 23 j 22:22	29°♁34'17	18.65448 AU	opposition	-14 Jul 28 j 15:37	2°≈02'47	0°-41'-28
direct	-22 Sep 09 j 11:04	27°♁34'02		min. Earth dist.	-14 Jul 27 j 14:15	2°≈05'20	18.98146 AU
	-22 Nov 27 j 14:18	0°♁		direct	-14 Oct 12 j 13:11	0°≈06'09	
conjunction	-22 Dec 24 j 23:20	1°♁34'30	0°-20'-32	conjunction	-13 Jan 25 j 22:30	3°≈59'43	0°-38'-18
minimum elong	-22 Dec 24 j 23:20	1°♁34'30	0°20'34	minimum elong	-13 Jan 25 j 22:30	3°≈59'43	0°38'18
max. Earth dist.	-22 Dec 25 j 21:16	1°♁37'43	20.68229 AU	max. Earth dist.	-13 Jan 27 j 00:31	4°≈03'28	20.99357 AU
retrograde	-21 Apr 12 j 17:03	5°♁39'07		retrograde	-13 May 15 j 20:05	8°≈01'24	
min. Earth dist.	-21 Jun 28 j 11:06	3°♁42'18	18.70952 AU	min. Earth dist.	-13 Jul 31 j 23:33	6°≈04'44	19.00581 AU
opposition	-21 Jun 29 j 09:24	3°♁40'04	0°-24'-16	opposition	-13 Aug 02 j 00:35	6°≈02'13	0°-43'-9
direct	-21 Sep 13 j 21:58	1°♁42'16		direct	-13 Oct 16 j 18:27	4°≈05'42	
conjunction	-21 Dec 29 j 06:27	5°♁41'40	0°-23'-17	conjunction	-12 Jan 30 j 03:38	7°≈58'47	0°-39'-44
minimum elong	-21 Dec 29 j 06:26	5°♁41'40	0°23'18	minimum elong	-12 Jan 30 j 03:38	7°≈58'47	0°39'45
max. Earth dist.	-21 Dec 30 j 06:13	5°♁45'09	20.73541 AU	max. Earth dist.	-12 Jan 31 j 06:57	8°≈02'43	21.01623 AU
retrograde	-20 Apr 16 j 03:22	9°♁45'47		retrograde	-12 May 19 j 04:38	12°≈00'21	
opposition	-20 Jul 02 j 22:28	7°♁46'49	0°-27'-14	min. Earth dist.	-12 Aug 04 j 07:26	10°≈03'45	19.02673 AU
min. Earth dist.	-20 Jul 01 j 23:27	7°♁49'07	18.76069 AU	opposition	-12 Aug 05 j 09:08	10°≈01'11	0°-44'-37
direct	-20 Sep 17 j 08:39	5°♁49'18		direct	-12 Oct 20 j 01:47	8°≈04'47	
conjunction	-19 Jan 01 j 12:56	9°♁47'38	0°-25'-55	conjunction	-11 Feb 02 j 08:34	11°≈57'30	0°-40'-58
minimum elong	-19 Jan 01 j 12:56	9°♁47'38	0°25'56	minimum elong	-11 Feb 02 j 08:34	11°≈57'30	0°40'58
max. Earth dist.	-19 Jan 02 j 12:14	9°♁51'03	20.78452 AU	max. Earth dist.	-11 Feb 03 j 10:53	12°≈01'16	21.03540 AU
retrograde	-19 Apr 20 j 14:02	13°♁51'18			-11 Apr 03 j 09:04	15°≈	
min. Earth dist.	-19 Jul 06 j 11:36	11°♁54'41	18.80775 AU	retrograde	-11 May 23 j 13:29	15°≈59'02	
opposition	-19 Jul 07 j 10:59	11°♁52'21	0°-30'-4		-11 Jul 14 j 11:01	15°R≈	
direct	-19 Sep 21 j 18:37	9°♁55'03		opposition	-11 Aug 09 j 17:26	13°≈59'51	0°-45'-53
				min. Earth dist.	-11 Aug 08 j 16:29	14°≈02'21	19.04410 AU
conjunction	-18 Jan 05 j 19:25	13°♁52'25	0°-28'-24	direct	-11 Oct 24 j 06:26	12°≈03'33	
minimum elong	-18 Jan 05 j 19:25	13°♁52'25	0°28'24		-10 Jan 21 j 03:54	15°≈	
max. Earth dist.	-18 Jan 06 j 20:16	13°♁56'03	20.82928 AU				
retrograde	-18 Apr 24 j 23:39	17°♁55'37		conjunction	-10 Feb 06 j 13:54	15°≈56'00	0°-42'-1
opposition	-18 Jul 11 j 22:36	15°♁56'40	0°-32'-43	minimum elong	-10 Feb 06 j 13:54	15°≈56'00	0°42'02

Planetary Phenomena of Uranus from -400 through 100 (UT), Astrodienst AG 14-Nov-2015 16:13, page 27

Attention, astronomical year style is used: The year -10 in astronomical counting style is the year 11 BCE in historical counting style.

max. Earth dist.	-10 Feb 07 j 17:06	15° $\approx$ 59'54	21.05077 AU	max. Earth dist.	-2 Mar 11 j 13:01	17° $\text{K}$ 51'50	20.99330 AU
retrograde	-10 May 27 j 21:55	19° $\approx$ 57'32		retrograde	-2 Jun 29 j 20:26	21° $\text{K}$ 52'19	
min. Earth dist.	-10 Aug 12 j 23:55	18° $\approx$ 00'55	19.05735 AU	opposition	-2 Sep 15 j 10:05	19° $\text{K}$ 52'27	0°-46'-56
opposition	-10 Aug 14 j 01:09	17° $\approx$ 58'23	0°-46'-55	min. Earth dist.	-2 Sep 14 j 16:49	19° $\text{K}$ 54'12	18.97942 AU
direct	-10 Oct 28 j 12:45	16° $\approx$ 02'12		direct	-2 Nov 29 j 08:09	17° $\text{K}$ 55'41	
conjunction	-9 Feb 10 j 19:12	19° $\approx$ 54'28	0°-42'-52	conjunction	-1 Mar 15 j 01:08	21° $\text{K}$ 49'28	0°-42'-1
minimum elong	-9 Feb 10 j 19:11	19° $\approx$ 54'28	0°42'52	minimum elong	-1 Mar 15 j 01:09	21° $\text{K}$ 49'28	0°42'02
max. Earth dist.	-9 Feb 11 j 20:58	19° $\approx$ 58'09	21.06190 AU	max. Earth dist.	-1 Mar 15 j 18:43	21° $\text{K}$ 51'59	20.96409 AU
retrograde	-9 Jun 01 j 07:02	23° $\approx$ 56'06		retrograde	-1 Jul 04 j 04:09	25° $\text{K}$ 53'11	
min. Earth dist.	-9 Aug 17 j 08:53	21° $\approx$ 59'21	19.06626 AU	opposition	-1 Sep 19 j 16:52	23° $\text{K}$ 53'09	0°-45'-52
opposition	-9 Aug 18 j 08:55	21° $\approx$ 56'56	0°-47'-44	min. Earth dist.	-1 Sep 19 j 01:34	23° $\text{K}$ 54'43	18.94850 AU
direct	-9 Nov 01 j 17:09	20° $\approx$ 00'50		direct	-1 Dec 03 j 12:15	21° $\text{K}$ 56'09	
conjunction	-8 Feb 15 j 00:47	23° $\approx$ 53'01	0°-43'-30	conjunction	00 Mar 18 j 09:34	25° $\text{K}$ 50'30	0°-40'-57
minimum elong	-8 Feb 15 j 00:47	23° $\approx$ 53'01	0°43'31	minimum elong	00 Mar 18 j 09:34	25° $\text{K}$ 50'30	0°40'58
max. Earth dist.	-8 Feb 16 j 03:07	23° $\approx$ 56'47	21.06839 AU	max. Earth dist.	00 Mar 19 j 02:59	25° $\text{K}$ 52'59	20.93155 AU
retrograde	-8 Jun 04 j 15:47	27° $\approx$ 54'47		retrograde	00 Jul 07 j 14:16	29° $\text{K}$ 54'41	
opposition	-8 Aug 21 j 16:23	25° $\approx$ 55'37	0°-48'-20	opposition	00 Sep 22 j 23:32	27° $\text{K}$ 54'30	0°-44'-35
min. Earth dist.	-8 Aug 20 j 16:22	25° $\approx$ 58'02	19.07016 AU	min. Earth dist.	00 Sep 22 j 08:28	27° $\text{K}$ 56'02	18.91429 AU
direct	-8 Nov 04 j 23:02	23° $\approx$ 59'34		direct	00 Dec 06 j 19:15	25° $\text{K}$ 57'17	
conjunction	-7 Feb 18 j 06:40	27° $\approx$ 51'45	0°-43'-56	conjunction	01 Mar 22 j 18:35	29° $\text{K}$ 52'18	0°-39'-41
minimum elong	-7 Feb 18 j 06:40	27° $\approx$ 51'45	0°43'57	minimum elong	01 Mar 22 j 18:35	29° $\text{K}$ 52'18	0°39'42
max. Earth dist.	-7 Feb 19 j 07:07	27° $\approx$ 55'15	21.06966 AU	max. Earth dist.	01 Mar 23 j 09:40	29° $\text{K}$ 54'27	20.89586 AU
retrograde	-7 Mar 29 j 16:08	0° $\text{K}$		retrograde	01 Mar 25 j 00:27	0° $\text{V}$	
opposition	-7 Jun 09 j 00:33	1° $\text{K}$ 53'42		opposition	01 Jul 11 j 23:02	3° $\text{V}$ 56'59	
min. Earth dist.	-7 Aug 23 j 16:56	30° $\text{R}$		min. Earth dist.	01 Sep 27 j 06:23	1° $\text{V}$ 56'39	0°-43'-5
direct	-7 Aug 25 j 23:42	29° $\approx$ 54'30	0°-48'-41	direct	01 Sep 26 j 17:28	1° $\text{V}$ 57'59	18.87715 AU
conjunction	-7 Aug 25 j 01:27	29° $\approx$ 56'44	19.06872 AU	conjunction	01 Dec 05 j 12:32	30° $\text{R}$ $\text{K}$	
retrograde	-7 Nov 09 j 03:42	27° $\approx$ 58'26		retrograde	01 Dec 10 j 23:43	29° $\text{K}$ 59'13	
opposition	-6 Jan 19 j 23:22	0° $\text{K}$		opposition	01 Dec 16 j 10:03	0° $\text{V}$	
min. Earth dist.				min. Earth dist.			
