	Ceres Open Movie		Title: Clockwork Skies					
	Written by	Executive Producer	Ott Planetarium					
	Ron Proctor & AmyJo Proctor	Dr. Stacy Palen	weber.edu/planetarium					
Scn	Voicetrack	BGM / FX Track	Visual Notes	Scn	Producer	Δf+120	Start Fr	End Fr
00			OSD: Ceres Open Movie Logo	00	Ron	300	0	180
			OSD: An Ott Planetarium					
			Workshop Production					
01		BGM Professor and	Daily Motion at 500 frames per	01	Cole	1040	180	1100
01		the Plant Part 1 - Up and Under			Cole	1040	100	1100
	Every day the Sun rises in the Eastand sets in the West		Sun rises, transits, sets.					
	And so do the stars, moon, and planets		Stars up, Moon up, transit, set, sunrise.					
	while we often take them for		carries.					
	granted, our lives are ruled by							
	our clockwork skies							
02		BGM Swell then under.	Logo.	02	Ron	620	1100	1600
03	Ancient astronomers once		Daily motion with running clock	03	Cole	2020	1600	3500
	thought that the Earth was at the center of the universe.		(01 + clock @ 500 fr/day).					
	And this made sense at the time							
	because it looked like the Sun,							
	Moon, stars, and planets were							
	circling the Earth every day.							
04	Today we know better.		Earth in space (500 frames per revolution).	04	Robinson	1170	2300	3350
	The Sun, Moon, stars, and							
	planets appear to rise and set							
	because of The Earth's daily							
	motion.							
	The Earth takes 24 hours to							
	rotate on its axis.				-			
	We call each complete rotation a "day."							

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		BGM: Professor and						
		the Plant Part 1						
		Ends cross to						
		Scheming Weasel						
OF	The Many substantia Fouth		Manage substitute that Fauth /to	05	leskeen	670	2250	2000
05	The Moon orbits the Earth.		Moon orbiting the Earth (to scale).	05	Jackson	670	3350	3900
	The Moon takes about a month							
	to complete one orbit.							
	As the Mean ton I the I the		L	00	D-Li-	470	0000	4050
06	As the Moon travels through its orbit, the Earth-facing side		Lunation	06	Robinson	470	3900	4250
	passes through sunlight and							
	darkness, causing the phases of							
	the Moon.							
	the Moon.							
07	The Earth orbits the Sun in a		Earth orbiting the Sun - from	07	Walter	770	4250	4900
	nearly perfect circle.		above North, looking down, pull					
	, .		for near-plane wide (builds to 09).					
	It takes 365 days to orbit once -							
	we call each orbit a "year."							
				00	D I ( I			
08	Earth's axis is tilted. This causes		CU Earth, showing Axial tilt and	08	Deleted			
	the Northern and Southern Hemispheres to experience		Daily Motion, Northern Winter.					
	opposite seasons.							
	For example: when it is winter in							
	Europe, Asia, and North							
	America, it is Summer in							
	Australia and South America.							
09	The rest of the planets also orbit		Solar System model, near-plane	09	Walter	270	4900	5050
	the Sun, but at different		(builds on 07).					
	distances and different speeds.							
10	Mercury takes only 88 Earth		Beauty Shot of Mercury	10	Robinson	320	5050	5250
10	days to orbit the Sun.		Boadity Office of Mercury	'0	RODINSON	320	3030	3230
	days to orbit the our.							

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0	V-14I-	DOM / EV Tl-	Viewal Nieda -	0	Dec deces	A5 - 120	Otant En	End En
	Voicetrack	BGM / FX Track	Visual Notes	Scn	Producer Jackson	Δf+120	5250	End Fr
11	While Neptune takes over 164 Earth years to orbit the Sun.		Beauty Shot of Neptune	11	Jackson	370	5250	5500
	Newton's Law of Universal Gravitation can tell us why.		FTB					
12	Newton discovered that distance affects the strength of gravity.		The Sun with a spectrum of gravity strength. OSD: F_g=GMm/r^2	12	Walter	370	5500	5750
(09)	The stronger the gravity, the faster the orbit.		Solar System model (recycle 09)	(09)	(Walter)	370	5750	6000
		BGM: Scheming Weasel Ends	FTB					
12	One could imagine the Solar	BGM: Professor and	Giant Solar System Clock	13	Cole	620	6000	6500
13	System as a gigantic, eight armed clock.	the Plant Part 2 - up	Giant Solar System Clock	13	Cole	620	0000	0300
	A vast, astronomical machine, powered by gravity.							
(01)	In our everyday lives, we track the passage of time with our schedules, calendars and clocks		Recycle 01	(01)	(Cole)	420	6500	6800
	all carefully matched to our clockwork skies.							
14		BGM: volume up for swell.	Roll Credits	14	Ron	1120	6800	7800
00			OSD: Ceres Open Movie Logo	00	Ron	420	7800	8100
			OSD: Made with Blender			120	7 0 0 0	3,00
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