PLANETS, STARS, AND GALAXIES pdf

1: Planets, Stars, and Galaxies by David A. Aguilar | www.enganchecubano.com

Stars, Planets, and Galaxies. Illuminate the night sky with information on stars, planets, and galaxies, along with photos of celestial objects.

Please use the course inbox in Canvas Other Connection options: My best effort office hours are Mondays from 2: I am happy to hold office hours or appointments using Zoom, FaceTime, Skype or technology. Overview of the structure, formation, and evolution of planets, stars, galaxies, and the universe. None Observations by modern ground-based and space-based observatories have fueled significant changes in our understanding of the Universe. Planets, Stars, Galaxies, and the Universe will provide you with a strong foundation in astronomy, allowing you to critically evaluate the evidence for the most recent advances in our understanding of the Solar System, our Galaxy, and the Universe. Astronomers use observations of the light from distant sources to discover the nature of these objects and their environment. ASTRO will lead you to an understanding of light and the instruments for its detection. You will see how careful analysis of these observational data and theoretical models are used to solve the mysteries of the Universe. You will use highly detailed planetarium software and simulated observing experiences to directly explore the night sky to make the same observations that research astronomers perform in their work. There are 12 lessons that will be completed at a rate of approximately 1 week per lesson. There will be no set class meeting times, but students will be required to complete weekly assignments. Each lesson contains interactive exercises, links, animations, movies, and novel explanations of the basic scientific principles related to the objects in the Universe and their environments. Each lesson will conclude with an open book, online assessment, which will rely on a variety of types of exercises. These exercises will include brief math problems and short essay questions, some of which will require additional Internet research to complete. Several simulated lab exercises will also be required, which will allow the students to enrich their understanding of the concepts through inquiry-based, active learning. Each students will also complete a capstone project, where they will use content knowledge and skills to create material for their classrooms. ASTRO students will be granted licenses to use the courseware developed for this course in their own secondary classrooms. You should expect to spend the same amount of time on this course that you would spend in and out of class in your other courses. On average, that may be about eight hours per week. However, you will find your workload depends on your familiarity with the technology needed to take an online course and any past experience you have with the astronomy subject matter. In my experience, the students who reach their goals in online courses are those who are able to motivate themselves to keep up with the coursework and those who take the opportunity to communicate with the instructor and their peers. I encourage you to ask as many questions as you would in a face-to-face class; if you are struggling with any aspect of the course, I can only help you if you ask for help. Specific learning objectives for each lesson and assignments are detailed within each lesson. Return to top of page Course Goals and Learning Objectives The overarching goal of this course is to provide secondary science teachers with the necessary content background to convey the astronomy topics required by mandated state standards. You will be provided with materials for presenting the course content in your classroom and will be granted licenses to use the courseware developed for this course in your own secondary classroom. Unit I, Lessons Unit II, Lessons Unit III, Lessons Unit IV, Lessons Return to top of page Required Course Materials All instructional materials needed for this course are presented online â€” no textbook is required. Some students do find a textbook a nice resource, however. So if you would like to purchase one, contact me for recommendations. There is also a free online astronomy textbook that I refer to in the course lessons that you may wish to use; it is available at Astronomy Notes. Two other general purpose, free, on-line texts for teaching astronomy are Teach Astronomy and openstax Astronomy. In order to access the online course materials, you need to have an active Penn State Access Account user ID and password. If you have any questions about obtaining or activating your Penn State Access Account, please contact the World Campus. In addition, you will need to purchase the following software in order to complete select course assignments: Mike Goodman is the direct contact at the Starry Night store, and he has arranged for our class to order the

software in the following way: Your coupon code is: PennState this is good only for students taking the course during Fall semester code updated Aug 1. Students go to Starry Night Enthusiast. Scroll to the bottom of the page and select Download as the Method of Delivery. Press the Add to cart button. Complete the billing address information. Two emails will be sent to students: Click the link, enter the user name and license key. While Starry Night Enthusiast will suffice for the purposes of this course, you might consider purchasing one of the following versions instead: Be sure to order Starry Night at the beginning of the course so you will have it in time for the first Starry Night activity. He is very responsive to the needs of educators.