direct				direct			
conjunction	-6 Feb 22 j 13:05	1° $\text{K}$ 50'43	0°-44'-9	conjunction	02 Mar 27 j 04:20	3° $\text{V}$ 54'59	0°-38'-14
minimum elong	-6 Feb 22 j 13:05	1° $\text{K}$ 50'43	0°44'10	minimum elong	02 Mar 27 j 04:20	3° $\text{V}$ 54'59	0°38'15
max. Earth dist.	-6 Feb 23 j 13:30	1° $\text{K}$ 54'12	21.06533 AU	max. Earth dist.	02 Mar 27 j 18:59	3° $\text{V}$ 57'05	20.85735 AU
retrograde	-6 Jun 13 j 09:56	5° $\text{K}$ 52'52		retrograde	02 Jul 16 j 10:00	8° $\text{V}$ 00'14	
min. Earth dist.	-6 Aug 29 j 08:53	3° $\text{K}$ 55'48	19.06139 AU	opposition	02 Oct 01 j 13:22	5° $\text{V}$ 59'48	0°-41'-22
opposition	-6 Aug 30 j 06:49	3° $\text{K}$ 53'35	0°-48'-49	min. Earth dist.	02 Oct 01 j 00:46	6° $\text{V}$ 01'06	18.83714 AU
direct	-6 Nov 13 j 09:40	1° $\text{K}$ 57'28		direct	02 Dec 15 j 06:46	4° $\text{V}$ 02'10	
conjunction	-5 Feb 26 j 19:30	5° $\text{K}$ 49'54	0°-44'-10	conjunction	03 Mar 31 j 14:25	7° $\text{V}$ 58'45	0°-36'-34
minimum elong	-5 Feb 26 j 19:30	5° $\text{K}$ 49'54	0°44'11	minimum elong	03 Mar 31 j 14:25	7° $\text{V}$ 58'45	0°36'35
max. Earth dist.	-5 Feb 27 j 17:43	5° $\text{K}$ 53'04	21.05512 AU	max. Earth dist.	03 Apr 01 j 02:43	8° $\text{V}$ 00'31	20.81599 AU
retrograde	-5 Jun 17 j 17:40	9° $\text{K}$ 52'18		retrograde	03 Jul 20 j 19:59	12° $\text{V}$ 04'38	
opposition	-5 Sep 03 j 13:57	7° $\text{K}$ 52'54	0°-48'-42	opposition	03 Oct 05 j 20:49	10° $\text{V}$ 04'06	0°-39'-26
min. Earth dist.	-5 Sep 02 j 17:59	7° $\text{K}$ 54'55	19.04834 AU	min. Earth dist.	03 Oct 05 j 10:31	10° $\text{V}$ 05'09	18.79438 AU
direct	-5 Nov 17 j 14:31	5° $\text{K}$ 56'41		direct	03 Dec 19 j 11:58	8° $\text{V}$ 06'15	
conjunction	-4 Mar 02 j 02:28	9° $\text{K}$ 49'19	0°-43'-57	conjunction	04 Apr 04 j 01:34	12° $\text{V}$ 03'47	0°-34'-43
minimum elong	-4 Mar 02 j 02:28	9° $\text{K}$ 49'19	0°43'57	minimum elong	04 Apr 04 j 01:34	12° $\text{V}$ 03'47	0°34'45
max. Earth dist.	-4 Mar 03 j 00:35	9° $\text{K}$ 52'29	21.03940 AU	max. Earth dist.	04 Apr 04 j 13:11	12° $\text{V}$ 05'27	20.77191 AU
retrograde	-4 Jun 21 j 03:28	13° $\text{K}$ 51'59		retrograde	04 Jul 24 j 08:09	16° $\text{V}$ 10'18	
opposition	-4 Sep 06 j 20:46	11° $\text{K}$ 52'26	0°-48'-20	opposition	04 Oct 09 j 04:17	14° $\text{V}$ 09'42	0°-37'-17
min. Earth dist.	-4 Sep 06 j 01:09	11° $\text{K}$ 54'26	19.02992 AU	min. Earth dist.	04 Oct 08 j 18:37	14° $\text{V}$ 10'42	18.74873 AU
direct	-4 Nov 20 j 20:54	9° $\text{K}$ 56'04		direct	04 Dec 22 j 19:40	12° $\text{V}$ 11'37	
conjunction	-3 Mar 06 j 09:34	13° $\text{K}$ 49'00	0°-43'-31	conjunction	05 Apr 08 j 13:25	16° $\text{V}$ 10'11	0°-32'-40
minimum elong	-3 Mar 06 j 09:34	13° $\text{K}$ 49'00	0°43'33	minimum elong	05 Apr 08 j 13:25	16° $\text{V}$ 10'11	0°32'41
max. Earth dist.	-3 Mar 07 j 05:29	13° $\text{K}$ 51'50	21.01858 AU	max. Earth dist.	05 Apr 08 j 22:20	16° $\text{V}$ 11'28	20.72472 AU
retrograde	-3 Jun 25 j 10:45	17° $\text{K}$ 51'58		retrograde	05 Jul 28 j 19:13	20° $\text{V}$ 17'25	
min. Earth dist.	-3 Sep 10 j 10:02	15° $\text{K}$ 54'03	19.00679 AU	opposition	05 Oct 13 j 12:21	18° $\text{V}$ 16'44	0°-34'-56
opposition	-3 Sep 11 j 03:36	15° $\text{K}$ 52'16	0°-47'-45	min. Earth dist.	05 Oct 13 j 05:25	18° $\text{V}$ 17'27	18.69990 AU
direct	-3 Nov 25 j 01:17	13° $\text{K}$ 55'42		direct	05 Dec 27 j 01:50	16° $\text{V}$ 18'25	
conjunction	-2 Mar 10 j 17:15	17° $\text{K}$ 49'00	0°-42'-52	conjunction	06 Apr 13 j 02:12	20° $\text{V}$ 18'04	0°-30'-27
minimum elong	-2 Mar 10 j 17:15	17° $\text{K}$ 49'00	0°42'53	minimum elong	06 Apr 13 j 02:12	20° $\text{V}$ 18'04	0°30'28

max. Earth dist.	06 Apr 13 j 09:53	20°♃19'11	20.67420 AU	retrograde	13 Sep 01 j 12:23	24°♃09'16	
retrograde	06 Aug 02 j 08:35	24°♃26'02		opposition	13 Nov 15 j 19:34	22°♃07'25	0°-10'-2
opposition	06 Oct 17 j 20:35	22°♃25'15	0°-32'-23	min. Earth dist.	13 Nov 16 j 02:56	22°♃06'37	18.20610 AU
min. Earth dist.	06 Oct 17 j 14:33	22°♃25'53	18.64753 AU	direct	14 Jan 29 j 10:44	20°♃06'04	
direct	06 Dec 31 j 10:51	20°♃26'40					
				conjunction	14 May 18 j 12:11	24°♃16'18	0°-7'-28
conjunction	07 Apr 17 j 15:40	24°♃27'29	0°-28'-3	minimum elong	14 May 18 j 12:11	24°♃16'18	0°07'29
minimum elong	07 Apr 17 j 15:40	24°♃27'29	0°28'04	behind sun begin	14 May 18 j 06:02	24°♃15'25	
max. Earth dist.	07 Apr 17 j 20:25	24°♃28'10	20.62004 AU	behind sun end	14 May 18 j 18:20	24°♃17'12	
retrograde	07 Aug 06 j 20:23	28°♃36'11		max. Earth dist.	14 May 18 j 02:48	24°♃14'56	20.17310 AU
opposition	07 Oct 22 j 05:29	26°♃35'18	0°-29'-38	retrograde	14 Sep 06 j 05:37	28°♃30'27	
min. Earth dist.	07 Oct 22 j 02:20	26°♃35'37	18.59160 AU	opposition	14 Nov 20 j 07:42	26°♃28'27	0°-6'-23
direct	08 Jan 04 j 18:16	24°♃36'23		min. Earth dist.	14 Nov 20 j 15:36	26°♃27'37	18.13996 AU
				direct	15 Feb 03 j 00:45	24°♃26'43	
conjunction	08 Apr 21 j 06:01	28°♃38'24	0°-25'-30				
minimum elong	08 Apr 21 j 06:01	28°♃38'24	0°25'30	conjunction	15 May 23 j 08:00	28°♃38'28	0°-4'-10
max. Earth dist.	08 Apr 21 j 09:11	28°♃38'52	20.56244 AU	minimum elong	15 May 23 j 07:59	28°♃38'28	0°04'11
	08 May 15 j 02:01	0°♃		behind sun begin	15 May 23 j 01:18	28°♃37'30	
retrograde	08 Aug 10 j 10:50	2°♃47'52		behind sun end	15 May 23 j 14:40	28°♃39'26	
opposition	08 Oct 25 j 14:39	0°♃46'49	0°-26'-44	max. Earth dist.	15 May 22 j 20:59	28°♃36'51	20.10736 AU
min. Earth dist.	08 Oct 25 j 12:28	0°♃47'03	18.53222 AU		15 Jun 15 j 13:43	0°♃	
	08 Nov 13 j 17:33	30°♃		retrograde	15 Sep 10 j 21:52	2°♃53'24	
direct	09 Jan 08 j 04:35	28°♃47'33		opposition	15 Nov 24 j 20:38	0°♃51'20	0°-2'-41
	09 Mar 02 j 23:24	0°♃		min. Earth dist.	15 Nov 25 j 06:45	0°♃50'14	18.07487 AU
					15 Dec 15 j 10:15	30°♃	
conjunction	09 Apr 25 j 21:10	2°♃50'50	0°-22'-47	direct	16 Feb 07 j 13:33	28°♃49'13	
minimum elong	09 Apr 25 j 21:10	2°♃50'50	0°22'48		16 Mar 31 j 13:03	0°♃	
max. Earth dist.	09 Apr 25 j 21:25	2°♃50'52	20.50150 AU				
retrograde	09 Aug 14 j 23:34	7°♃01'03		conjunction	16 May 27 j 04:39	3°♃02'30	0°00'-46
opposition	09 Oct 30 j 00:16	4°♃59'51	0°-23'-39	minimum elong	16 May 27 j 04:38	3°♃02'30	0°00'47
