Wits Planetarium
September 2021

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In this newsletter:

Shows

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

Moon Phases

New Moon:	7 Sep
First Quarter:	13 Sep
Full Moon:	21 Sep
Last Quarter:	29 Sep

Sunrise/set and Moonrise/set for Johannesburg – September 2021

Date	Day	Sunrise	Sunset	Moonrise	Moonset
		h m	h m	h m	h m
1	Wed	06:20	17:56	02:09	12:41
2	Thu	06:19	17:56	03:02	13:33
3	Fri	06:18	17:56	03:52	14:29
4	Sat	06:17	17:57	04:40	15:28
5	Sun	06:16	17:57	05:23	16:28
6	Mon	06:15	17:58	06:04	17:29
7	Tue	06:14	17:58	06:41	18:30
8	Wed	06:13	17:58	07:17	19:31
9	Thu	06:12	17:59	07:53	20:33
10	Fri	06:11	17:59	08:30	21:37
11	Sat	06:10	18:00	09:09	22:42
12	Sun	06:09	18:00	09:52	23:48
13	Mon	06:07	18:00	10:41	--:--
14	Tue	06:06	18:01	11:35	00:54
15	Wed	06:05	18:01	12:35	01:58
16	Thu	06:04	18:02	13:37	02:57
17	Fri	06:03	18:02	14:41	03:49
18	Sat	06:02	18:02	15:43	04:34
19	Sun	06:01	18:03	16:43	05:15
20	Mon	06:00	18:03	17:41	05:50
21	Tue	05:59	18:04	18:36	06:23
22	Wed	05:57	18:04	19:30	06:55
23	Thu	05:56	18:04	20:24	07:26
24	Fri	05:55	18:05	21:17	07:58
25	Sat	05:54	18:05	22:11	08:31
26	Sun	05:53	18:06	23:05	09:08
27	Mon	05:52	18:06	23:59	09:48
28	Tue	05:51	18:07	--:--	10:33
29	Wed	05:50	18:07	00:53	11:22
30	Thu	05:49	18:07	01:44	12:16

Data calculated using MICA, US Naval Observatory

Astronomical Events – September 2021

Date	Day	Time	Event
1	Wed		Venus: 39.9° E
2	Thu	02:23	Moon North Dec.: 25.9° N
4	Sat	06:07	Moon close to Beehive: 3.1° S
5	Sun	16:32	Venus close to Spica: 1.6° N
7	Tue	02:52	New Moon
10	Fri	04:09	Moon close to Venus: 4.1° S
11	Sat	12:06	Moon Perigee: 368,500 km
12	Sun	18:35	Moon Descending Node
13	Mon	22:39	First Quarter

Date	Day	Time	Event
14	Tue	05:59	Mercury Elongation: 26.8° E
		10:10	Neptune Opposition
15	Wed	05:48	Moon South Dec.: 26° S
17	Fri	04:37	Moon close to Saturn: 3.9° N
18	Sat	08:50	Moon close to Jupiter: 4.1° N
21	Tue	01:55	Full Moon
		04:03	Mercury close to Spica: 1.4° S
22	Wed	21:21	Spring Equinox (Southern Hemisphere)
26	Sun	09:33	Moon Ascending Node
		23:44	Moon Apogee: 404,600 km
29	Wed	03:57	Last Quarter
		10:26	Moon North Dec.: 26.1° N

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-Sep	07:28	13:35	19:42	08:17	14:35	20:53	07:00	12:54	18:48
06-Sep	07:25	13:38	19:51	08:14	14:36	21:00	06:50	12:46	18:42
11-Sep	07:20	13:39	19:58	08:11	14:38	21:06	06:39	12:38	18:37
16-Sep	07:13	13:36	20:00	08:08	14:40	21:13	06:29	12:30	18:32
21-Sep	07:02	13:29	19:56	08:05	14:42	21:20	06:18	12:22	18:26
26-Sep	06:46	13:15	19:43	08:04	14:45	21:27	06:08	12:14	18:21