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2: Galaxies - Stars - Astronomy for Kids

David Aguilar's "Planets, Stars, and Galaxies: A Visual Encyclopedia of Our Universe" is a beautiful and well-done book that does a very good job giving a general overview of the latest astronomical knowledge.

How are Galaxies Formed? For galaxies, the answer is pretty simple: But to understand why this is our answer, we actually have to go back in time. Most galaxies are already well-formed. So, into the time machine we go. Admittedly, this place is kind of boring. Over time, cloudy nebulae began to cluster around central points with strong gravity. As more things arrived at these centers, their gravity got even stronger. Soon, they became enormous! So enormous, in fact, that all the stuff would collapse into a black hole! This would act as a more stable center of gravity, allowing things to orbit from a distance. And so, we have our galaxy. Stars Form But what about all the things in it? The kind we know best are spiral galaxies the Milky Way is one. Spiral The main feature of spiral galaxies is, as their name suggests, their spiral shape. These stars undergo drastic changes as they grow, generating a lot of light. This is actually what makes the spiral arms of a galaxy visible. The stars in it orbit the center in random directions. Among them are actually some of the oldest stars in existence. Notably, elliptical galaxies can be enormous. That means that it takes light 6 million years to get from one side of IC to the other. But to answer this question, I have to. This should cause us to wonder: What might we still discover? Who knows, maybe one day you will explore it! Whose face is behind the glass? Someday, could it be you? Although, whether or not you do, the future is bright. Colliding Galaxies In fact, it holds SO much that those things often collide. Galaxies are no exception. But relax, not any time soon! Steer clear of these colliding galaxies! Still, other galaxies are crashing into each other all the time. When they do, they might merge to form an even larger galaxy. The result is almost always elliptical which is actually what allows elliptical galaxies to be so large. They just keep adding more and more stars through repeated collisions. More on Galactic Collisions: Facts about the Milky Way:

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3: Planets, Stars, and Galaxies: A Visual Encyclopedia of Our Universe by David A. Aguilar

This free course, Galaxies, stars and planets, is a general introduction, including scale of the universe from the very large to the very small; orbits and gravity; the Solar System; the Sun and other stars; galaxies and the composition of astronomical objects.

Welcome to universe, galaxies and stars. The universe is commonly defined as the totality of everything that exists - including all physical space, time , matter and energy , the planets , stars , galaxies , and the contents of intergalactic space, although this usage may differ with the context. The term universe may be used in slightly different contextual senses, denoting such concepts as the cosmos , the world, or nature. Observations of earlier stages in the development of the universe, which can be seen at great distances, suggest that the universe has been governed by the same physical laws and constants throughout most of its extent and history. Some physicists have speculated that the universe is one among a numerous number of universes in the multiverse theory. Galaxies are massive, gravitationally bound system that consists of stars and stellar remnants, an interstellar medium of gas dust, and an important but poorly understood component tentatively dubbed dark matter. The name is from the Greek word galaxias, literally meaning "milky", a reference to the Milky Way galaxy. Galaxies may contain many star systems, star clusters, and various interstellar clouds. The Sun is one of the stars in the Milky Way galaxy ; the Solar System includes the Earth and all the other objects that orbit the Sun. Historically, galaxies have been categorized according to their apparent shape usually referred to as their visual morphology. A common form is the elliptical galaxy, which has an ellipse-shaped light profile. Spiral galaxies are disk-shaped assemblages with dusty, curving arms. Galaxies with irregular or unusual shapes are known as irregular galaxies, and typically result from disruption by the gravitational pull of neighboring galaxies. Such interactions between nearby galaxies, which may ultimately result in galaxies merging, may induce episodes of significantly increased star formation, producing what is called a starburst galaxy. Small galaxies that lack a coherent structure could also be referred to as irregular galaxies. Stars are massive, luminous balls of plasma held together by gravity. At the end of its lifetime, a star can also contain a proportion of degenerate matter. The nearest star to Earth is the Sun, which is the source of most of the energy on Earth. Other stars are visible from Earth during the night when they are not outshone by the Sun or blocked by atmospheric phenomena. Historically, the most prominent stars on the celestial sphere were grouped together into constellations and asterisms, and the brightest stars gained proper names. Extensive catalogues of stars have been assembled by astronomers, which provide standardized star designations. Almost all naturally occurring elements heavier than helium were created by stars, either via stellar nucleosynthesis during their lifetimes or by supernova nucleosynthesis when stars explode. Astronomers can determine the mass , age, chemical composition and many other properties of a star by observing its spectrum, luminosity and motion through space. The total mass of a star is the principal determinant in its evolution and eventual fate. Other characteristics of a star are determined by its evolutionary history, including diameter, rotation, movement and temperature. A plot of the temperature of many stars against their luminosities, known as a Hertzsprung-Russell diagram H? R diagram , allows the age and evolutionary state of a star to be determined. A star begins as a collapsing cloud of material composed primarily of hydrogen, along with helium and trace amounts of heavier elements. Once the stellar core is sufficiently dense, some of the hydrogen is steadily converted into helium through the process of nuclear fusion. Once the hydrogen fuel at the core is exhausted, those stars having at least 0. The star then evolves into a degenerate form, recycling a portion of the matter into the interstellar environment, where it will form a new generation of stars with a higher proportion of heavy elements. Universe galaxies and stars is primarily at website about the universe. However, as so many of our surfers have asked for other subjects, universe, galaxies and stars has decided to expand our content. We hope, at universe, galaxies and stars to create a website packed with interesting information. To reflect this, universe, galaxies and stars might under go a name change soon. We hope to bring all of you, a comprehensive website packed with feature rich knowledge about a wide and varied range of topics. However, our commitment to universe subjects will not suffer as a result. The universe, galaxies and stars will still head