min. Earth dist.	09 Oct 30 j 01:01	4°♃59'46	18.46990 AU	behind sun begin	16 May 26 j 21:52	3°♃01'31	
direct	10 Jan 12 j 13:30	3°♃00'11		behind sun end	16 May 27 j 11:24	3°♃03'29	
				max. Earth dist.	16 May 26 j 15:37	3°♃00'34	20.04302 AU
conjunction	10 Apr 30 j 13:07	7°♃04'46	0°-19'-56	asc. node	16 Aug 16 j 21:44	6°♃56'35	
minimum elong	10 Apr 30 j 13:07	7°♃04'46	0°19'56	retrograde	16 Sep 14 j 16:15	7°♃18'15	
max. Earth dist.	10 Apr 30 j 11:42	7°♃04'34	20.43809 AU	opposition	16 Nov 28 j 10:10	5°♃16'06	0°01'03
retrograde	10 Aug 19 j 14:46	11°♃15'44		min. Earth dist.	16 Nov 28 j 20:54	5°♃14'57	18.01121 AU
opposition	10 Nov 03 j 10:17	9°♃14'23	0°-20'-25	direct	17 Feb 11 j 05:29	3°♃13'39	
min. Earth dist.	10 Nov 03 j 11:50	9°♃14'13	18.40540 AU	max. Earth dist.	17 May 31 j 11:57	7°♃26'22	19.97998 AU
direct	11 Jan 17 j 00:40	7°♃14'18					
				conjunction	17 Jun 01 j 02:16	7°♃28'30	0°02'43
conjunction	11 May 05 j 05:34	11°♃20'14	0°-16'-58	minimum elong	17 Jun 01 j 02:15	7°♃28'30	0°02'43
minimum elong	11 May 05 j 05:34	11°♃20'14	0°16'59	behind sun begin	17 May 31 j 19:28	7°♃27'31	
max. Earth dist.	11 May 05 j 01:44	11°♃19'41	20.37274 AU	behind sun end	17 Jun 01 j 09:01	7°♃29'29	
	11 Jul 19 j 14:56	15°♃		retrograde	17 Sep 19 j 09:43	11°♃45'02	
retrograde	11 Aug 24 j 04:57	15°♃31'59		opposition	17 Dec 03 j 00:31	9°♃42'52	0°04'50
	11 Sep 29 j 03:37	15°♃		min. Earth dist.	17 Dec 03 j 13:27	9°♃41'29	17.94894 AU
opposition	11 Nov 07 j 20:57	13°♃30'27	0°-17'-4	direct	18 Feb 15 j 20:00	7°♃40'05	
min. Earth dist.	11 Nov 08 j 01:10	13°♃30'00	18.33946 AU	max. Earth dist.	18 Jun 05 j 07:58	11°♃54'01	19.91852 AU
direct	12 Jan 21 j 10:56	11°♃29'56					
	12 Apr 28 j 08:35	15°♃		conjunction	18 Jun 06 j 00:37	11°♃56'30	0°06'06
				minimum elong	18 Jun 06 j 00:36	11°♃56'30	0°06'07
conjunction	12 May 08 j 23:01	15°♃37'16	0°-13'-53	behind sun begin	18 Jun 05 j 18:11	11°♃55'34	
minimum elong	12 May 08 j 23:02	15°♃37'16	0°13'54	behind sun end	18 Jun 06 j 07:02	11°♃57'27	
behind sun begin	12 May 08 j 19:44	15°♃36'48		retrograde	18 Sep 24 j 05:24	16°♃13'51	
behind sun end	12 May 09 j 02:20	15°♃37'44		opposition	18 Dec 07 j 15:36	14°♃11'39	0°08'36
max. Earth dist.	12 May 08 j 17:30	15°♃36'28	20.30643 AU	min. Earth dist.	18 Dec 08 j 05:22	14°♃10'10	17.88820 AU
retrograde	12 Aug 27 j 21:05	19°♃49'48		direct	19 Feb 20 j 14:11	12°♃08'32	
opposition	12 Nov 11 j 07:49	17°♃48'06	0°-13'-36				
min. Earth dist.	12 Nov 11 j 12:45	17°♃47'34	18.27284 AU	conjunction	19 Jun 10 j 23:49	16°♃26'31	0°09'29
direct	13 Jan 24 j 23:18	15°♃47'10		minimum elong	19 Jun 10 j 23:49	16°♃26'31	0°09'29
				behind sun begin	19 Jun 10 j 18:13	16°♃25'41	
conjunction	13 May 13 j 17:17	19°♃55'56	0°-10'-42	behind sun end	19 Jun 11 j 05:25	16°♃27'20	
minimum elong	13 May 13 j 17:17	19°♃55'56	0°10'43	max. Earth dist.	19 Jun 10 j 06:13	16°♃23'52	19.85828 AU
behind sun begin	13 May 13 j 12:09	19°♃55'12		retrograde	19 Sep 29 j 00:05	20°♃44'36	
behind sun end	13 May 13 j 22:25	19°♃56'40		opposition	19 Dec 12 j 07:37	18°♃42'24	0°12'22
max. Earth dist.	13 May 13 j 09:40	19°♃54'50	20.23960 AU	min. Earth dist.	19 Dec 12 j 23:29	18°♃40'41	17.82859 AU

direct	20 Feb 25 j 06:51	16°♄38'58		direct	28 Apr 02 j 12:45	23°♅38'49	
conjunction	20 Jun 14 j 23:52	20°♄58'26	0°12'50	conjunction	28 Jul 23 j 18:26	28°♅08'01	0°35'35
minimum elong	20 Jun 14 j 23:52	20°♄58'26	0°12'51	minimum elong	28 Jul 23 j 18:26	28°♅08'01	0°35'35
behind sun begin	20 Jun 14 j 19:48	20°♄57'51		max. Earth dist.	28 Jul 22 j 14:32	28°♅03'41	19.41527 AU
behind sun end	20 Jun 15 j 03:55	20°♄59'02			28 Aug 23 j 15:14	0°♄	
max. Earth dist.	20 Jun 14 j 03:30	20°♄55'22	19.79927 AU	retrograde	28 Nov 09 j 05:48	2°♄30'32	
retrograde	20 Oct 02 j 20:52	25°♄17'14		opposition	29 Jan 21 j 15:18	0°♄28'01	0°40'47
opposition	20 Dec 16 j 00:14	23°♄15'00	0°16'05	min. Earth dist.	29 Jan 22 j 15:04	0°♄25'25	17.40110 AU
min. Earth dist.	20 Dec 16 j 17:14	23°♄13'10	17.77025 AU		29 Feb 01 j 09:31	30°♄♅	
direct	21 Mar 01 j 02:59	21°♄11'13		direct	29 Apr 07 j 12:37	28°♅21'49	
max. Earth dist.	21 Jun 19 j 03:41	25°♄28'59	19.74142 AU		29 Jun 09 j 06:22	0°♄	
conjunction	21 Jun 20 j 00:46	25°♄32'11	0°16'08	conjunction	29 Jul 28 j 21:59	2°♄51'51	0°37'35
minimum elong	21 Jun 20 j 00:46	25°♄32'11	0°16'07	minimum elong	29 Jul 28 j 21:59	2°♄51'51	0°37'35
retrograde	21 Oct 07 j 17:06	29°♄51'37		max. Earth dist.	29 Jul 27 j 18:46	2°♄47'36	19.38754 AU
opposition	21 Dec 20 j 17:50	27°♄49'21	0°19'43	retrograde	29 Nov 14 j 06:27	7°♄14'35	
min. Earth dist.	21 Dec 21 j 12:31	27°♄47'19	17.71315 AU	opposition	30 Jan 26 j 14:04	5°♄12'09	0°42'54
direct	22 Mar 05 j 22:07	25°♄45'13		min. Earth dist.	30 Jan 27 j 12:51	5°♄09'39	17.37631 AU
	22 Jun 23 j 00:19	0°♅		direct	30 Apr 12 j 14:12	3°♄05'52	
max. Earth dist.	22 Jun 24 j 02:11	0°♅03'57	19.68519 AU	max. Earth dist.	30 Aug 01 j 22:13	7°♄32'19	19.36571 AU
conjunction	22 Jun 25 j 01:55	0°♅07'34	0°19'21	conjunction	30 Aug 03 j 01:25	7°♄36'34	0°39'20
minimum elong	22 Jun 25 j 01:55	0°♅07'34	0°19'21	minimum elong	30 Aug 03 j 01:25	7°♄36'34	0°39'21
retrograde	22 Oct 12 j 14:27	4°♅27'38		retrograde	30 Nov 19 j 05:00	11°♄59'29	
opposition	22 Dec 25 j 12:03	2°♅25'18	0°23'15	opposition	31 Jan 31 j 13:30	9°♄57'09	0°44'43
min. Earth dist.	22 Dec 26 j 07:49	2°♅23'09	17.65799 AU	min. Earth dist.	31 Feb 01 j 13:00	9°♄54'34	17.35752 AU
direct	23 Mar 10 j 19:21	0°♅20'47		direct	31 Apr 17 j 15:09	7°♄50'49	
max. Earth dist.	23 Jun 29 j 03:57	4°♅40'50	19.63107 AU	max. Earth dist.	31 Aug 07 j 02:15	12°♄17'54	19.34982 AU
conjunction	23 Jun 30 j 03:54	4°♅44'30	0°22'27	conjunction	31 Aug 08 j 05:01	12°♄22'06	0°40'50
minimum elong	23 Jun 30 j 03:54	4°♅44'30	0°22'27	minimum elong	31 Aug 08 j 05:01	12°♄22'06	0°40'49
retrograde	23 Oct 17 j 12:13	9°♅05'05			31 Sep 21 j 23:17	15°♄	
opposition	23 Dec 30 j 06:53	7°♅02'43	0°26'39	retrograde	31 Nov 24 j 05:54	16°♄45'07	
min. Earth dist.	23 Dec 31 j 03:49	7°♅00'26	17.60516 AU		32 Jan 30 j 00:00	15°♄♄	
direct	24 Mar 14 j 16:31	4°♅57'52		opposition	32 Feb 05 j 13:11	14°♄42'54	0°46'14
