

## 1 "Blue Moon" to Shine on New Year's Eve

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3 For the first time in almost 20 years, a bright "blue moon" will grace New Year's Eve celebrations **worldwide**. If the skies  
4 are clear, revelers looking up at midnight will get an eyeful of the second full moon of the month—commonly called a  
5 blue moon. The last time a blue moon **appeared** on New Year's Eve was in 1990, and it won't happen again until 2028. A  
6 blue moon isn't actually blue—as **commonly** defined, the name **reflects** the relative **rarity** of two full moons in a month  
7 and is linked to the saying "once in a blue moon." With this New Year's Eve blue moon, "there is nothing scientific about  
8 it, and it has no astronomical **significance**," said Mark Hammergren, a staff astronomer at the Adler Planetarium in  
9 Chicago, Illinois. "But I believe it does give us some **insight** into history and makes us think of how our calendar system  
10 has **derived** from motions of objects in the sky."

### 11 Blue Moon Error

12 The popular definition of a blue moon isn't the only one—and it's one that's based on an editorial error, astronomers  
13 contend.

14 The **widespread** definition of the second full moon in a month stems from errors made in an astronomy magazine, when a  
15 writer **misinterpreted** how the term was used in the Maine Farmer's Almanac. Later studies of almanacs published from  
16 1819 to 1962 **revealed** that the term "blue moon" actually **refers to** the "extra" full moon that can **occur** in a year **due to**  
17 differences between the calendar year and the astronomical year. Most years **on average** have 12 full moons, with 1  
18 appearing each month. That's because the lunar month—the time it takes the moon to cycle through its phases—  
19 corresponds **closely** to the calendar month. But the calendar year is actually **based on** the solar cycle, or the time it takes  
20 Earth to make one trip around the sun. This means a year is not **evenly divisible** by lunar months, so every three years or  
21 so there are 13 full moons. The farmer's almanac further **divided** the year into four **seasons**, with each season lasting three  
22 months. When a **given** season saw four full moons, the almanac dubbed the third moon as a blue moon. **Ultimately**, a blue  
23 moon as defined by the calendar isn't that **rare**, added Hammergren. The term's **significance** instead lies in the way it  
24 links people to the **motions** of the cosmos. "Just being able to recognize that we can have a full moon twice in a month  
25 and have [folklore] attached really **highlights** the fact that humans have been astronomers their **entire** existence," he said.  
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### 28 "True" Blue Moon

29 Before the editorial error, the term "blue moon" more often referred to the rare **instances** when the moon actually seemed  
30 to turn blue, as can happen under certain atmospheric **conditions**. "After a forest fire or volcanic eruption, there may be  
31 enough particulate **matter** in the air so that the moon can take on a bluish tinge," Hammergren said. For instance, a "true"  
32 blue moon occurred in 1950 after a large forest fire in Canada blew smoke across most of the Northern Hemisphere.  
33 Another appeared in 1980 after the last major eruption of Mount St. Helens, which sent tons of ash into the upper  
34 atmosphere. Although rumblings at the Mayon Volcano in the Philippines seem to signal a major eruption is **imminent**,  
35 experts don't think Mayon's **current output** will make this New Year's Eve full moon turn blue.  
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### 37 Howling at the Blue Moon

38 Even if the 2009 New Year's Eve blue moon has astronomers scoffing, nighttime partygoers may still get moonstruck.  
39 Rising in the east at sunset, the New Year's Eve full moon will **reach** its highest point at midnight, noted Jack  
40 Horkheimer, director of the Miami Space-Transit Planetarium and host of PBS television's long-running show Star Gazer.  
41 "Full moons around winter **solstice** rise their highest for the entire year," Horkheimer added. "Even if you are downtown  
42 in a large city, if it is clear at the stroke of midnight the moon will be very **visible** if you look up." In any location, the  
43 high, silvery orb will seem like a floodlight cast on the **landscape**, added Horkheimer, who is organizing a national moon-  
44 howling **contest** around this year's blue moon. "This is especially true where the ground is **covered** with a blanket of  
45 snow. There is nothing quite so **spectacular** as a snow-covered scene under a December full moon at midnight."  
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47 Adapted from the [National Geographic](#)