Date	Jupiter			Saturn		
	Rise	Transit	Set	Rise	Transit	Set
	h m	h m	h m	h m	h m	h m
01-Sep	16:46	23:16	05:50	15:25	22:06	04:51
06-Sep	16:24	22:54	05:29	15:04	21:45	04:30
11-Sep	16:01	22:32	05:07	14:44	21:25	04:10
16-Sep	15:39	22:10	04:46	14:23	21:04	03:49
21-Sep	15:18	21:49	04:25	14:03	20:44	03:29
26-Sep	14:56	21:28	04:04	13:42	20:23	03:09

Data calculated using MICA, US Naval Observatory
Transit = "passage of a celestial body across an observer's meridian above the celestial pole"

Moon with Saturn and Jupiter
From 16 – 18 September at 7 p.m.

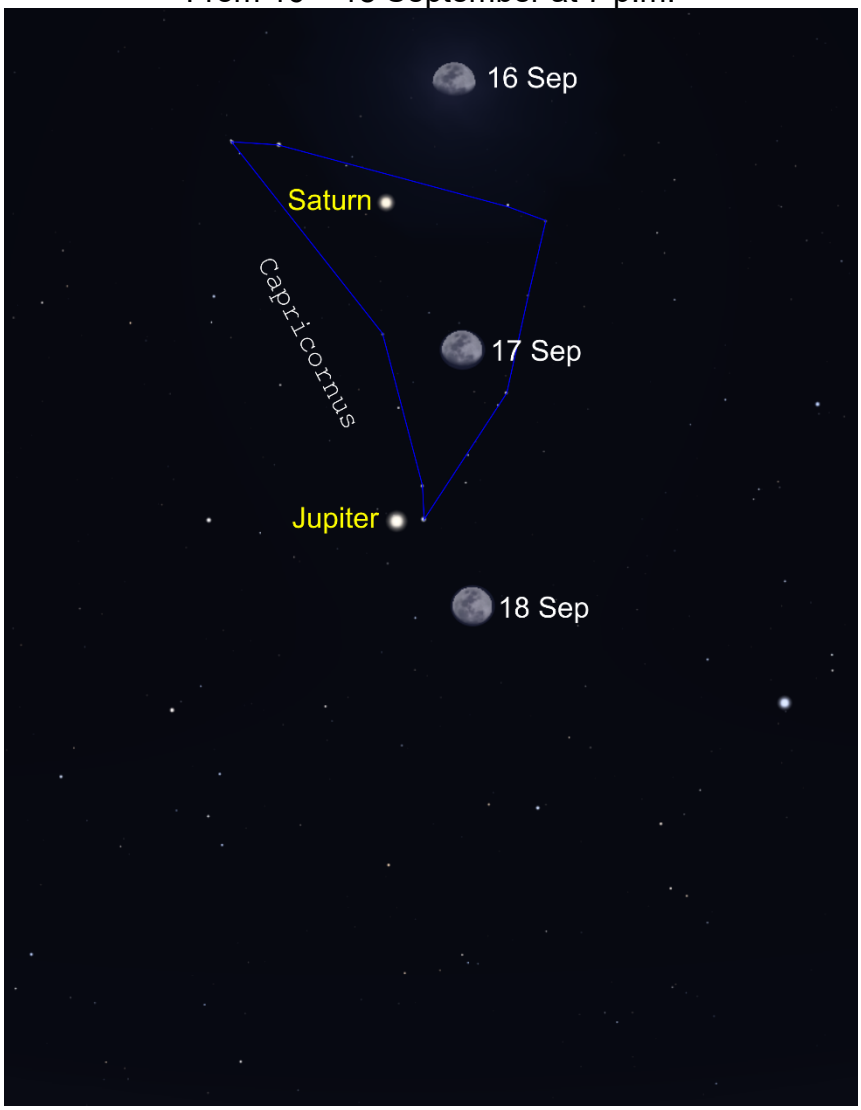
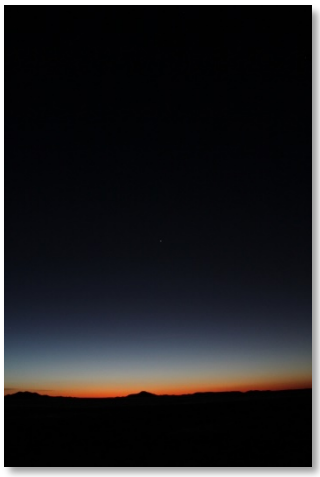