max. Earth dist.	24 Jul 03 j 03:54	9°♅18'48	19.57971 AU	min. Earth dist.	32 Feb 06 j 11:34	14°♄40'28	17.34432 AU
conjunction	24 Jul 04 j 06:12	9°♅22'50	0°25'26	direct	32 Apr 21 j 18:36	12°♄36'35	
minimum elong	24 Jul 04 j 06:12	9°♅22'50	0°25'26	max. Earth dist.	32 Jul 07 j 22:23	15°♄	
retrograde	24 Oct 21 j 09:59	13°♅43'56			32 Aug 11 j 06:31	17°♄04'13	19.33923 AU
opposition	25 Jan 03 j 02:29	11°♅41'29	0°29'53	conjunction	32 Aug 12 j 08:41	17°♄08'19	0°42'03
min. Earth dist.	25 Jan 04 j 00:29	11°♅39'05	17.55552 AU	minimum elong	32 Aug 12 j 08:41	17°♄08'19	0°42'03
direct	25 Mar 19 j 14:40	9°♅36'17		retrograde	32 Nov 28 j 04:38	21°♄31'21	
max. Earth dist.	25 Jul 08 j 06:57	13°♅58'27	19.53175 AU	opposition	33 Feb 09 j 13:44	19°♄29'16	0°47'26
conjunction	25 Jul 09 j 08:57	14°♅02'28	0°28'15	min. Earth dist.	33 Feb 10 j 12:52	19°♄26'45	17.33636 AU
minimum elong	25 Jul 09 j 08:57	14°♅02'27	0°28'16	direct	33 Apr 26 j 20:59	17°♄22'58	
retrograde	25 Oct 26 j 09:09	18°♅23'59		max. Earth dist.	33 Aug 16 j 09:56	21°♄50'53	19.33377 AU
opposition	26 Jan 07 j 22:43	16°♅21'30	0°32'57	conjunction	33 Aug 17 j 12:00	21°♄54'59	0°42'59
min. Earth dist.	26 Jan 08 j 21:09	16°♅19'03	17.50952 AU	minimum elong	33 Aug 17 j 12:00	21°♄54'59	0°42'59
direct	26 Mar 24 j 13:41	14°♅15'59		retrograde	33 Dec 03 j 05:39	26°♄17'59	
max. Earth dist.	26 Jul 13 j 08:13	18°♅38'59	19.48790 AU	opposition	34 Feb 14 j 14:35	24°♄16'00	0°48'19
conjunction	26 Jul 14 j 11:51	18°♅43'15	0°30'54	min. Earth dist.	34 Feb 15 j 12:19	24°♄13'39	17.33326 AU
minimum elong	26 Jul 14 j 11:51	18°♅43'15	0°30'54	direct	34 May 02 j 01:39	22°♄09'45	
retrograde	26 Oct 31 j 07:10	23°♅05'10		conjunction	34 Aug 22 j 15:18	26°♄41'53	0°43'37
opposition	27 Jan 12 j 19:37	21°♅02'39	0°35'48	minimum elong	34 Aug 22 j 15:18	26°♄41'53	0°43'37
min. Earth dist.	27 Jan 13 j 18:57	21°♅00'06	17.46816 AU	max. Earth dist.	34 Aug 21 j 14:30	26°♄37'59	19.33293 AU
direct	27 Mar 29 j 12:29	18°♅56'50			34 Oct 20 j 12:42	0°♄♄	
conjunction	27 Jul 19 j 15:02	23°♅25'08	0°33'21	retrograde	34 Dec 08 j 04:41	1°♄04'44	
minimum elong	27 Jul 19 j 15:02	23°♅25'08	0°33'22		35 Jan 27 j 19:38	30°♄♄	
max. Earth dist.	27 Jul 18 j 12:03	23°♅20'57	19.44895 AU	opposition	35 Feb 19 j 15:50	29°♄02'52	0°48'52
retrograde	27 Nov 05 j 07:25	27°♅47'22		min. Earth dist.	35 Feb 20 j 14:06	29°♄00'27	17.33474 AU
opposition	28 Jan 17 j 17:08	25°♅44'50	0°38'25	direct	35 May 07 j 04:25	26°♄56'39	
min. Earth dist.	28 Jan 18 j 16:08	25°♅42'19	17.43178 AU		35 Aug 03 j 20:46	0°♄♄	

conjunction	35 Aug 27 j 18:09	1° $\mathring{M}$ 28'46	0°43'57	max. Earth dist.	43 Oct 04 j 07:07	9° $\mathring{L}$ 15'16	19.53524 AU
minimum elong	35 Aug 27 j 18:09	1° $\mathring{M}$ 28'46	0°43'58	retrograde	44 Jan 19 j 17:50	13° $\mathring{L}$ 35'41	
max. Earth dist.	35 Aug 26 j 17:09	1° $\mathring{M}$ 24'49	19.33668 AU	opposition	44 Apr 03 j 06:08	11° $\mathring{L}$ 34'30	0°38'59
retrograde	35 Dec 13 j 05:58	5° $\mathring{M}$ 51'23		min. Earth dist.	44 Apr 03 j 15:57	11° $\mathring{L}$ 33'28	17.55864 AU
opposition	36 Feb 24 j 17:19	3° $\mathring{M}$ 49'37	0°49'04	direct	44 Jun 19 j 10:50	9° $\mathring{L}$ 29'45	
min. Earth dist.	36 Feb 25 j 14:04	3° $\mathring{M}$ 47'22	17.34061 AU				
direct	36 May 11 j 09:19	1° $\mathring{M}$ 43'26		conjunction	44 Oct 08 j 15:48	13° $\mathring{L}$ 55'27	0°33'53
				minimum elong	44 Oct 08 j 15:48	13° $\mathring{L}$ 55'27	0°33'53
conjunction	36 Aug 31 j 20:44	6° $\mathring{M}$ 15'22	0°43'59	max. Earth dist.	44 Oct 08 j 06:32	13° $\mathring{L}$ 54'00	19.58299 AU
minimum elong	36 Aug 31 j 20:44	6° $\mathring{M}$ 15'22	0°43'58	retrograde	45 Jan 23 j 14:54	18° $\mathring{L}$ 13'18	
max. Earth dist.	36 Aug 30 j 21:35	6° $\mathring{M}$ 11'43	19.34467 AU	opposition	45 Apr 08 j 06:57	16° $\mathring{L}$ 12'18	0°36'27
retrograde	36 Dec 17 j 04:57	10° $\mathring{M}$ 37'41		min. Earth dist.	45 Apr 08 j 14:13	16° $\mathring{L}$ 11'32	17.60836 AU
opposition	37 Feb 28 j 19:08	8° $\mathring{M}$ 36'00	0°48'55	direct	45 Jun 24 j 13:21	14° $\mathring{L}$ 07'57	
min. Earth dist.	37 Mar 01 j 15:55	8° $\mathring{M}$ 33'45	17.35075 AU				
direct	37 May 16 j 11:54	6° $\mathring{M}$ 29'54		conjunction	45 Oct 13 j 11:41	18° $\mathring{L}$ 32'27	0°31'31
				minimum elong	45 Oct 13 j 11:41	18° $\mathring{L}$ 32'27	0°31'32
conjunction	37 Sep 05 j 22:36	11° $\mathring{M}$ 01'29	0°43'42	max. Earth dist.	45 Oct 13 j 04:13	18° $\mathring{L}$ 31'17	19.63476 AU
minimum elong	37 Sep 05 j 22:37	11° $\mathring{M}$ 01'29	0°43'42	retrograde	46 Jan 28 j 10:27	22° $\mathring{L}$ 49'37	
max. Earth dist.	37 Sep 04 j 23:27	10° $\mathring{M}$ 57'50	19.35713 AU	opposition	46 Apr 13 j 07:27	20° $\mathring{L}$ 48'47	0°33'42
retrograde	37 Dec 22 j 05:54	15° $\mathring{M}$ 23'25		min. Earth dist.	46 Apr 13 j 13:32	20° $\mathring{L}$ 48'09	17.66200 AU
opposition	38 Mar 05 j 20:56	13° $\mathring{M}$ 21'46	0°48'26	direct	46 Jun 29 j 13:16	18° $\mathring{L}$ 44'50	
min. Earth dist.	38 Mar 06 j 16:03	13° $\mathring{M}$ 19'42	17.36546 AU				
direct	38 May 21 j 16:26	11° $\mathring{M}$ 15'45		conjunction	46 Oct 18 j 06:44	23° $\mathring{L}$ 08'03	0°28'58
				minimum elong	46 Oct 18 j 06:44	23° $\mathring{L}$ 08'03	0°28'57
conjunction	38 Sep 10 j 23:55	15° $\mathring{M}$ 46'51	0°43'07	max. Earth dist.	46 Oct 18 j 01:30	23° $\mathring{L}$ 07'14	19.69002 AU
minimum elong	38 Sep 10 j 23:55	15° $\mathring{M}$ 46'51	0°43'07	retrograde	47 Feb 02 j 06:59	27° $\mathring{L}$ 24'29	
max. Earth dist.	38 Sep 10 j 03:14	15° $\mathring{M}$ 43'35	19.37413 AU	opposition	47 Apr 18 j 07:28	25° $\mathring{L}$ 23'51	0°30'45
retrograde	38 Dec 27 j 04:25	20° $\mathring{M}$ 08'20		min. Earth dist.	47 Apr 18 j 10:53	25° $\mathring{L}$ 23'29	17.71849 AU
opposition	39 Mar 10 j 22:49	18° $\mathring{M}$ 06'44	0°47'37	direct	47 Jul 04 j 14:44	23° $\mathring{L}$ 20'18	
min. Earth dist.	39 Mar 11 j 17:20	18° $\mathring{M}$ 04'44	17.38469 AU				
direct	39 May 26 j 19:12	16° $\mathring{M}$ 00'49		conjunction	47 Oct 23 j 01:00	27° $\mathring{L}$ 42'11	0°26'14
max. Earth dist.	39 Sep 15 j 04:09	20° $\mathring{M}$ 28'05	19.39586 AU	minimum elong	47 Oct 23 j 01:01	27° $\mathring{L}$ 42'11	0°26'14
