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You've seen one tremendously bright fireball. Dust shed by the famous comet causes two of the top annual showers, the Eta Aquarids and the Orionids. Almost everyone confuses the coma with the head of the comet, but the head, properly speaking, consists of both the coma and the nucleus. This list maps out major events of the Space Age:1957 The Soviet Union launches Sputnik 1, the first artificial satellite to orbit Earth.1958 Using the satellite Explorer 1, James Van Allen discovers Earth's radiation belts (magnetosphere).1960 Frank Drake begins the Search for Extraterrestrial Intelligence (SETI) at the National Radio Astronomy Observatory in Green Bank, West Virginia.1961 Yuri Gagarin makes the first manned space flight.1963 Valentina Tereshkova is the first woman in space.1967 Jocelyn Bell Burnell and Anthony Hewish discover pulsars.1969 Neil Armstrong and Buzz Aldrin walk on the moon.1979 Using pictures from Voyager 1, Linda Morabito discovers erupting volcanoes on Jupiter's moon, Io.1987 Ian Shelton discovers the first supernova since 1604 plainly visible to the naked eye.1990 The Hubble Space Telescope launches.1991 Alexander Wolszczan discovers planets orbiting a pulsar — the first known planets outside the solar system.1995 Michel Mayor and Didier Queloz discover 51 Pegasi B, the first planet of a normal star beyond the Sun.1998 Two astronomer teams discover that the expansion of the universe is getting faster, perhaps due to a mysterious "dark energy" associated with the vacuum of space.1999 Mars Global Surveyor finds that Mars may have had an ocean at one time.2003 The Wilkinson Microwave Anisotropy Probe satellite finds that the universe is 13.7 billion years old.2012 The Kepler spacecraft finds that there probably are billions of planets in orbit around stars in our galaxy, and the rover Curiosity lands on Mars.**2015** The New Horizons probe explores Pluto and its moons and then heads outward in the Kuiper Belt").{"title":"Famous women in astronomy","thumb":null,"image":null,"content":"When you're studying astronomy, don't forget the women who made an impact in the field. Study the telescope manufacturer websites earlier in this chapter or send for catalogs advertised in astronomy magazines. To paraphrase an old Dean Martin tune, when the meteor hits your eye like a big pizza pie, that's a fireball!rFireballs aren't very rare. The spots look dark compared to their hotter surroundings, but if all you can see is the sunspot, it looks bright.rA Star in Plain View May Have Exploded, but No One KnowsrEta Carinae is one of the most massive, fiercely shining stars in our galaxy, and astronomers expect it to produce a powerful supernova explosion at any time, if it hasn't already. You May Have Seen the Big Bang on an Old Television The Big Bang Theory premiered in 2007, but the real Big Bang may have made its TV debut even before that. For maps that are equally good but larger, consult the Jumbo Pocket Sky Atlas by the same author and publisher (2016); you'll just need a bigger pocket. However, the "asteroid" is probably a dead comet, which longer puffs out gas and dust to form a head and tail. Margaret Burbidge pioneered modern studies of galaxies and quasars. Huge numbers of Leonids were seen in November 1966 and again in November 1999, 2000, 2001, and 2002, at least for brief times at some locations. View Article Astronomy Skywatching for Artificial Satellites Article / Updated 11-14-2017 Hundreds of operating satellites are orbiting Earth, along with thousands of pieces of orbiting space junk — nonfunctional satellites, upper stages from satellite launch rockets, pieces of broken and even exploded satellites, and tiny paint flakes from satellites and rockets. Otherwise, make a simple sketch showing where you stood when you saw the fireball — note roads, buildings, big trees, or any other landmarks.rMake a sketch of the sky, showing the track of the fireball with respect to the horizon as you saw it.rEven if you're not sure whether you faced southeast or north-northwest, a sketch of your location and the fireball track helps scientists determine the trajectory of the fireball and where the meteoroid may have landed.rAfter a daylight fireball or a very bright nighttime fireball, interested scientists advertise for eyewitnesses. The meteoroid that produces the fireball has fragmented, probably from aerodynamic forces, just as an airplane falling out of control from high altitude sometimes breaks apart even though it hasn't exploded.rOften a bright meteor leaves behind a luminous track. When a comet approaches the Sun, its tail, or tails, stream behind it: when the comet heads back out into the solar system, the tail leads the way.rEarth Is Made of Rare and Unusual MatterrThe great majority of all the matter in the universe is so-called dark matter, invisible stuff that astronomers haven't yet identified. Point the camera about halfway up the sky from the horizon to the zenith, or a little higher, facing whichever direction has the least interfering sky glow from city or other lights. But on certain occasions every year, you may see 10, 20, or even 50 or more meteors per hour in a dark, moonless sky far from city lights. Some astronomers stuck their necks out by theorizing that the odd-shaped nucleus was formed by the low-speed collision of two earlier objects. 