Image: Stellarium

Through my Binoculars

Like a lot of people, I stay in a housing complex, where there is no place for me to set up my telescopes. Apart from having no space, I live in an area where there is a huge amount of light pollution. Not being able to use my telescopes and with Covid around, I really started to get frustrated. A friend and I started to make plans to have a deep-sky weekend. My friend booked accommodation in the Free State for July, but with level 4 we could not go. We immediately rebooked for August as soon as the restrictions was lowered. We travelled the 600km from Johannesburg to our destination and had a wonderful time sitting under dark clear skies. On Saturday evening, I abandoned the telescope (although it was set up and ready for observations) and just sat in my camping chair and reconnected with the night sky through my binoculars – this is the basics of learning the night sky.



I have two binoculars – nothing fancy, a 10 x 25mm and a 12 x 50mm.

So, let's start with our first object.

Object ID:	Collinder 399 (Cr 399), Al Sufi's Cluster, Brocchi's Cluster
Common Name:	The Coat hanger
Type of Object:	Asterism
Constellation:	Vulpecula – The Fox

The Persian astronomer Al-Sufi made mention to this "cluster" in his book – *The Book of the Fixed Stars* (c 964). He described it as "a little cloud [or cloudy patch] situated to the north of the two stars of the notch of Sagitta."
I'm no astrophotographer, in the image below I took a 30 second exposure (normal tripod, that is why the stars have trails) and the coat hanger is clearly visible.