				max. Earth dist.	47 Oct 22 j 21:43	27° $\mathring{L}$ 41'40	19.74771 AU
conjunction	39 Sep 16 j 00:28	20° $\mathring{M}$ 31'17	0°42'14		47 Nov 30 j 22:07	0° $\mathring{M}$	
minimum elong	39 Sep 16 j 00:28	20° $\mathring{M}$ 31'17	0°42'14	retrograde	48 Feb 07 j 01:15	1° $\mathring{M}$ 57'52	
retrograde	40 Jan 01 j 03:57	24° $\mathring{M}$ 52'15			48 Apr 21 j 06:13	30° $\mathring{R}$ $\mathring{L}$	
opposition	40 Mar 15 j 00:29	22° $\mathring{M}$ 50'41	0°46'29	opposition	48 Apr 22 j 07:13	29° $\mathring{L}$ 57'24	0°27'37
min. Earth dist.	40 Mar 15 j 17:19	22° $\mathring{M}$ 48'53	17.40890 AU	min. Earth dist.	48 Apr 22 j 09:45	29° $\mathring{L}$ 57'08	17.77728 AU
direct	40 May 30 j 23:33	20° $\mathring{M}$ 44'53		direct	48 Jul 08 j 13:07	27° $\mathring{L}$ 54'15	
max. Earth dist.	40 Sep 19 j 06:59	25° $\mathring{M}$ 11'52	19.42265 AU		48 Sep 18 j 17:41	0° $\mathring{M}$	
				conjunction	48 Oct 26 j 18:29	2° $\mathring{M}$ 14'43	0°23'22
conjunction	40 Sep 20 j 00:25	25° $\mathring{M}$ 14'36	0°41'05	minimum elong	48 Oct 26 j 18:29	2° $\mathring{M}$ 14'43	0°23'21
minimum elong	40 Sep 20 j 00:25	25° $\mathring{M}$ 14'36	0°41'05	max. Earth dist.	48 Oct 26 j 16:58	2° $\mathring{M}$ 14'29	19.80745 AU
retrograde	41 Jan 05 j 01:38	29° $\mathring{M}$ 35'00		retrograde	49 Feb 10 j 21:08	6° $\mathring{M}$ 29'37	
opposition	41 Mar 20 j 02:17	27° $\mathring{M}$ 33'30	0°45'02	opposition	49 Apr 27 j 06:25	4° $\mathring{M}$ 29'18	0°24'19
min. Earth dist.	41 Mar 20 j 17:37	27° $\mathring{M}$ 31'51	17.43822 AU	min. Earth dist.	49 Apr 27 j 06:06	4° $\mathring{M}$ 29'20	17.83766 AU
direct	41 Jun 05 j 02:50	25° $\mathring{M}$ 27'54		direct	49 Jul 13 j 12:54	2° $\mathring{M}$ 26'33	
				conjunction	49 Oct 31 j 11:03	6° $\mathring{M}$ 45'34	0°20'21
conjunction	41 Sep 24 j 23:17	29° $\mathring{M}$ 56'43	0°39'39	minimum elong	49 Oct 31 j 11:03	6° $\mathring{M}$ 45'34	0°20'21
minimum elong	41 Sep 24 j 23:17	29° $\mathring{M}$ 56'43	0°39'38	max. Earth dist.	49 Oct 31 j 11:43	6° $\mathring{M}$ 45'40	19.86838 AU
max. Earth dist.	41 Sep 24 j 06:53	29° $\mathring{M}$ 54'08	19.45473 AU	retrograde	50 Feb 15 j 14:38	10° $\mathring{M}$ 59'40	
	41 Sep 25 j 20:13	0° $\mathring{L}$		opposition	50 May 02 j 05:10	8° $\mathring{M}$ 59'29	0°20'54
retrograde	42 Jan 09 j 23:47	4° $\mathring{L}$ 16'32		min. Earth dist.	50 May 02 j 04:09	8° $\mathring{M}$ 59'35	17.89909 AU
opposition	42 Mar 25 j 03:51	2° $\mathring{L}$ 15'05	0°43'17	direct	50 Jul 18 j 10:03	6° $\mathring{M}$ 57'06	
min. Earth dist.	42 Mar 25 j 17:20	2° $\mathring{L}$ 13'38	17.47310 AU				
direct	42 Jun 10 j 06:06	0° $\mathring{L}$ 09'42		conjunction	50 Nov 05 j 02:50	11° $\mathring{M}$ 14'37	0°17'14
				minimum elong	50 Nov 05 j 02:49	11° $\mathring{M}$ 14'37	0°17'14
conjunction	42 Sep 29 j 21:38	4° $\mathring{L}$ 37'34	0°37'58	max. Earth dist.	50 Nov 05 j 04:48	11° $\mathring{M}$ 14'55	19.93020 AU
minimum elong	42 Sep 29 j 21:38	4° $\mathring{L}$ 37'34	0°37'58		51 Jan 18 j 22:36	15° $\mathring{M}$	
max. Earth dist.	42 Sep 29 j 08:13	4° $\mathring{L}$ 35'27	19.49238 AU	retrograde	51 Feb 20 j 09:02	15° $\mathring{M}$ 27'53	
retrograde	43 Jan 14 j 21:01	8° $\mathring{L}$ 56'44		opposition	51 Mar 25 j 17:55	15° $\mathring{R}$ $\mathring{M}$	
opposition	43 Mar 30 j 05:01	6° $\mathring{L}$ 55'25	0°41'16	min. Earth dist.	51 Mar 25 j 07:58	13° $\mathring{M}$ 27'47	0°17'23
min. Earth dist.	43 Mar 30 j 16:24	6° $\mathring{L}$ 54'12	17.51328 AU	direct	51 May 07 j 23:10	13° $\mathring{M}$ 28'11	17.96107 AU
direct	43 Jun 15 j 09:07	4° $\mathring{L}$ 50'20			51 Jul 23 j 08:17	11° $\mathring{M}$ 25'46	
				conjunction	51 Oct 29 j 08:56	15° $\mathring{M}$	
conjunction	43 Oct 04 j 19:08	9° $\mathring{L}$ 17'09	0°36'02				
minimum elong	43 Oct 04 j 19:08	9° $\mathring{L}$ 17'09	0°36'02				

conjunction	51 Nov 09 j 17:47	15°M41'45	0°14'03	behind sun end	57 Dec 04 j 22:57	11°Z43'30	
minimum elong	51 Nov 09 j 17:47	15°M41'45	0°14'02	max. Earth dist.	57 Dec 05 j 08:51	11°Z45'00	20.37607 AU
behind sun begin	51 Nov 09 j 14:21	15°M41'14		retrograde	58 Mar 22 j 16:00	15°Z50'11	
behind sun end	51 Nov 09 j 21:13	15°M42'16		opposition	58 Jun 07 j 16:52	13°Z50'34	0°-8'-7
max. Earth dist.	51 Nov 09 j 22:09	15°M42'25	19.99236 AU	min. Earth dist.	58 Jun 07 j 00:51	13°Z52'11	18.40838 AU
retrograde	52 Feb 25 j 01:26	19°M54'10		direct	58 Aug 23 j 16:33	11°Z50'58	
opposition	52 May 11 j 00:27	17°M54'08	0°13'46				
min. Earth dist.	52 May 10 j 19:55	17°M54'36	18.02343 AU	conjunction	58 Dec 09 j 01:57	15°Z56'26	0°-8'-57
direct	52 Jul 27 j 04:31	15°M52'27		minimum elong	58 Dec 09 j 01:56	15°Z56'26	0°08'59
				behind sun begin	58 Dec 08 j 20:19	15°Z55'37	
conjunction	52 Nov 13 j 07:36	20°M06'52	0°10'47	behind sun end	58 Dec 09 j 07:34	15°Z57'15	
minimum elong	52 Nov 13 j 07:35	20°M06'52	0°10'48	max. Earth dist.	58 Dec 09 j 18:42	15°Z58'56	20.44065 AU
behind sun begin	52 Nov 13 j 02:32	20°M06'07		retrograde	59 Mar 27 j 05:48	20°Z03'22	
behind sun end	52 Nov 13 j 12:39	20°M07'37		opposition	59 Jun 12 j 08:59	18°Z03'51	0°-11'-38
max. Earth dist.	52 Nov 13 j 13:13	20°M07'43	20.05499 AU	min. Earth dist.	59 Jun 11 j 14:53	18°Z05'41	18.47252 AU
retrograde	53 Feb 28 j 18:26	24°M18'26		direct	59 Aug 28 j 06:52	16°Z04'38	
opposition	53 May 15 j 21:03	22°M18'27	0°10'07				
min. Earth dist.	53 May 15 j 13:38	22°M19'13	18.08624 AU	conjunction	59 Dec 13 j 10:48	20°Z08'47	0°-12'-5
direct	53 Aug 01 j 01:13	20°M17'05		minimum elong	59 Dec 13 j 10:48	20°Z08'47	0°12'06
				behind sun begin	59 Dec 13 j 06:16	20°Z08'08	
conjunction	53 Nov 17 j 20:41	24°M29'55	0°07'30	behind sun end	59 Dec 13 j 15:19	20°Z09'26	
minimum elong	53 Nov 17 j 20:41	24°M29'56	0°07'30	max. Earth dist.	59 Dec 14 j 06:07	20°Z11'40	20.50406 AU
behind sun begin	53 Nov 17 j 14:42	24°M29'02		retrograde	60 Mar 30 j 16:45	24°Z15'04	
behind sun end	53 Nov 18 j 02:41	24°M30'49		min. Earth dist.	60 Jun 15 j 05:44	22°Z17'36	18.53513 AU
max. Earth dist.	53 Nov 18 j 05:04	24°M31'11	20.11799 AU	opposition	60 Jun 16 j 00:40	22°Z15'42	0°-15'-4
