

Nova Scotia is home to two species of grouse. The Ruffed Grouse is by far the more common of the two, and even when not seen, the drumming of its wings during breeding season will often give away its presence. The Spruce Grouse (a male is in the photo) is not seen nearly as often. Unlike the Ruffed Grouse, whose habitat includes mixed forest, and hardwoods, the Spruce Grouse prefers large tracts of dense coniferous forest, so to see one you need to head into the deep woods. (PK)

DECEMBER 2013

For a wild bird, the Spruce Grouse can appear to be quite tame. That is because its primary mode of defense is to hop into a tree and remain motionless hoping to avoid notice. Newly fledged young also show this behaviour. This strategy is also employed by the Ruffed Grouse, but it will only allow a potential threat to come so close before flushing nosily out of cover, much like a pheasant. In contrast, a Spruce Grouse will often let a person approach almost to within touching distance. (PK)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
10:58 (12.5) 1 1836: Covered bridge over Avon at Windsor opens	11:48 (13.7) 2 1920: Acadia College Hall burns 1877: Acadia College burns. ●	12:39 (14.6) 3	13:30 (15.2) 4 Moon at perigee (Large tides next few days)	14:22 (15.3) 5	15:16 (15.0) 6 1917: Halifax Explosion	16:11 (14.3) 7
17:08 (13.4) 8	18:08 (12.5) 9 BNS Meeting 7:30 p.m. Earliest sunset of the year (16:35) (See astronomy note.) ●	06:40 (12.2) 10 1992: <i>A Natural History of Kings County</i> published by B.N.S.	07:40 (11.5) 11	08:38 (11.1) 12 1901: Marconi's wireless spans the Atlantic	09:33 (10.9) 13 <i>Geminid meteor shower tonight</i>	10:24 (10.9) 14 1900: Max Planck (physicist) introduces the quantum concept
11:12 (11.0) 15 1893: Harrison Lewis (founder, Canadian Wildlife Service) born at Yarmouth	11:56 (11.2) 16 1905: Austin Rand (ornithologist) born at Kentville, N.S. Moonrise: 16:25	12:38 (11.4) 17 1903: First powered flight (Wright brothers) Smallest Full Moon of 2013, rises at 17:15 ○	13:18 (11.5) 18 1869: Windsor to Annapolis railway opens Moonrise: 18:09	13:58 (11.5) 19 Moon at apogee	14:39 (11.3) 20 1764: Town of Windsor established	15:19 (11.0) 21 Solstice 13:11 AST, Shortest daylight of the year
16:01 (10.6) 22	16:45 (10.1) 23	17:32 (9.7) 24	18:21 (9.5) 25 Christmas Day 1642: Isaac Newton born ●	06:48 (9.7) 26	07:43 (9.9) 27 1912: Ray Magarvey (physicist) born at Parker's Cove, N.S.	08:38 (10.5) 28
09:34 (11.3) 29	10:30 (12.4) 30	11:25 (13.6) 31	NOVEMBER 2013 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	JANUARY 2014 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	Dec 1st Sunrise: 07:35 AST Sunset: 16:37 AST By Dec 22, day's sunlight period loses 17 min, giving 8 h 45 min of sun; by Dec 31, 4 min is gained.	Dec 1st. Sun's maximum noon altitude is 22.8°. Minimum altitude for the year is 21.2° on Dec. 22nd

Seasonal Temperatures

It is the varying angle of the mid-day Sun above the horizon and the associated duration of daylight that dominates seasonal temperature variations. However, during December, Earth is almost at its nearest point to the Sun. The least distance (perihelion) is reached early in January. For countries such as Canada the varying distance of Earth from the Sun tends to moderate seasonal temperatures (warmer winters, cooler summers), whereas it tends to accentuate seasonal temperatures of countries such as Australia and South Africa. (RB)

Earliest Sunset of the Year

The shortest day of 2013 occurs with the winter solstice, on December 21. However, the earliest sunset is 12 days earlier, on December 9, and the latest sunrise is not until early January 2014. That asymmetry is a consequence of two aspects of celestial geometry: Earth's equator is tilted relative to the plane of its orbit, and Earth's speed along its elliptical orbit varies during the year. In December Earth's tilt is large relative to the Sun, and Earth is near its perihelion point (closest to the Sun) making its orbital speed greater than average. (RB)