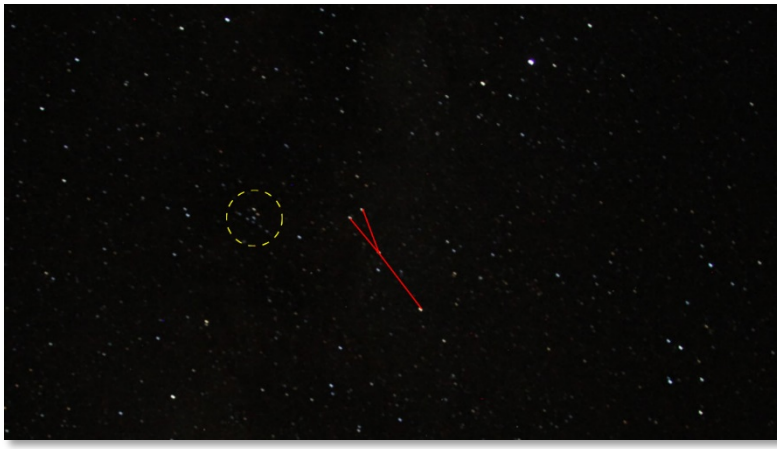


Image: Flavien, Sognolles-en-Montois, IDF, France

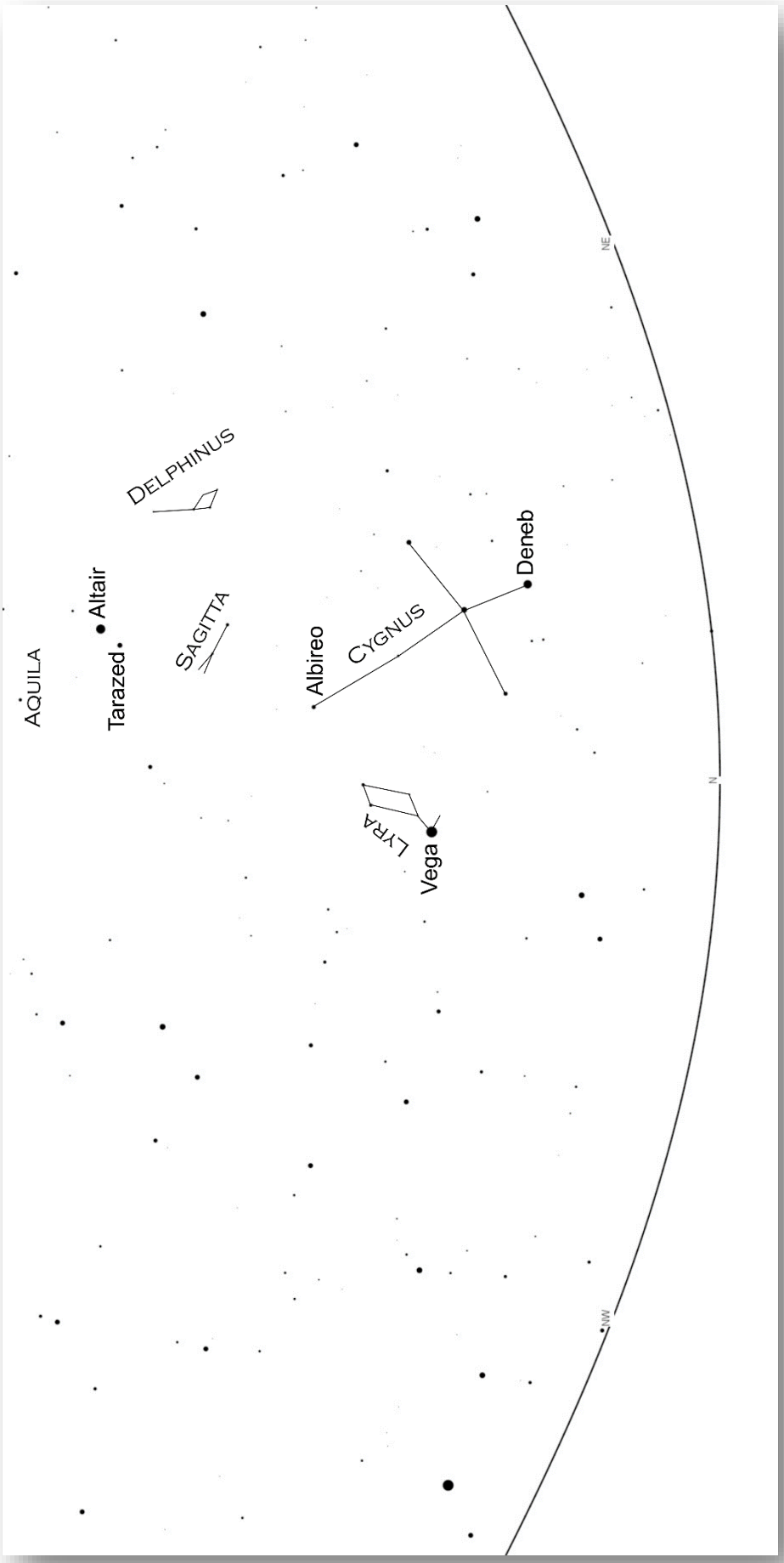
Directions to the "Coat Hanger".

Use Map 1 to familiarise you with the part of the sky that we are going to look at. The map is set-up for 15 September at 7:30 p.m. looking north. Try to locate Vega, Deneb and Altair, these three make out the "summers triangle". Our target is close to the constellation Sagitta – the arrow. The stars of Sagitta are very faint and you might not be able to see it under light pollution conditions.