our program of dedicated information. But, as we are sure you are aware, just concentrating on the one subject can get a little boring. As the philosopher once said, variety is the spice of life! With this in mind, we hope to chose content that expands the imagination. We want to make our surfers think, to question and understand the extent of knowledge out there. But, in the mean time, why not have a look in the feature-paced pages of our website and include a link so others can experience the great content available.

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4: Galaxyle - Planets. Stars. Galaxies and moreâ€¦

Planets, Stars, and Galaxies is the space book that pushes the boundaries of man's ultimate frontier. The engaging, educational text, written in collaboration with National Geographic experts, includes the latest discoveries about our universe; while specially commissioned artwork by the author illuminates page after page.

However, in the past, some satellites remained unnamed for surprisingly long periods after their discovery. See Naming of moons for a history of how some of the major satellites got their current names. Galileo referred to the Galilean moons as I through IV counting from Jupiter outward , in part to spite his rival Simon Marius , who had proposed the names now adopted, after his own proposal to name the bodies after members of the Medici family failed to win currency. Similar numbering schemes naturally arose with the discovery of moons around Saturn and Mars. Although the numbers initially designated the moons in orbital sequence, new discoveries soon failed to conform with this scheme e. The unstated convention then became, at the close of the 19th century, that the numbers more or less reflected the order of discovery, except for prior historical exceptions see the Timeline of discovery of Solar System planets and their moons. Geological and geographical features[edit] Main article: Planetary nomenclature In addition to naming planets and satellites themselves, the individual geological and geographical features such as craters, mountains, and volcanoes, on those planets and satellites also need to be named. In the early days, only a very limited number of features could be seen on other Solar System bodies other than the Moon. Craters on the Moon could be observed with even some of the earliest telescopes, and 19th-century telescopes could make out some features on Mars. Jupiter had its famous Great Red Spot , also visible though early telescopes. In the IAU was formed, and it appointed a committee to regularize the chaotic lunar and Martian nomenclatures then current. Much of the work was done by Mary Adela Blagg , and the report Named Lunar Formations by Blagg and Muller , was the first systematic listing of lunar nomenclature. These works were adopted by the IAU and became the recognized sources for lunar nomenclature. The Martian nomenclature was clarified in , when a committee of the IAU recommended for adoption the names of albedo features bright, dark, or colored observed through ground-based telescopes IAU, These names were based on a system of nomenclature developed in the late 19th century by the Italian astronomer Giovanni V. Schiaparelli and expanded in the early 20th century by Eugene M. Antoniadi , a Greek-born astronomer working at Meudon , France. However, the age of space probes brought high-resolution images of various Solar System bodies, and it became necessary to propose naming standards for the features seen on them. With the discovery in of the first body found to cross the orbit of Mars, a different choice was deemed appropriate, and Eros was chosen. This started a pattern of female names for main-belt bodies and male names for those with unusual orbits. As more and more discoveries were made over the years, this system was eventually recognized as being inadequate and a new one was devised. Currently, the main responsibility for designating and naming minor planets lies with the Committee for Small Body Nomenclature CSBN , which is composed of 15 people. This will happen after an observation interval of two to three months. Thus for instance, KX76 was given the name Ixion and is now called Ixion. The name becomes official after its publication in the Minor Planet Circular with a brief citation explaining its significance. This may be a few years after the initial sighting, or in the case of "lost" asteroids , it may take several decades before they are spotted again and finally assigned a designation. If a minor planet remains unnamed ten years after it has been given a designation, the right to name it is given also to identifiers of the various apparitions of the object, to discoverers at apparitions other than the official one, to those whose observations contributed extensively to the orbit determination, or to representatives of the observatory at which the official discovery was made. The CSBN has the right to act on its own in naming a minor planet, which often happens when the number assigned to the body is an integral number of thousands. Thus, the overwhelming majority of asteroids currently discovered are not assigned formal names. Under IAU rules, names must be pronounceable, preferably one word such as Annefrank , although exceptions are possible such as James Bond , and since , names are limited to a maximum of sixteen characters, including spaces and hyphens. Letters with diacritics are accepted, although in English the diacritical marks are usually omitted in

