

In this newsletter:

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### Shows

Shows will resume when permitted by the University Occupational Health and Safety.

### Moon Phases

New Moon: 6 Oct  
 First Quarter: 13 Oct  
 Full Moon: 20 Oct  
 Last Quarter: 28 Oct

### Sunrise/set and Moonrise/set for Johannesburg – October 2021

Date	Day	Sunrise		Sunset		Moonrise		Moonset	
		h	m	h	m	h	m	h	m
1	Fri	05:47	18:08	02:32	13:13				
2	Sat	05:46	18:08	03:16	14:12				
3	Sun	05:45	18:09	03:58	15:12				
4	Mon	05:44	18:09	04:36	16:13				
5	Tue	05:43	18:10	05:13	17:15				
6	Wed	05:42	18:10	05:49	18:18				
7	Thu	05:41	18:11	06:25	19:22				
8	Fri	05:40	18:11	07:04	20:29				
9	Sat	05:39	18:12	07:47	21:37				
10	Sun	05:38	18:12	08:35	22:46				
11	Mon	05:37	18:13	09:29	23:52				
12	Tue	05:36	18:13	10:28	--:--				
13	Wed	05:35	18:14	11:31	00:53				
14	Thu	05:34	18:14	12:34	01:47				
15	Fri	05:33	18:15	13:36	02:34				
16	Sat	05:32	18:15	14:36	03:15				
17	Sun	05:31	18:16	15:33	03:52				
18	Mon	05:30	18:16	16:29	04:25				

Date	Day	Sunrise	Sunset	Moonrise	Moonset
		h m	h m	h m	h m
19	Tue	05:29	18:17	17:22	04:56
20	Wed	05:28	18:17	18:16	05:27
21	Thu	05:27	18:18	19:09	05:58
22	Fri	05:26	18:19	20:03	06:30
23	Sat	05:26	18:19	20:57	07:06
24	Sun	05:25	18:20	21:52	07:44
25	Mon	05:24	18:20	22:45	08:27
26	Tue	05:23	18:21	23:37	09:14
27	Wed	05:22	18:22	--:--	10:06
28	Thu	05:21	18:22	00:25	11:00
29	Fri	05:21	18:23	01:10	11:58
30	Sat	05:20	18:23	01:52	12:56

Data calculated using MICA, US Naval Observatory

### Astronomical Events – October 2021

Date	Day	Time	Event
1	Fri		Venus: 44.9° E
		15:08	Moon close to Beehive: 3.3° S
6	Wed	13:05	New Moon
8	Fri	05:50	Mars Conjunction
		19:28	Moon Perigee: 363,400 km
9	Sat	18:12	Mercury Inferior Conj.
		20:36	Moon close to Venus: 2.9° S
		21:35	Moon Descending Node
12	Tue	11:09	Moon South Dec.: 26.2° S
13	Wed	05:25	First Quarter
14	Thu	09:12	Moon close to Saturn: 4.1° N
15	Fri	11:58	Moon close to Jupiter: 4.3° N
16	Sat	15:24	Venus close to Antares: 1.5° N
20	Wed	16:57	Full Moon
21	Thu	13:30	Orionid Shower: ZHR = 20
23	Sat	13:47	Moon Ascending Node
24	Sun	17:30	Moon Apogee: 405,600 km
25	Mon	06:59	Mercury Elongation: 18.4° W
26	Tue	18:04	Moon North Dec.: 26.3° N
27	Wed	22:40	Moon close to Pollux: 2.8° N
28	Thu	22:05	Last Quarter
		23:32	Moon close to Beehive: 3.6° S
29	Fri	23:59	Venus Elongation: 47° E

Sky Events Calendar by Fred Espenak and Sumit Dutta (NASA's GSFC)