retrograde	54 Mar 05 j 08:55	28°M40'38		direct	60 Aug 31 j 20:39	20°Z16'52	
opposition	54 May 20 j 16:53	26°M40'41	0°06'26				
min. Earth dist.	54 May 20 j 08:33	26°M41'32	18.14960 AU	conjunction	60 Dec 16 j 18:54	24°Z19'43	0°-15'-8
direct	54 Aug 05 j 20:30	24°M39'38		minimum elong	60 Dec 16 j 18:54	24°Z19'43	0°15'10
				behind sun begin	60 Dec 16 j 16:27	24°Z19'22	
conjunction	54 Nov 22 j 08:48	28°M50'56	0°04'12	behind sun end	60 Dec 16 j 21:22	24°Z20'04	
minimum elong	54 Nov 22 j 08:48	28°M50'55	0°04'12	max. Earth dist.	60 Dec 17 j 14:32	24°Z22'38	20.56570 AU
behind sun begin	54 Nov 22 j 02:21	28°M49'58		retrograde	61 Apr 04 j 05:51	28°Z25'24	
behind sun end	54 Nov 22 j 15:14	28°M51'53		opposition	61 Jun 20 j 15:38	26°Z26'09	0°-18'-24
max. Earth dist.	54 Nov 22 j 18:18	28°M52'21	20.18172 AU	min. Earth dist.	61 Jun 19 j 19:11	26°Z28'12	18.59569 AU
retrograde	54 Dec 11 j 12:49	0°Z		direct	61 Sep 05 j 09:13	24°Z27'40	
opposition	55 Mar 10 j 00:31	3°Z00'49					
min. Earth dist.	55 May 25 j 11:54	1°Z00'54	0°02'45	conjunction	61 Dec 21 j 02:51	28°Z29'19	0°-18'-6
	55 May 25 j 00:39	1°Z02'03	18.21369 AU	minimum elong	61 Dec 21 j 02:51	28°Z29'19	0°18'07
	55 Jun 20 j 12:55	30°RM		max. Earth dist.	61 Dec 22 j 00:37	28°Z32'33	20.62479 AU
direct	55 Aug 10 j 15:05	29°M00'11			62 Jan 16 j 05:25	0°Z	
	55 Sep 28 j 11:29	0°Z		retrograde	62 Apr 08 j 16:06	2°Z34'25	
conjunction	55 Nov 26 j 20:09	3°Z09'57	0°00'51	min. Earth dist.	62 Jun 24 j 08:49	0°Z37'23	18.65327 AU
minimum elong	55 Nov 26 j 20:09	3°Z09'57	0°00'51	opposition	62 Jun 25 j 05:48	0°Z35'17	0°-21'-38
behind sun begin	55 Nov 26 j 13:38	3°Z08'59			62 Jul 10 j 02:33	30°RM	
behind sun end	55 Nov 27 j 02:41	3°Z10'55		direct	62 Sep 09 j 21:40	28°Z37'08	
max. Earth dist.	55 Nov 27 j 08:33	3°Z11'49	20.24604 AU		62 Nov 06 j 23:59	0°Z	
desc. node	56 Feb 26 j 21:29	7°Z12'41		conjunction	62 Dec 25 j 10:14	2°Z37'38	0°-20'-58
retrograde	56 Mar 13 j 13:31	7°Z19'02		minimum elong	62 Dec 25 j 10:14	2°Z37'38	0°20'59
opposition	56 May 29 j 06:20	5°Z19'12	0°00'-54	max. Earth dist.	62 Dec 26 j 07:46	2°Z40'48	20.68069 AU
min. Earth dist.	56 May 28 j 17:57	5°Z20'28	18.27835 AU	retrograde	63 Apr 13 j 03:55	6°Z42'12	
direct	56 Aug 14 j 08:44	3°Z18'51		opposition	63 Jun 29 j 19:29	4°Z43'08	0°-24'-44
				min. Earth dist.	63 Jun 28 j 21:31	4°Z45'20	18.70746 AU
conjunction	56 Nov 30 j 06:44	7°Z27'08	0°-2'-31	direct	63 Sep 14 j 08:30	2°Z45'17	
minimum elong	56 Nov 30 j 06:43	7°Z27'08	0°02'32				
behind sun begin	56 Nov 30 j 00:12	7°Z26'10		conjunction	63 Dec 29 j 17:14	6°Z44'41	0°-23'-42
behind sun end	56 Nov 30 j 13:15	7°Z28'05		minimum elong	63 Dec 29 j 17:14	6°Z44'41	0°23'43
max. Earth dist.	56 Nov 30 j 20:05	7°Z29'08	20.31101 AU	max. Earth dist.	63 Dec 30 j 16:37	6°Z48'07	20.73282 AU
retrograde	57 Mar 18 j 04:05	11°Z35'28		retrograde	64 Apr 16 j 13:44	10°Z48'45	
opposition	57 Jun 02 j 23:55	9°Z35'43	0°-4'-32	min. Earth dist.	64 Jul 02 j 10:06	8°Z51'58	18.75756 AU
min. Earth dist.	57 Jun 02 j 08:52	9°Z37'15	18.34350 AU	opposition	64 Jul 03 j 08:35	8°Z49'43	0°-27'-41
direct	57 Aug 19 j 01:06	7°Z35'44		direct	64 Sep 17 j 20:08	6°Z52'08	
conjunction	57 Dec 04 j 16:41	11°Z42'35	0°-5'-46	conjunction	65 Jan 01 j 23:48	10°Z50'28	0°-26'-18
minimum elong	57 Dec 04 j 16:41	11°Z42'35	0°05'47	minimum elong	65 Jan 01 j 23:47	10°Z50'28	0°26'18
behind sun begin	57 Dec 04 j 10:25	11°Z41'40		max. Earth dist.	65 Jan 02 j 22:43	10°Z53'50	20.78090 AU

retrograde	65 Apr 21 j 00:12	14°☾54'04			73 Mar 11 j 04:14	15°☾	
opposition	65 Jul 07 j 20:57	12°☾55'03	0°-30'-28	retrograde	73 May 23 j 23:17	17°☾01'38	
min. Earth dist.	65 Jul 06 j 21:53	12°☾57'21	18.80368 AU	min. Earth dist.	73 Aug 09 j 02:01	15°☾05'02	19.04673 AU
direct	65 Sep 22 j 05:22	10°☾57'39		opposition	73 Aug 10 j 03:09	15°☾02'31	0°-46'-2
					73 Aug 11 j 04:21	15°☾	
conjunction	66 Jan 06 j 06:06	14°☾55'01	0°-28'-45	direct	73 Oct 24 j 16:02	13°☾06'18	
minimum elong	66 Jan 06 j 06:05	14°☾55'01	0°28'47		74 Jan 01 j 21:06	15°☾	
max. Earth dist.	66 Jan 07 j 06:42	14°☾58'36	20.82489 AU				
retrograde	66 Apr 25 j 09:19	18°☾58'09		conjunction	74 Feb 07 j 00:06	16°☾58'48	0°-42'-9
min. Earth dist.	66 Jul 11 j 09:02	17°☾01'28	18.84566 AU	minimum elong	74 Feb 07 j 00:06	16°☾58'48	0°42'09
opposition	66 Jul 12 j 08:37	16°☾59'07	0°-33'-6	max. Earth dist.	74 Feb 08 j 03:26	17°☾02'43	21.05380 AU
direct	66 Sep 26 j 15:39	15°☾01'54		retrograde	74 May 28 j 08:34	21°☾00'21	
				min. Earth dist.	74 Aug 13 j 09:54	19°☾03'47	19.06066 AU
conjunction	67 Jan 10 j 11:47	18°☾58'20	0°-31'-3	opposition	74 Aug 14 j 11:03	19°☾01'16	0°-47'-3
minimum elong	67 Jan 10 j 11:47	18°☾58'20	0°31'04	direct	74 Oct 28 j 22:35	17°☾05'08	
max. Earth dist.	67 Jan 11 j 11:54	19°☾01'51	20.86501 AU				
retrograde	67 Apr 29 j 18:48	23°☾01'05		conjunction	75 Feb 11 j 05:20	20°☾57'26	0°-42'-58
opposition	67 Jul 16 j 19:41	21°☾02'00	0°-35'-32	minimum elong	75 Feb 11 j 05:20	20°☾57'26	0°42'59
min. Earth dist.	67 Jul 15 j 19:40	21°☾04'24	18.88411 AU	max. Earth dist.	75 Feb 12 j 07:10	21°☾01'08	21.06538 AU
direct	67 Sep 30 j 23:48	19°☾04'56		retrograde	75 Jun 01 j 16:42	24°☾59'04	
				opposition	75 Aug 18 j 18:53	22°☾59'57	0°-47'-50
conjunction	68 Jan 14 j 17:24	23°☾00'32	0°-33'-10	min. Earth dist.	75 Aug 17 j 18:52	23°☾02'22	19.06982 AU
minimum elong	68 Jan 14 j 17:24	23°☾00'32	0°33'12	direct	75 Nov 02 j 03:00	21°☾03'53	
max. Earth dist.	68 Jan 15 j 19:16	23°☾04'18	20.90171 AU				
retrograde	68 May 03 j 03:20	27°☾02'55		conjunction	76 Feb 15 j 11:07	24°☾56'05	0°-43'-34
min. Earth dist.	68 Jul 19 j 05:25	25°☾06'18	18.91923 AU	minimum elong	76 Feb 15 j 11:07	24°☾56'05	0°43'35
opposition	68 Jul 20 j 06:09	25°☾03'50	0°-37'-47	max. Earth dist.	76 Feb 16 j 13:23	24°☾59'50	21.07189 AU
direct	68 Oct 04 j 08:11	23°☾06'55		retrograde	76 Jun 05 j 01:51	28°☾57'47	
				min. Earth dist.	76 Aug 21 j 02:37	27°☾01'02	19.07357 AU
conjunction	69 Jan 17 j 22:33	27°☾01'45	0°-35'-8	opposition	76 Aug 22 j 02:20	26°☾58'39	0°-48'-23
minimum elong	69 Jan 17 j 22:33	27°☾01'45	0°35'09	direct	76 Nov 05 j 09:41	25°☾02'37	