everyday usage. Military and political leaders are unsuitable unless they have been dead for at least years. Names of pet animals are discouraged, but there are some from the past. Names of people, companies or products known only for success in business are not accepted, as well as citations that resemble advertising. Asteroids at Lagrangian point L4 are named after Greek characters such as Achilles , whilst asteroids at L5 are named after Trojans such as Priamus. Trans-Jovian minor planets crossing or approaching the orbit of a giant planet , but not in a stabilizing resonance are named for centaurs such as Chiron. Classical Kuiper belt objects are given mythological names not necessarily from Greek or Roman mythology associated with creation such as Quaoar. Before any systematic naming convention was adopted, comets were named in a variety of ways. In the early 20th century, the convention of naming comets after their discoverers became common, and this remains today. A comet is named after its first independent discoverers, up to a maximum of three names, separated by hyphens. Until , the systematic naming of comets the "Old Style" involved first giving them a provisional designation of the year of their discovery followed by a lower case letter indicating its order of discovery in that year e. In , more than 26 comets were discovered, so the alphabet was used again with a "1" subscript, very much like what is still done with asteroids an example is Comet Skorichenkoâ€"George , e1. The record year was , which went as high as h1. Once an orbit had been established, the comet was given a permanent designation in order of time of perihelion passage, consisting of the year followed by a Roman numeral. For example, Comet Bennett i became II. To exemplify, the fourth comet discovered in the second half of February would be designated D4. Some comets were first spotted as minor planets, and received a temporary designation accordingly before cometary activity was later discovered.

5: Universe, Galaxies And Stars - Astronomy And Space News.

This is my seventh video about the size of our universe. Here, the size of the well-known objects from our night sky are compared to each other.

6: Star Names | Planet Baby Names | Baby Names

The book "Planets, Stars, and Galaxies A Visual Encyclopedia of Our Universe is about a basic introduction to the known universe. This book contains information about the solar system and how the cycle of our sun is working.

7: List of galaxies - Wikipedia

Galaxies, stars and planets. This free course is available to start right now. Review the full course description and key learning outcomes and create an account and enrol if you want a free statement of participation.

8: ASTRO Syllabus | Astronomy Planets, Stars, Galaxies, and the Universe

Start studying Planets, Stars, Asteroids, Meteoroids, Comets, and Galaxies. Learn vocabulary, terms, and more with flashcards, games, and other study tools.

9: Course Home Page | Astronomy Planets, Stars, Galaxies, and the Universe

The universe is commonly defined as the totality of everything that exists - including all physical space, time, matter and energy, the planets, stars, galaxies, and the contents of intergalactic space, although this usage may differ with the context.

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