21r20rGeminids/Dec. Don't use a telephoto lens. rUse an intervalometer or rRemote switch with digital timer" to operate the camera shutter without shaking the camera and to take pictures at regular intervals during the night.rPoint the camera about halfway up the sky from the horizon to the zenith, or a little higher, facing whichever direction has the least interfering sky glow from city or other lights.rUSpend some time making test exposures to determine what settings to use on that particular night. But digital meteor photography requires a digital single lens reflex camera (DSLR), which is expensive camera (point-and-shoot cameras and cellphone cameras don't work very well, except in the rare case when you can catch a brilliant fireball) and a lot of trial-and-error experimenting until you get it right. Although a fireball has no official definition, many astronomers consider a meteor that looks brighter than Venus to be a fireball. But meteor showers vary from year to year, just like rainfall. The comet shown could be going clockwise or counterclockwise, but either way, the tail always points away from the Sun. This may defy common sense, but not physics and mathematical analysis. You're trying to determine how long you can let an exposure last (the longer the better) without skylight overexposing the picture. Identifying a radiant in that way is how you can tell a shower meteor from a sporadic one.rIf you do face the radiant, however, you see some meteors that seem to have very short paths, even though they appear fairly bright. The ice ball may be dozens of miles in diameter or just a mile or two. Check out this list of amazing achievements by women astronomers and astrophysicists: Historical: Caroline Herschel (1750-1848) Discovered eight comets. 21 15 Eta Aquarids May 4-5 30 Delta Aquarids July 28-29 25 Perseids Aug. And be sure you have a thermos of hot coffee, tea, or cocoa! You don't have to face the radiant when you observe a meteor shower, although many people do. Halley's nucleus decreases by at least a meter (39.37 inches, or slightly more than a yard) every 75 to 77 years near the Sun. In fact, Pluto's mass is much too small to produce the "observed" effects. When a comet heads inward toward the Sun, its tail or tails stream behind it. Top Annual Meteor Showers Shower Name Approximate Date Meteor Rate (Per Hour) Quantitative Data Meteor Rate (Per Hour) Quantitative Data rComet's more expensive than a comparable reflector. Don't forget to look for it!rYou almost never see as many meteors per hour as listed. Such a dead comet is a meteor shower, when Earth passes through a great ring of billions of meteoroids that runs all the way around the orbit of the comet that shed them.rThe following figure illustrates the occurrence of a meteor shower.r(rcaption id="attachment_246753" align="alignnone" width="535") Earth's path crossing a belt of meteoroids creates a shower of meteors.(caption)rThe direction in space or place on the sky where a meteor shower seems to come from is called the radiant. The most popular meteor shower is the Perseids, which, at its peak, produces as many as 80 meteors per hour. It's meant for use on a tabletop but may work for you when just placed on the ground. Often a bright meteor leaves behind a luminous track. You can find larger telescopes for less money — check the ads in current issues of astronomy magazines — but you have to invest much more effort in learning to use them effectively.rMore brand-name telescopes are sold through authorized dealers that tend to have expert knowledge. Record exactly where you are. The Geminids are a meteor shower that seems to be associated with the orbit of an asteroid rather than a comet. The gas and dust form a hazy, shining cloud around the nucleus called the coma (a term derived from the Latin for "hair," not the common word for an unconscious state). An investigator of stars, nebulae, and comets, he worked on the Hubble Space Telescope, Space Shuttle missions, Skylab, and other NASA projects." } links:{"self":" } },"links":{"self":" } },"collections":{"articleAds":{"footerAd":"","rightAd":"","articleType":{"articleType":"Articles","articleList":null,"content":null,"videoInfo":{"videoId":"null","name":"null","accountId":"null","playerId":"null","thumbnailUrl":"null","description":"null","uploadDate":"null"},"sponsorship":{"sponsorshipPage":"false","backgroundImage":{"src":"null","width":"0","height":"0"},"brandingLine":"","brandingLink":"","brandingLogo":{"src":"null","width":"0","height":"0"},"primaryLearnablePath":"Advantage","lifeExpectancySetFrom":"null","lifeExpectancySetFrom":"null","dummiesForKids":"no","sponsoredContent":"no","adInfoKey":"","adPartnerKey":"","status":"publish","visibility":"public"},"articleId":"2466925"},"headers":{"creationTime":"2017-11-14T08:33:21+00:00"},"modifiedTime":"2017-11-14T08:33:21+00:00"},"timestamp":"2022-02-24T17:03:55+00:00"},"data":{"breadcrumbs":{"names":"Academics & The Arts"},"links":{"self":" } },"slug":"science"},"categoryId":"33756"},"name":"Astronomy"},"links":{"self":" } },"slug":"astronomy"},"categoryId":"33758"},"title":"Skywatching for Artificial Satellites","strippedTitle":"skywatching-artificial-satellites","canonicalUrl":"","seo":{"metaDescription":"","noindex":"0","noFollow":"0"},"content":"Hundreds of operating satellites are orbiting Earth, along with thousands of pieces of orbiting space junk — nonfunctional satellites, upper stages from satellite launch rockets, pieces of broken and even exploded satellites, and tiny paint flakes from satellites and rockets.rYou may be able to glimpse the reflected light from any of the larger satellites and space junk, and powerful defense radar can track even very small pieces.rThe best way to begin observing artificial satellites is to look for the big ones — such as NASA's International Space Station or the Hubble Space Telescope — and the bright, flashing ones (the dozens of Iridium communication satellites).rLooking for a big or bright artificial satellite can be reassuring to the beginning astronomer. But take their advice with just a wee bit of salt.rHere are some key websites to browse for telescope product information:rTelescope, for many years the favorite manufacturer for thousands of astronomers.rMeade Instruments Corporation.rOrion Telescopes & Binoculars.rOn each of these websites, you can find the instruction manuals for many of the telescopes that they sell.rHere are some key websites to browse for telescope product information: rTelescope, for many years the favorite manufacturer for thousands of astronomers.rMeade Instruments Corporation.rOrion Telescopes & Binoculars.rOn each of these websites, you can find the instruction manuals for many of the telescopes that they sell. The direction in space or place on the sky where a meteor shower seems to come from is called the radiant. And although Lowell predicted the existence of a planet, as Pluto was first termed, the International Astronomical Union has since downgraded it to dwarf planet. Some astronomers stuck their necks out by theorizing that the odd-shaped nucleus was formed by the low-speed collision of two earlier objects. The comets as a comet gets closer to the Sun, solar heat vaporizes more of the frozen gas, and it spews out into space, blowing some dust out, too. Meteor showers are among the most enjoyable sights in the heavens. You get many more on the front windshield as you drive down the highway than on the rear windshield because the front windshield is driving into bugs and the rear windshield is driving away from bugs."description":"When you're outdoors on a dark night and see a "shooting star" (the flash of light from a random, falling meteoroid), what you're probably seeing is a sporadic meteor. (Sometimes when you view a comet, you see just one kind of tail, but when you're lucky, you can see both.rThe pressure of sunlight pushes the dust particles in a direction opposite the Sun, producing the comet's dust tail. The dust tail shines by the reflected light of the Sun and has these characteristics:rA smooth, sometimes gently curved appearance.rA pale yellow color.r(caption id="attachment_246766" align="alignnone" width="351") A comet's tail points away from the Sun.(caption)rThe other type of comet tail is a plasma tail (also called an ion tail or a gas tail). That size is pretty small by astronomical standards, and because the nucleus shines only by the reflected light of the Sun, a distant comet is faint and hard to find.rImages of Halley's nucleus from a European Space Agency probe that passed very close to it in 1986 show that the lumpy, spinning ice ball has a dark crust, like the tartufo dessert (balls of vanilla ice cream coated with chocolate) served in fancy restaurants. A comet far from the Sun is only the nucleus; it has no head or tail. It moves much more slowly than a meteor. To plan your observations of planets and constellations, you can also rely on the weekly sky scenes at the Sky & Telescope website. The dust the comet loses may someday produce a meteor shower, if it crosses Earth's orbit.rHalley's comet is a good example of the wasting-away process. If so, check out the list of meteor showers visible from the Southern Hemisphere on the website of the Royal Astronomical Society of New Zealand. Women have played important roles in astronomy, so be sure to check out how their discoveries have shaped what we know about space. Here's a plan for acquiring both basic skills and the needed equipment: If you have a late-model computer, invest in a free or inexpensive planetarium program. They collect the information, and by comparing the accounts of persons who viewed the fireball from different