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The license may not give you all of the permissions necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. Page 1 HP Pavilion dm3 Entertainment PC Maintenance and Service Guide... Page 2 Inc. SD Logo is a trademark of its proprietor. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. Page 3 Safety warning notice WARNING! To reduce the possibility of heat-related injuries or of overheating the computer, do not place the computer directly on your lap or obstruct the computer air vents. Use the computer only on a hard, flat surface. Do not allow another hard surface, such as an adjoining optional printer, or a soft surface, such as pillows or rugs or clothing, to block airflow. Page 4 Safety warning notice... Table of contents 1 Product description ... 1 2 External component identification ... 5 Top components ... 5 Display components ... 5 Keys ... 6 Lights ... 7 TouchPad components ... 8 Front components ... 9 Left-side components ... 9 Right-side components ... 9 Rear components ... 32 Serial number label ... 32 Computer feet ... 33 Battery ... 34 SIM ... 35 Hard drive ... 36 Memory module ... 39 RTC battery ... 41 Keyboard ... 42 Top cover ... 45 Speaker assembly ... 48 Mini system board (left) ... Page 7 13.3-inch display specifications ... 84 Hard drive specifications ... 85 External Blu-ray ROM DVD±RW SuperMulti Double-Layer Drive specifications ... 86 External DVD±RW and CD-RW SuperMulti Double-Layer Combo Drive specifications ... 87 7 Backup and recovery ... 88 Creating recovery discs ... 89 Backing up your information ... Page 8 viii... Graphics Panels Memory Description HP Pavilion dm3 Entertainment PC Intel Pentium® U5400 (1.2 GHz, 3M L3 cache) UMA Intel Pentium U5400 (1.2 GHz, 3M L3 cache) Discrete Intel Core i3-330UM (1.2 GHz, 3M L3 cache) UMA Intel Core i3-330UM (1.2 GHz, 3M L3 cache) Discrete Intel Dual Core i5-430UM (1.2 GHz SC turbo up to 1.73GHz, 3M L3 cache) Page 10 Chapter 1 Product description Description Supports 9.5-mm, 6.35-cm (2.5-inch) hard drives ● Serial ATA (SATA) ● HP ProtectSmart Hard Drive Protection Customer-accessible 640-GB, 7200-rpm 640-GB, 5400-rpm 500-GB, 7200-rpm 320-GB, 7200-rpm 250-GB, 7200-rpm 160-GB, 7200-rpm Support for 128-GB SSD in single HDD configurations Supports only external optical drives ●... Page 11 Category External media card Form Keyboard/pointing devices Power requirements Security Operating system Description Digital Media Slot, supporting the following optional digital card formats: ● MultiMediaCard (MMC) ● Secure Digital (SD) Memory Card ● Secure Digital High Capacity (SDHC) Memory Card ●... Page 12 Category Serviceability Chapter 1 Product description Description ● Windows 7 Professional (64-bit) Microsoft® Office preinstalled on: ● Windows 7 Home Basic (32-bit and 64-bit) ● Windows 7 Home Premium (32-bit and 64-bit) ● Windows 7 Professional (32-bit and 64-bit) End-user replaceable parts: AC adapter Battery (system) Hard drive... External component identification Top components Display components Item Component Internal microphones (2) Webcam light Webcam Function Record sound. On—The webcam is in use. Records video and captures still photographs. Top components... Keys Item Component Windows logo key Windows applications key Action keys Chapter 2 External component identification Function Displays system information when pressed in combination with the key. Executes frequently used system functions when pressed in combination with an arrow key or the key. Lights from Component Caps lock light Mute light Wireless light TouchPad light Description On—Caps lock is on. On—Computer sound is off. ● White—An integrated wireless device, such as a wireless local area network (WLAN) device and/or a Bluetooth® device, is on. ●... TouchPad components Item Component TouchPad light Left TouchPad button TouchPad scroll zone Right TouchPad button Chapter 2 External component identification Function ● Off—TouchPad is enabled. ● Amber—TouchPad is disabled. Functions like the left button on an external mouse. Scrolls up or down. Functions like the right button on an external mouse. Front components Item Component Speakers (2) Left-side components Item Component Security cable slot Vent External monitor port HDMI port USB port Drive light Power light Power button Function Attaches an