## Naked Eye Planets Rise and Set Times

Date	Mercury			Venus			Mars		
	Rise	Transit	Set	Rise	Transit	Set	Rise	Transit	Set
	h m	h m	h m	h m	h m	h m	h m	h m	h m
01-Oct	06:24	12:51	19:18	08:02	14:48	21:34	05:58	12:07	18:16
06-Oct	05:56	12:17	18:39	08:01	14:51	21:41	05:47	11:59	18:11
11-Oct	05:24	11:39	17:53	08:01	14:54	21:47	05:37	11:52	18:06
16-Oct	04:58	11:07	17:16	08:02	14:57	21:54	05:27	11:44	18:01
21-Oct	04:42	10:50	16:58	08:02	15:01	21:59	05:17	11:37	17:56
26-Oct	04:36	10:46	16:57	08:04	15:04	22:04	05:08	11:30	17:52

Date	Jupiter			Saturn		
	Rise	Transit	Set	Rise	Transit	Set
	h m	h m	h m	h m	h m	h m
01-Oct	14:35	21:07	03:43	13:22	20:03	02:49
06-Oct	14:14	20:46	03:23	13:02	19:43	02:29
11-Oct	13:54	20:26	03:02	12:42	19:24	02:09
16-Oct	13:34	20:06	02:42	12:23	19:04	01:49
21-Oct	13:15	19:47	02:23	12:04	18:45	01:30
26-Oct	12:55	19:27	02:03	11:44	18:26	01:11

Data calculated using MICA, US Naval Observatory

Transit = "passage of a celestial body across an observer's meridian above the celestial pole"

PLANETARIUM

Movement of Venus through Scorpius  
During October 7:30 p.m.

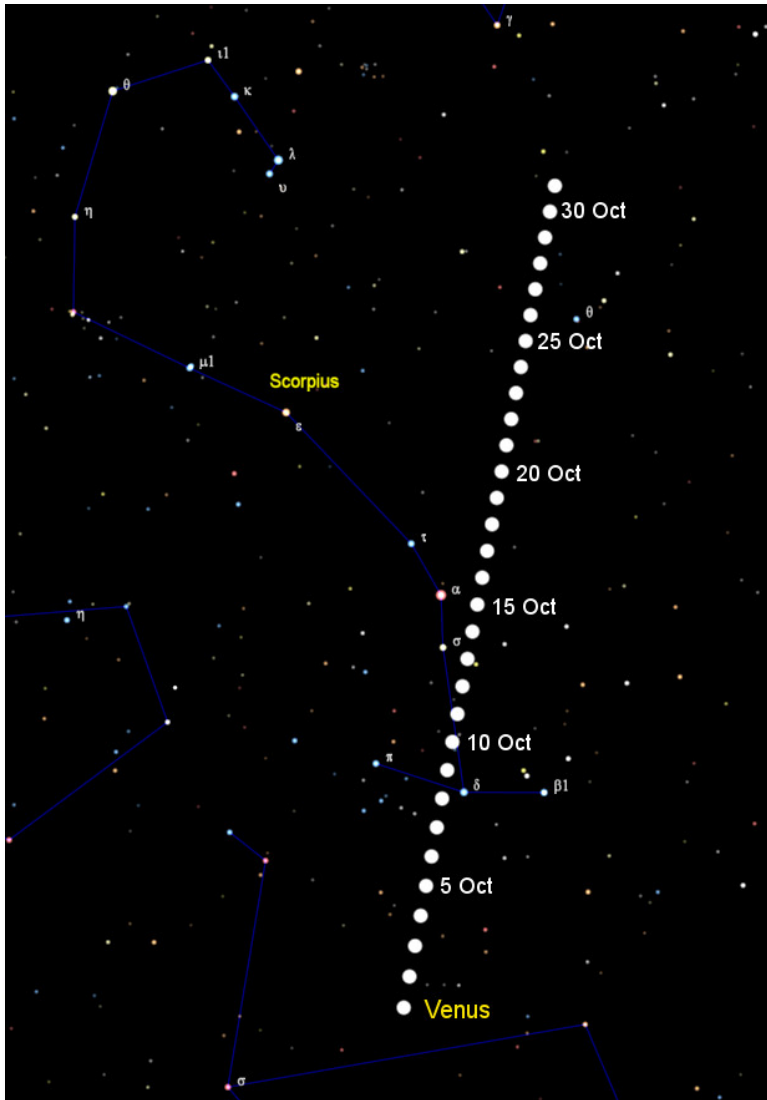


Image: Cartes du Ciel

Enjoy

Clear skies  
Constant