locations, they can close in on the area where it most likely fell to the ground. You get many more on the front windshield as you drive down the highway than on the rear windshield because the front windshield is driving into bugs and the rear windshield is driving away from bugs."description":"When you're outdoors on a dark night and see a regular on dark nights for a few hours at a time, you'll probably see a fireball about twice a year. Check out this list of amazing achievements by women astronomers and astrophysicists:rHistorical:Caroline Herschel (1750-1848) Discovered eight comets.rAnnie Jump Cannon (1863-1941) Devised the basic method for classifying the stars.rHenrietta Swan Leavitt (1868-1921) Discovered the first accurate method for measuring great distances in space.rCecilia Payne-Gaposchkin (1900-1979) Proved that hydrogen is the most abundant chemical element in the stars.rSally Ride (1951-2012) A trained astrophysicist, she is the first American woman in space. rVeronica C. You can get ideas about what larger telescopes to consider by talking to other amateur astronomers and by attending a star party, where you can see many different telescopes in operation and on display.","blurb":"","authors":{"authorId":"9879","name":"Stephen P. And it still costs more than a hundred or maybe several hundred dollars.rA good telescope, bought new, may run you several hundred dollars to \$1,000, and you certainly can pay more. Quality and capabilities are going up, and prices are generally fair, perhaps because reliable manufacturers are in competition for your money.rGenerally, a good refractor gives better views than a good reflector that has the same aperture, or telescope size. When a fireball breaks apart, you see two or more bright meteors at once, very close to each other and heading the same way. However, Venus may not be visible at the time you see the bright meteor. Gabriela González Leader in detecting gravitational waves from merging black holes. Astronomy clubs in other areas are beginning to sponsor library telescopes; search the web to see whether a library telescope program exists near you. View Article Astronomy Making Heads and Tails of a Comet's Structure Article / Updated 11-14-2017 A comet is a stuck-together mixture of ice, frozen gases (such as the ices of carbon monoxide and carbon dioxide), and solid particles — the dust or "dirt" shown here. The following figure illustrates the occurrence of a meteor shower. You can get ideas about what larger telescopes to consider by talking to other amateur astronomers and by attending a star party, where you can see many different telescopes in operation and on display. View Article You may be able to glimpse the reflected light from any of the larger satellites and space junk, and powerful defense radar can track even very small pieces. And the nucleus is a little smaller, due to the gas and dust that it loses. Further, the "asteroid" is probably a dead comet, which longer puffs out gas and dust to form a head and tail. Margaret Burbidge pioneered modern studies of galaxies and quasars. Huge numbers of Leonids were seen in November 1966 and again in November 1999, 2000, 2001, and 2002, at least for brief times at some locations. View Article Astronomy Skywatching for Artificial Satellites Article / Updated 11-14-2017 Hundreds of operating satellites are orbiting Earth, along with thousands of pieces of orbiting space junk — nonfunctional satellites, upper stages from satellite launch rockets, pieces of broken and even exploded satellites, and tiny paint flakes from satellites and rockets. Otherwise, make a simple sketch showing where you stood when you saw the fireball — note roads, buildings, big trees, or any other landmarks.rMake a sketch of the sky, showing the track of the fireball with respect to the horizon as you saw it. The plasma tail is like a wind sock at an airport: it shows astronomers who view the comet from a distance which way the solar wind is blowing at the comet's point in space.rIn contrast to the dust tail, a comet's plasma tail has the following:rA stringy, sometimes twisted, or even broken appearance.rA blue color.rNow and then, a length of plasma tail breaks from the comet and flies off into space. Sunspots Aren't Dark Almost everyone "knows" that sunspots are "dark" spots on the Sun. Halley's comet is a good example of the wasting-away process. r" r" /http://db/"} + v.scorecardresearch.com/beacon.js"}el.parentNode.insertBefore(s, el)});