max. Earth dist.	69 Jan 18 j 23:55	27°☾05'25	20.93530 AU				
	69 Mar 16 j 13:20	0°☾		conjunction	77 Feb 18 j 16:59	28°☾54'45	0°-43'-58
retrograde	69 May 07 j 12:35	1°☾03'52		minimum elong	77 Feb 18 j 16:59	28°☾54'45	0°43'59
	69 Jun 30 j 16:47	30°☾☾		max. Earth dist.	77 Feb 19 j 17:13	28°☾58'13	21.07286 AU
opposition	69 Jul 24 j 16:06	29°☾04'44	0°-39'-51		77 Mar 09 j 23:04	0°☾	
min. Earth dist.	69 Jul 23 j 15:09	29°☾07'13	18.95139 AU	retrograde	77 Jun 09 j 10:10	2°☾56'37	
direct	69 Oct 08 j 15:24	27°☾07'57		min. Earth dist.	77 Aug 25 j 11:37	0°☾59'37	19.07167 AU
	70 Jan 04 j 01:11	0°☾		opposition	77 Aug 26 j 09:45	0°☾57'24	0°-48'-42
					77 Sep 20 j 06:27	30°☾☾	
conjunction	70 Jan 22 j 03:49	1°☾02'09	0°-36'-54	direct	77 Nov 09 j 13:59	29°☾01'18	
minimum elong	70 Jan 22 j 03:49	1°☾02'09	0°36'55		77 Dec 28 j 03:09	0°☾	
max. Earth dist.	70 Jan 23 j 06:42	1°☾06'02	20.96581 AU				
retrograde	70 May 11 j 21:00	5°☾04'01		conjunction	78 Feb 22 j 23:20	2°☾53'30	0°-44'-10
min. Earth dist.	70 Jul 27 j 23:47	3°☾07'26	18.98032 AU	minimum elong	78 Feb 22 j 23:20	2°☾53'30	0°44'11
opposition	70 Jul 29 j 01:18	3°☾04'53	0°-41'-42	max. Earth dist.	78 Feb 23 j 23:35	2°☾56'57	21.06804 AU
direct	70 Oct 12 j 22:17	1°☾08'15		retrograde	78 Jun 13 j 18:38	6°☾55'30	
				opposition	78 Aug 30 j 16:43	4°☾56'11	0°-48'-48
conjunction	71 Jan 26 j 08:46	5°☾01'53	0°-38'-30	min. Earth dist.	78 Aug 29 j 18:59	4°☾58'22	19.06393 AU
minimum elong	71 Jan 26 j 08:46	5°☾01'53	0°38'31	direct	78 Nov 13 j 20:37	3°☾00'01	
max. Earth dist.	71 Jan 27 j 10:54	5°☾05'39	20.99318 AU				
retrograde	71 May 16 j 05:52	9°☾03'36		conjunction	79 Feb 27 j 05:40	6°☾52'18	0°-44'-8
min. Earth dist.	71 Aug 01 j 08:56	7°☾07'01	19.00613 AU	minimum elong	79 Feb 27 j 05:40	6°☾52'18	0°44'08
opposition	71 Aug 02 j 10:21	7°☾04'28	0°-43'-21	max. Earth dist.	79 Feb 28 j 03:45	6°☾55'27	21.05768 AU
direct	71 Oct 17 j 04:26	5°☾07'59		retrograde	79 Jun 18 j 03:11	10°☾54'31	
				opposition	79 Sep 03 j 23:44	8°☾55'03	0°-48'-39
conjunction	72 Jan 30 j 13:45	9°☾01'09	0°-39'-54	min. Earth dist.	79 Sep 03 j 03:42	8°☾57'05	19.05098 AU
minimum elong	72 Jan 30 j 13:45	9°☾01'09	0°39'55	direct	79 Nov 18 j 00:52	6°☾58'45	
max. Earth dist.	72 Jan 31 j 17:15	9°☾05'06	21.01722 AU				
retrograde	72 May 19 j 14:47	13°☾02'45		conjunction	80 Mar 02 j 12:23	10°☾51'14	0°-43'-53
opposition	72 Aug 05 j 18:56	11°☾03'38	0°-44'-48	minimum elong	80 Mar 02 j 12:23	10°☾51'14	0°43'55
min. Earth dist.	72 Aug 04 j 17:06	11°☾06'13	19.02831 AU	max. Earth dist.	80 Mar 03 j 10:35	10°☾54'24	21.04228 AU
direct	72 Oct 20 j 11:02	9°☾07'17		retrograde	80 Jun 21 j 11:31	14°☾53'42	
				min. Earth dist.	80 Sep 06 j 10:46	12°☾56'05	19.03316 AU
conjunction	73 Feb 02 j 18:46	13°☾00'04	0°-41'-7	opposition	80 Sep 07 j 06:28	12°☾54'05	0°-48'-15
minimum elong	73 Feb 02 j 18:46	13°☾00'04	0°41'09	direct	80 Nov 21 j 07:03	10°☾57'38	
max. Earth dist.	73 Feb 03 j 21:13	13°☾03'52	21.03756 AU				



conjunction	81 Mar 06 j 19:23	14° <del>✕</del> 50'24	0°-43'-26	conjunction	89 Apr 08 j 22:47	17° <del>∇</del> 11'02	0°-32'-24
minimum elong	81 Mar 06 j 19:23	14° <del>✕</del> 50'24	0°43'26	minimum elong	89 Apr 08 j 22:47	17° <del>∇</del> 11'02	0°32'25
max. Earth dist.	81 Mar 07 j 15:26	14° <del>✕</del> 53'15	21.02232 AU	max. Earth dist.	89 Apr 09 j 07:30	17° <del>∇</del> 12'17	20.73684 AU
retrograde	81 Jun 25 j 20:13	18° <del>✕</del> 53'10		retrograde	89 Jul 29 j 04:41	21° <del>∇</del> 18'15	
opposition	81 Sep 11 j 13:04	16° <del>✕</del> 53'24	0°-47'-38	opposition	89 Oct 13 j 21:53	19° <del>∇</del> 17'42	0°-34'-36
min. Earth dist.	81 Sep 10 j 19:10	16° <del>✕</del> 55'13	19.01116 AU	min. Earth dist.	89 Oct 13 j 15:08	19° <del>∇</del> 18'24	18.71161 AU
direct	81 Nov 25 j 11:25	14° <del>✕</del> 56'47		direct	89 Dec 27 j 11:25	17° <del>∇</del> 19'32	
conjunction	82 Mar 11 j 02:55	18° <del>✕</del> 49'56	0°-42'-45	conjunction	90 Apr 13 j 11:35	21° <del>∇</del> 19'08	0°-30'-9
minimum elong	82 Mar 11 j 02:55	18° <del>✕</del> 49'56	0°42'47	minimum elong	90 Apr 13 j 11:35	21° <del>∇</del> 19'08	0°30'10
max. Earth dist.	82 Mar 11 j 23:00	18° <del>✕</del> 52'48	20.99837 AU	max. Earth dist.	90 Apr 13 j 19:04	21° <del>∇</del> 20'13	20.68535 AU
retrograde	82 Jun 30 j 05:08	22° <del>✕</del> 53'03		retrograde	90 Aug 02 j 17:59	25° <del>∇</del> 27'03	
opposition	82 Sep 15 j 19:37	20° <del>✕</del> 53'09	0°-46'-47	opposition	90 Oct 18 j 06:15	23° <del>∇</del> 26'24	0°-32'-2
min. Earth dist.	82 Sep 15 j 02:00	20° <del>✕</del> 54'57	18.98527 AU	min. Earth dist.	90 Oct 18 j 00:24	23° <del>∇</del> 27'00	18.65804 AU
direct	82 Nov 29 j 17:12	18° <del>✕</del> 56'22		direct	90 Dec 31 j 20:32	21° <del>∇</del> 27'55	
conjunction	83 Mar 15 j 10:32	22° <del>✕</del> 49'59	0°-41'-53	conjunction	91 Apr 18 j 00:51	25° <del>∇</del> 28'38	0°-27'-44
minimum elong	83 Mar 15 j 10:32	22° <del>✕</del> 49'59	0°41'53	minimum elong	91 Apr 18 j 00:51	25° <del>∇</del> 28'38	0°27'45
max. Earth dist.	83 Mar 16 j 04:29	22° <del>✕</del> 52'33	20.97075 AU	max. Earth dist.	91 Apr 18 j 05:12	25° <del>∇</del> 29'15	20.62988 AU
retrograde	83 Jul 04 j 13:53	26° <del>✕</del> 53'34		retrograde	91 Aug 07 j 05:35	29° <del>∇</del> 37'16	
min. Earth dist.	83 Sep 19 j 10:35	24° <del>✕</del> 55'08	18.95600 AU	opposition	91 Oct 22 j 15:10	27° <del>∇</del> 36'27	0°-29'-16
opposition	83 Sep 20 j 02:23	24° <del>✕</del> 53'31	0°-45'-42	min. Earth dist.	91 Oct 22 j 12:08	27° <del>∇</del> 36'46	18.60073 AU
direct	83 Dec 03 j 21:57	22° <del>✕</del> 56'34		direct	92 Jan 05 j 04:06	25° <del>∇</del> 37'37	
conjunction	84 Mar 18 j 19:01	26° <del>✕</del> 50'46	0°-40'-47	conjunction	92 Apr 21 j 15:11	29° <del>∇</del> 39'30	0°-25'-9
minimum elong	84 Mar 18 j 19:01	26° <del>✕</del> 50'46	0°40'48	minimum elong	92 Apr 21 j 15:11	29° <del>∇</del> 39'30	0°25'11
max. Earth dist.	84 Mar 19 j 12:53	26° <del>✕</del> 53'19	20.93987 AU	max. Earth dist.	92 Apr 21 j 18:12	29° <del>∇</del> 39'56	20.57096 AU
retrograde	84 May 20 j 18:49	0° <del>∇</del>		retrograde	92 Apr 27 j 12:32	0° <del>♁</del>	