optional security cable to the computer. NOTE: The security cable is designed to act as a deterrent, but it might not prevent the computer from being mishandled or stolen. Right-side components Item Component Digital Media Slot (select models only) Audio-out (headphone) jack Audio-in (microphone) jack USB ports (2) RJ-45 (network) jack (optional) AC adapter light Power connector Chapter 2 External component identification Function Supports the following optional digital card formats: ●... Bottom components Item Component Hard drive bay Battery bay Battery release latch Vent Function Holds the hard drive and wireless wide area network (WWAN) module (select models only). NOTE: To prevent an unresponsive system, replace the wireless module only with a wireless module authorized for use in the computer by the governmental agency that regulates wireless devices in your country or region. Page 20 Item Component Memory module compartment Speakers (2) Chapter 2 External component identification Function Contains the memory module slot (2 slots on select models) and a wireless LAN module. NOTE: To prevent an unresponsive system, replace the wireless module only with a wireless module authorized for use in the computer by the governmental agency that regulates wireless devices in your country or region. Wireless antennas NOTE: Your computer might look different from the illustration in this section Item Component WWAN antennas (2)*(select models only) WLAN antennas (2)* *The antennas are not visible from the outside of the device. For optimal transmission, keep the areas immediately around the antennas free from obstructions. Additional hardware components Item Component Power cord* AC adapter Battery** *Batteries and power cords vary in appearance by region or country. Chapter 2 External component identification Function Connects the AC adapter. Converts AC power to DC power. Powers the computer when the computer is not plugged into external power. Illustrated parts catalog Serial number label When ordering parts or requesting information, provide the computer serial number and model description provided on the serial number label. (1) Product name—This is the product name affixed to the front of the computer. (2) Serial number (s/n)—This is an alphanumeric identifier that is unique to each product. Computer major components Chapter 3 Illustrated parts catalog... Page 25 Item Description Display assembly 33.8-cm (13.3-in) HD LED Brightview SVA NOTE: For more information on the display assembly internal component spare part information, see Keyboard (includes keyboard cable) for use in the: United States French Canada Thailand Japan Taiwan South Korea Backlit Keyboard (includes keyboard cable) for use in the: United States French Canada... Page 26 Item Description Intel Core i3-330UM (1.2 GHz, 3M L3 cache) UMA Intel Core i3-330UM (1.2 GHz, 3M L3 cache) Discrete Intel Core i3-330UM (1.2 GHz, 3M L3 cache) Discrete Intel Dual Core i5-430UM (1.2 GHz SC turbo up to 1.73GHz, 3M L3 cache) Discrete Intel Core i3-380UM (1.33 GHz, 3M L3 cache) UMA Intel Core i3-380UM (1.33 GHz, 3M L3 cache) Discrete Intel Core i5-470UM (1.33 GHz SC turbo, 3M L3 cache) Discrete (1) Display assembly components Item Description Display hinge covers Display bezel (includes WLAN and WWAN antennas) Display hinges (with hinges) Webcam module 33.8-cm (13.3-in) HD LED Brightview SVA panel Spare part number 626637-001 619499-001 619477-001 619549-001 619448-001 Display assembly components... Page 28 Item Description Display cable (includes microphone) Wireless antenna (includes WLAN and WWAN antenna transceivers and cable) Display back cover (includes logo) for use with: Display EMI shield (not illustrated) Chapter 3 Illustrated parts catalog Spare part number 619439-001 619435-001 619436-001 626736-001... Plastics kit Item Description Plastics Kit Memory module compartment cover Hard drive bay access cover Spare part number 619450-001 Plastics kit... Mass storage devices Item Description Hard drive (includes hard drive bracket and Mylar cover) 640 GB, 7200 RPM 500 GB, 7200 RPM 320 GB, 7200 RPM 250 GB, 7200 RPM 160 GB, 7200 RPM 640 GB INTERNAL, 7200 RPM SSD 160 GB Hard Drive Hardware Kit (not illustrated)... Miscellaneous parts Description AC adapter AC adapter (for use in emerging markets) Power cord for use in: Australia India