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Jocelyn Bell Burnell Discovered pulsars in her work as a graduate student.E. (The Perseids get their name because they seem to streak across the sky from the direction of the constellation Perseus, the Hero, their radiant. It's comparably sized and equipped and has the capability to automatically align itself on the sky, after which it points to almost any celestial object that you select. If it lasts long enough, it becomes distorted by the high-altitude winds, just as the wind gradually deforms the skywriting from an airplane above a beach or stadium. The paths appear short because the meteors are coming almost right at you. But in reality, sunspots are simply places where the hot solar gas is slightly cooler than its surroundings. Any very bright fireball (approaching the brightness of the half Moon or brighter) or any daylight fireball represents a possibility that the meteoroid producing the light will make it to the ground. You get many more on the front windshield as you drive down the highway than on the rear windshield because the front windshield is driving into bugs and the rear windshield is driving away from bugs. An investigator of stars, nebulae, and comets, he worked on the Hubble Space Telescope, Space Shuttle missions, Skylab, and other NASA projects." } links:{"self":" } },"primaryCategoryTaxonomy":{"categoryId":"33758","title":"Astronomy"},"slug":"astronomy"},"links":{"self":" } },"secondaryCategoryTaxonomy":{"categoryId":"0","title":"null","slug":"null","links":"null"},"tertiaryCategoryTaxonomy":{"categoryId":"0","title":"null","slug":"null","links":"null"},"trendingArticles":null,"inThisArticle":{"label":"Historical","target":"#tab1"},"{"label":"Contemporary","target":"#tab2"},"relatedArticles":{"fromBook":{"articleId":"246769","title":"Skywatching for Artificial Satellites","slug":"skywatching-artificial-satellites","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } },"articleId":"246764","title":"Making Heads and Tails of a Comet's Structure","slug":"making-heads-tails-comets-structure","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } },"articleId":"246761","title":"Photographing Meteors and Meteor Showers","slug":"photographing-meteors-meteor-showers","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } },"articleId":"246756","title":"Viewing Meteor Showers","slug":"viewing-meteor-showers","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } },"articleId":"246753","title":"Spotting Sporadic Meteors, Fireballs, and Bolides","slug":"spotting-sporadic-meteors-fireballs-bolides","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } },"fromCategory":{"articleId":"246769","title":"Skywatching for Artificial Satellites","slug":"skywatching-artificial-satellites","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } },"articleId":"246764","title":"Making Heads and Tails of a Comet's Structure","slug":"making-heads-tails-comets-structure","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } },"articleId":"246761","title":"Photographing Meteors and Meteor Showers","slug":"photographing-meteors-meteor-showers","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } },"articleId":"246756","title":"Viewing Meteor Showers","slug":"viewing-meteor-showers","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } },"hasRelatedBookFromSearch":false,"relatedBook":{"bookId":"281963","slug":"astronomy-for-dummies-4th-edition","isbn":"9781119374244","categoryList":["academics-the-arts","science","astronomy"],"amazon":{"default":"as_li_t?ie=UTF8&tag=wiley01-20","ca":"as_li_t?ie=UTF8&tag=wiley01-20","indigo_ca":"For Dummies, 4th Edition","testBankPinActivationLink":"","bookOutOfPrint":false,"authorsInfo":" Stephen P. You get many more on the front windshield as you drive down the highway than on the rear windshield because the front windshield is driving into bugs and the rear windshield is driving away from bugs.","blurb":"","authors":{"authorId":"9879","name":"Stephen P. From noon to midnight, you're on the backside, and meteoroids have to catch up in order to enter the atmosphere and become visible. Sally Ride (1951-2012) A trained astrophysicist, she is the first American woman in space. When scientists see daytime fireballs, they almost always mistake them for an airplane or missile on fire and about to crash. An investigator of stars, nebulae, and comets, he worked on the Hubble Space Telescope, Space Shuttle missions, Skylab, and other NASA projects." } links:{"self":" } },"primaryCategoryTaxonomy":{"categoryId":"33758","title":"Astronomy"},"slug":"astronomy"},"links":{"self":" } },"secondaryCategoryTaxonomy":{"categoryId":"0","title":"null","slug":"null","links":"null"},"tertiaryCategoryTaxonomy":{"categoryId":"0","title":"null","slug":"null","links":"null"},"trendingArticles":{"articleId":"1","relatedArticles":{"fromBook":{"articleId":"246764","title":"Making Heads and Tails of a Comet's Structure","slug":"making-heads-tails-comets-structure","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } },"articleId":"246761","title":"Photographing Meteors and Meteor Showers","slug":"photographing-meteors-meteor-showers","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } },"articleId":"246756","title":"Viewing Meteor Showers","slug":"viewing-meteor-showers","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } },"articleId":"246753","title":"Spotting Sporadic Meteors, Fireballs, and Bolides","slug":"spotting-sporadic-meteors-fireballs-bolides","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } },"articleId":"246750","title":"Planning