retrograde	84 Jul 08 j 00:01	0° <del>∇</del> 54'49		retrograde	92 Aug 10 j 19:51	3° <del>♁</del> 48'51	
opposition	84 Aug 26 j 04:38	30° <del>♁</del>		opposition	92 Oct 26 j 00:09	1° <del>♁</del> 47'51	0°-26'-20
min. Earth dist.	84 Sep 23 j 08:58	28° <del>✕</del> 54'41	0°-44'-23	min. Earth dist.	92 Oct 25 j 22:03	1° <del>♁</del> 48'05	18.54016 AU
direct	84 Sep 22 j 17:34	28° <del>✕</del> 56'15	18.92343 AU	direct	92 Dec 18 j 15:04	30° <del>♁</del>	
retrograde	84 Dec 07 j 04:01	26° <del>✕</del> 57'33		retrograde	93 Jan 08 j 14:28	29° <del>∇</del> 48'37	
opposition	85 Mar 07 j 18:47	0° <del>∇</del>		opposition	93 Jan 29 j 07:42	0° <del>♁</del>	
conjunction	85 Mar 23 j 03:56	0° <del>∇</del> 52'26	0°-39'-30	conjunction	93 Apr 26 j 06:09	3° <del>♁</del> 51'44	0°-22'-26
minimum elong	85 Mar 23 j 03:56	0° <del>∇</del> 52'26	0°39'32	minimum elong	93 Apr 26 j 06:09	3° <del>♁</del> 51'44	0°22'26
max. Earth dist.	85 Mar 23 j 19:24	0° <del>∇</del> 54'39	20.90578 AU	max. Earth dist.	93 Apr 26 j 06:13	3° <del>♁</del> 51'45	20.50903 AU
retrograde	85 Jul 12 j 09:01	4° <del>∇</del> 57'02		retrograde	93 Aug 15 j 08:15	8° <del>♁</del> 01'50	
opposition	85 Sep 27 j 15:56	2° <del>∇</del> 56'48	0°-42'-52	opposition	93 Oct 30 j 09:46	6° <del>♁</del> 00'38	0°-23'-15
min. Earth dist.	85 Sep 27 j 02:38	2° <del>∇</del> 58'10	18.88777 AU	min. Earth dist.	93 Oct 30 j 10:27	6° <del>♁</del> 00'33	18.47707 AU
direct	85 Dec 11 j 08:51	0° <del>∇</del> 59'29		direct	94 Jan 12 j 22:51	4° <del>♁</del> 00'59	
conjunction	86 Mar 27 j 13:34	4° <del>∇</del> 55'09	0°-38'-1	conjunction	94 Apr 30 j 21:48	8° <del>♁</del> 05'22	0°-19'-34
minimum elong	86 Mar 27 j 13:34	4° <del>∇</del> 55'09	0°38'02	minimum elong	94 Apr 30 j 21:48	8° <del>♁</del> 05'22	0°19'35
max. Earth dist.	86 Mar 28 j 04:42	4° <del>∇</del> 57'19	20.86857 AU	max. Earth dist.	94 Apr 30 j 20:36	8° <del>♁</del> 05'12	20.44501 AU
retrograde	86 Jul 16 j 20:13	9° <del>∇</del> 00'20		retrograde	94 Aug 19 j 23:49	12° <del>♁</del> 16'12	
opposition	86 Oct 01 j 22:53	7° <del>∇</del> 00'02	0°-41'-7	opposition	94 Nov 03 j 19:38	10° <del>♁</del> 14'49	0°-20'00
min. Earth dist.	86 Oct 01 j 10:06	7° <del>∇</del> 01'21	18.84888 AU	min. Earth dist.	94 Nov 03 j 21:00	10° <del>♁</del> 14'40	18.41220 AU
direct	86 Dec 15 j 15:53	5° <del>∇</del> 02'33		direct	95 Jan 17 j 10:37	8° <del>♁</del> 14'44	
conjunction	87 Mar 31 j 23:46	8° <del>∇</del> 59'06	0°-36'-20	conjunction	95 May 05 j 14:14	12° <del>♁</del> 20'27	0°-16'-35
minimum elong	87 Mar 31 j 23:46	8° <del>∇</del> 59'06	0°36'22	minimum elong	95 May 05 j 14:14	12° <del>♁</del> 20'27	0°16'35
max. Earth dist.	87 Apr 01 j 12:17	9° <del>∇</del> 00'53	20.82817 AU	max. Earth dist.	95 May 05 j 10:29	12° <del>♁</del> 19'55	20.37952 AU
retrograde	87 Jul 21 j 05:48	13° <del>∇</del> 04'56		retrograde	95 Jun 23 j 13:55	15° <del>♁</del>	
opposition	87 Oct 06 j 06:18	11° <del>∇</del> 04'33	0°-39'-9	opposition	95 Aug 24 j 12:54	16° <del>♁</del> 32'03	
min. Earth dist.	87 Oct 05 j 19:56	11° <del>∇</del> 05'37	18.80683 AU	min. Earth dist.	95 Oct 27 j 12:27	15° <del>♁</del>	
direct	87 Dec 19 j 21:01	9° <del>∇</del> 06'52		direct	95 Nov 08 j 06:05	14° <del>♁</del> 30'29	0°-16'-38
conjunction	88 Apr 04 j 10:54	13° <del>∇</del> 04'22	0°-34'-28	conjunction	95 Nov 08 j 10:06	14° <del>♁</del> 30'03	18.34634 AU
minimum elong	88 Apr 04 j 10:54	13° <del>∇</del> 04'22	0°34'28	minimum elong	96 Jan 21 j 20:03	12° <del>♁</del> 29'58	
max. Earth dist.	88 Apr 04 j 22:40	13° <del>∇</del> 06'03	20.78442 AU	max. Earth dist.	96 Apr 11 j 01:29	15° <del>♁</del>	
retrograde	88 Jul 24 j 18:09	17° <del>∇</del> 10'52		retrograde	96 May 09 j 07:34	16° <del>♁</del> 37'05	0°-13'-30
opposition	88 Oct 09 j 13:53	15° <del>∇</del> 10'25	0°-36'-59	opposition	96 May 09 j 07:33	16° <del>♁</del> 37'04	0°13'30
min. Earth dist.	88 Oct 09 j 04:20	15° <del>∇</del> 11'25	18.76114 AU	min. Earth dist.	96 May 09 j 03:57	16° <del>♁</del> 36'34	
direct	88 Dec 23 j 05:09	13° <del>∇</del> 12'32		direct	96 May 09 j 11:09	16° <del>♁</del> 37'35	
retrograde				retrograde	96 May 09 j 02:25	16° <del>♁</del> 36'20	20.31344 AU

retrograde	96 Aug 28 j 05:46	20°♄49'27	
opposition	96 Nov 11 j 16:58	18°♄47'43	0°-13'-10
min. Earth dist.	96 Nov 11 j 21:34	18°♄47'13	18.28007 AU
direct	97 Jan 25 j 09:02	16°♄46'47	
conjunction	97 May 14 j 01:39	20°♄55'20	0°-10'-19
minimum elong	97 May 14 j 01:39	20°♄55'20	0°10'20
behind sun begin	97 May 13 j 20:21	20°♄54'34	
behind sun end	97 May 14 j 06:56	20°♄56'05	
max. Earth dist.	97 May 13 j 18:15	20°♄54'15	20.24709 AU
retrograde	97 Sep 01 j 20:04	25°♄08'30	
opposition	97 Nov 16 j 04:33	23°♄06'37	0°-9'-36
min. Earth dist.	97 Nov 16 j 11:38	23°♄05'52	18.21394 AU
direct	98 Jan 29 j 20:07	21°♄05'17	
conjunction	98 May 18 j 20:33	25°♄15'19	0°-7'-4
minimum elong	98 May 18 j 20:33	25°♄15'19	0°07'05
behind sun begin	98 May 18 j 14:19	25°♄14'25	
behind sun end	98 May 19 j 02:47	25°♄16'13	
max. Earth dist.	98 May 18 j 11:39	25°♄14'01	20.18131 AU
retrograde	98 Sep 06 j 13:53	29°♄29'18	
opposition	98 Nov 20 j 16:41	27°♄27'19	0°-5'-57
min. Earth dist.	98 Nov 21 j 00:13	27°♄26'31	18.14854 AU
direct	99 Feb 03 j 10:07	25°♄25'38	
conjunction	99 May 23 j 16:13	29°♄37'10	0°-3'-46
minimum elong	99 May 23 j 16:13	29°♄37'10	0°03'47
behind sun begin	99 May 23 j 09:31	29°♄36'12	
behind sun end	99 May 23 j 22:56	29°♄38'09	
max. Earth dist.	99 May 23 j 05:30	29°♄35'36	20.11630 AU
	99 May 30 j 02:05	0°♁	
retrograde	99 Sep 11 j 05:59	3°♁52'00	
opposition	99 Nov 25 j 05:41	1°♁49'57	0°-2'-14
min. Earth dist.	99 Nov 25 j 15:37	1°♁48'53	18.08405 AU
	100 Jan 17 j 13:14	30°♁	
direct	100 Feb 07 j 22:54	29°♄47'54	
	100 Feb 29 j 08:08	0°♁	
conjunction	100 May 27 j 12:56	4°♁01'01	0°00'-21
minimum elong	100 May 27 j 12:56	4°♁01'01	0°00'21
behind sun begin	100 May 27 j 06:11	4°♁00'02	
behind sun end	100 May 27 j 19:41	4°♁01'59	
max. Earth dist.	100 May 27 j 00:21	3°♁59'09	20.05240 AU
asc. node	100 Jul 04 j 06:41	6°♁10'13	
retrograde	100 Sep 15 j 00:59	8°♁16'40	
opposition	100 Nov 28 j 19:06	6°♁14'35	0°01'30
min. Earth dist.	100 Nov 29 j 05:44	6°♁13'26	18.02063 AU