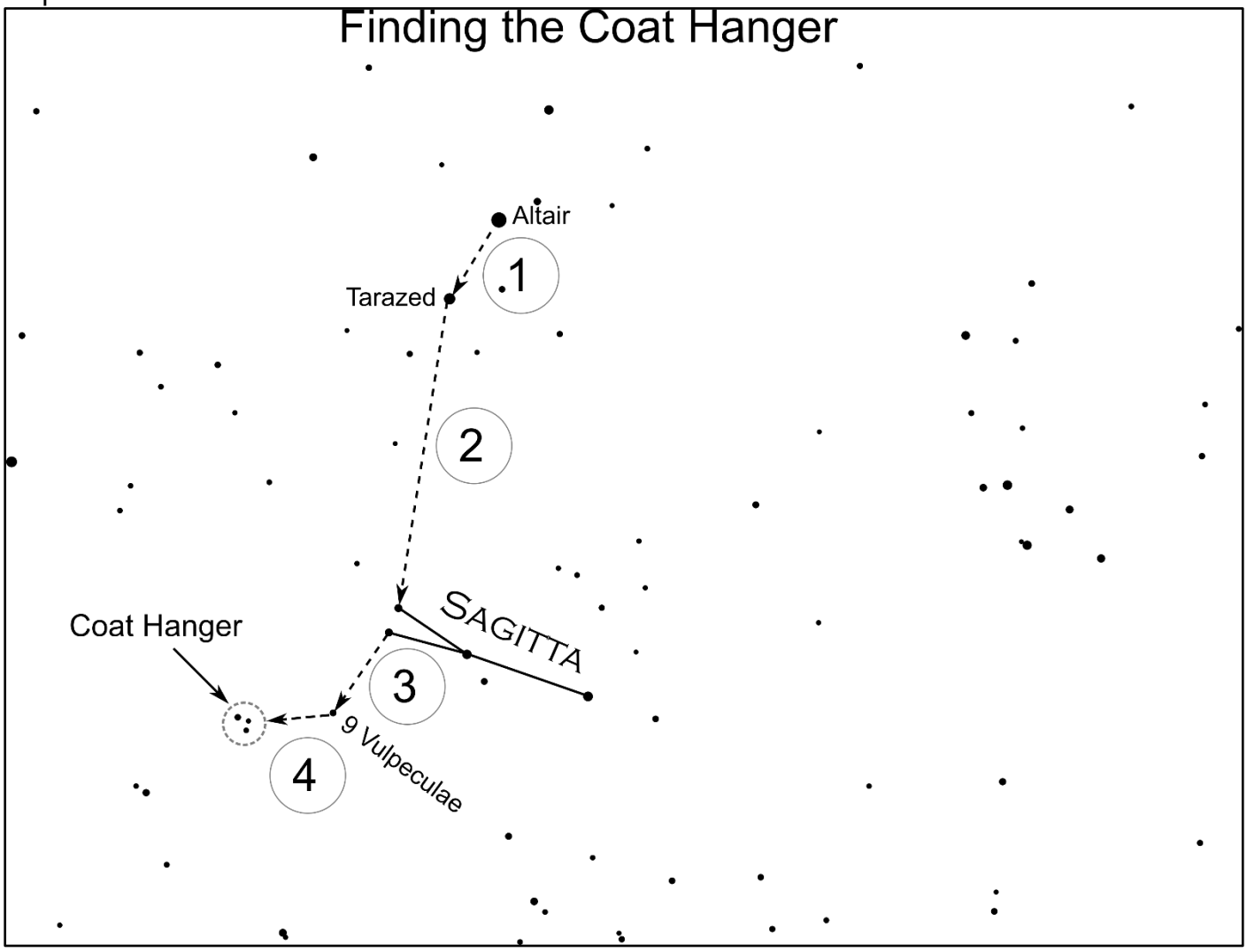
Now that you an idea where to look, let's make use of Map 2 to find "the coat hanger".

1. Centre your binoculars on Altair and move down to Tarazed (if your binoculars have a field of view of 7° than you will see Tarazed when centred on Altair).
2. Move now from Tarazed to Sagitta, you will clearly see the ">" of Sagitta through the binoculars. Centre on the bottom star of the ">".
3. When you have your binoculars centred on the bottom star ("Sham"), you will see our next target star - "9 Vulpeculae", and centre on it. Depending on the field of view of your binoculars you might already see "the coat hanger" on the left.
4. From "9 Vulpeculae" we move to the left and you will see the "coat hanger".

Map 1.


NE
N
NW
DELPHINUS
Altair
Tarazed
AQUILA
SAGITTA
Albireo
CYGNUS
Deneb
LYRA
Vega

Map 2.



Enjoy

Clear skies
Constant