Your First Steps into Astronomy","slug":"planning-first-steps-astronomy","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } },"fromCategory":{"articleId":"246764","title":"Making Heads and Tails of a Comet's Structure","slug":"making-heads-tails-comets-structure","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } },"articleId":"246761","title":"Photographing Meteors and Meteor Showers","slug":"photographing-meteors-meteor-showers","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } },"articleId":"246756","title":"Viewing Meteor Showers","slug":"viewing-meteor-showers","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } },"articleId":"246753","title":"Spotting Sporadic Meteors, Fireballs, and Bolides","slug":"spotting-sporadic-meteors-fireballs-bolides","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } },"articleId":"246750","title":"Planning Your First Steps into Astronomy","slug":"planning-first-steps-astronomy","categoryList":["academics-the-arts","science","astronomy"],"links":{"self":" } }"},"hasRelatedBookFromSearch":false,"relatedBook":{"bookId":"281963","slug":"astronomy-for-dummies-4th-edition","isbn":"9781119374244","categoryList":["academics-the-arts","science","astronomy"],"amazon":{"default":"as_li_t?ie=UTF8&tag=wiley01-20","ca":"as_li_t?ie=UTF8&tag=wiley01-20","indigo_ca":"For Dummies, 4th Edition","testBankPinActivationLink":"","bookOutOfPrint":false,"authorsInfo":" Stephen P. The Perseids come in August, when the balmy nights in North America and Europe often are perfect for skywatching, but the other leading meteor showers — the Geminids and Quadrants — streak across the sky in December and January, respectively, when the weather is worse in the Northern Hemisphere and observers' ambitions are limited. Generally, a good refractor gives better views than a good reflector that has the same aperture, or telescope size. 21 20 Geminids Dec. Jill Farter Leader in the search for extraterrestrial intelligence. The Quadrants may last for just one night or only a few hours. Some showers go on for days, and others for weeks, raining down meteors at lower rates than the peak values. They even investigated pigeon droppings, or "white dielectric material" in science speak, as a possible cause but later dropped that suggestion.","blurb":"","authors":{"authorId":"9879","name":"Stephen P. In August 2014, the Rosetta spacecraft reached Comet 67P/Churyumov-Gerasimenko, known as 67P to its friends (like me). You can even see some Iridium flares in daylight. Compare sensors in your star atlas with the constellations that you're observing; the atlas shows their RA's and Decs. Such an event is a meteor shower, when Earth passes through a great ring of billions of meteoroids that runs all the way around the orbit of the comet that shed them. In addition to losing their namesake, the Quadrants seem to have lost the comet that spawned them — their origin was a mystery until 2003, when astronomer Petrus Jenniskens found that an object named 2003 EH1 may be their parent comet. Aperture refers to the diameter of the main lens, the mirror, or, in a more complicated telescope, the size of the unobstructed portion of the optics. The official meteor rates are defined for exceptional viewing conditions, which few people experience nowadays. The Autostar can even find moving objects, such as planets, based on stored information, and it's equipped to give you a "tour" of the best sights in the sky, selected with no input from you. Some of the snow — a pattern of interference that looks like little white spots or streaks on old black-and-white television sets — was actually radio waves the TV antenna received from the cosmic microwave background, a glow from the early universe in the aftermath of the Big Bang. If you have a smartphone, it should give you the time accurate at least to the minute.rRecord exactly where you are.rIf you have a Global Positioning System receiver handy (or a smartphone with a GPS app, such as Compass on the iPhone), take a reading of your latitude and longitude. (The best settings vary depending on how bright the sky is.) Make several 10-second exposures, some 20-second exposures, and some 30-second exposures. Make a sketch of the sky, showing the track of the fireball with respect to the horizon as you saw it. The plasma tail is like a wind sock at an airport: it shows astronomers who view the comet from a distance which way the solar wind is blowing at the comet's point in space.rIn contrast to the dust tail, a comet's plasma tail has the following:rA stringy, sometimes twisted, or even broken appearance.rA blue color.rNow and then, a length of plasma tail breaks from the comet and flies off into space. Sunspots Aren't Dark Almost everyone "knows" that sunspots are "dark" spots on the Sun. Halley's comet is a good example of the wasting-away process. r" r" /http://db/"} + v.scorecardresearch.com/beacon.js"}el.parentNode.insertBefore(s, el)});

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