

Supplement To

Topic A

"The Visible Sky"

Part 5. Moon's Motion

(Web Version: 09-10-01)


1

Two Additional Moon Items

1. Harvest Moon
2. Blue Moon

2

Harvest Moon

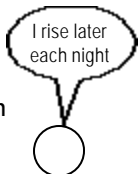


- Myths
 - Brightest Full Moon of Year
 - Largest Full Moon of Year
 - Closest Full Moon of Year
 - September's Full Moon
- ◆ Correct Definition
 - Full Moon nearest beginning of Fall or the *autumnal equinox* (usually Sept. 23)

3

Significance

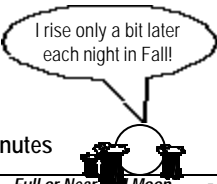
- Delay in Rise Time of Moon
 - Usually Moon rises later each night (by about 50 min.)
 - Why?
 - Moon has 13°/day easterly motion
 - Since sky turns westerly 15°/hr, then $13/15 \times 60 \text{ min} = 52 \text{ min delay}$



Full or Near Full Moon 4

Significance

- But Delay Throughout Year Not Constant
 - Affected by angle Moon's path makes with horizon
 - In Fall, path for rise of Full Moon at minimum angle
 - Makes delay in moonrise of Full Moon smallest in autumn
- Example
 - Gainesville — delay only 30 minutes



Full or Near Full Moon 5

Consequence

- Result If Autumn
 - Full & near Full Moons rise very close to sunset several nights in succession
 - Gives farmers extra light to harvest crops!
- Note
 - Delay almost as small for next Full Moon
 - Called *Hunter's Moon*

6

The Myth of Fall Full Moons

- Full & near Full Moons rise near sunset on many nights
- Fall sunsets occur during commuting hours
- East-west roads often common (e.g. Gainesville)
- Result
 - Rising full & near full moons in front of cars and pedestrians going east
 - Moon illusion “enlarges” Moon
 - So, people think “Fall Full Moons” extra large, bright & close



Blue Moons

- Could mean . . .
 - Blue colored Moon
 - Results from high altitude dust (from volcanoes or forest fires)
 - Preferentially removes red light
 - Dust makes Moon appear blue
 - Happens infrequently (a few times per century)



This is *not its usual meaning* in astronomy!

Blue Moons

- Modern USA usage . . .
 - Second Full Moon in a calendar month !
 - Possible since 1 lunation 29.5 days but most months have 30 or 31 days
 - Occurs every 2-3 years
 - So not really very rare!
 - Origin of meaning involved and convoluted (originated in first half of 20th Century)



Example Blue Moons

- 1996 June
- 1999 January & March!
- 2001 Nov
- 2004 July