Japan South Korea Taiwan Thailand the People's Republic of China the United Kingdom and Singapore the United States Cable Kit ● Power cable ●... Page 32 Spare part Description number 490371-291 Power cord for use in Japan 490371-AA1 Power cord for use in the People's Republic of China 490371-AB1 Power cord for use in Taiwan 490371-AD1 Power cord for use in South Korea 490371-D61 Power cord for use in India 584383-001 DVD±RW and CD-RW SuperMulti Double-Layer Combo Drive with LightScribe external drive (includes bezel, bracket, and cable) Page 33 Spare part Description number 619443-001 320-GB, 7200-rpm hard drive (includes hard drive bracket and Mylar cover) 619444-001 500-GB, 7200-rpm hard drive (includes hard drive bracket and Mylar cover) 619445-001 640-GB, 7200-rpm hard drive (includes hard drive bracket and Mylar cover) 619446-001 Hard Drive Hardware Kit (includes hard drive bracket, Mylar cover, and hard drive screws) 619447-001... Page 34 Spare part Description number 626735-001 Heat sink for use only with computer models equipped with discrete graphics subsystem 626736-001 Display EMI shield 626737-001 Display hinge covers 626739-001 Right mini system board 626740-001 Left mini system board 626742-001 Power button board 626742-001... Removal and replacement procedures Preliminary replacement requirements Tools required Use the following tools to complete the removal and replacement procedures. ● Magnetic screwdriver ● Phillips P0 and P1 screwdrivers ● Flat-bladed screwdriver Service considerations The following sections include some of the considerations that you should keep in mind during disassembly and assembly procedures. Cables and connectors CAUTION: When servicing the computer, be sure that cables are placed in their proper locations during the reassembly process. Improper cable placement can damage the computer. Cables must be handled with extreme care to avoid damage. Apply only the tension required to unseat or seat the cables during removal and insertion. Grounding guidelines Electrostatic discharge damage Electronic components are sensitive to electrostatic discharge (ESD). Circuitry design and structure determine the degree of sensitivity. Networks built into many integrated circuits provide some protection, but in many cases, ESD contains enough power to alter device parameters or melt silicon junctions. Packaging and transporting guidelines Follow these grounding guidelines when packaging and transporting equipment: ● To avoid hand contact, transport products in static-safe tubes, bags, or boxes. ● Protect ESD-sensitive parts and assemblies from direct contact. ● Keep ESD-sensitive parts in their containers until the parts arrive at static-free workstations. Equipment guidelines Grounding equipment must include either a wrist strap or a foot strap at a grounded workstation. ● When seated, wear a wrist strap connected to a grounded system. Wrist straps are flexible straps with a minimum of one megohm ±10% resistance in the ground cords. To provide proper ground, wear a strap snugly against the skin at all times. Component replacement procedures This chapter provides removal and replacement procedures. There are as many as 36 screws, in 7 different sizes, that must be removed, replaced, or loosened when servicing the computer. Make special note of each screw size and location during removal and replacement. Computer feet Description Rubber Kit The computer feet are adhesive-backed rubber pads. The feet attach to the base enclosure in the locations illustrated below. Spare part number 619452-001 Component replacement procedures... Battery Description 6 cell, 2.80 Ah, 62 Wh Before disassembling the computer: Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn on the computer, and then shut it down through the operating system. NOTE: The SIM is provided by the end user as a security measure for the WWAN module. The SIM should be removed, placed into a static-dissipative container, and then replaced when the computer is reassembled. Before removing the SIM: Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system. Hard drive NOTE: The hard drive spare part kit includes a hard drive bracket and hard drive connector. The hard drive bracket and hard drive connector, as well as the hard drive bracket screws, are also available in the Hard Drive Hardware Kit. Description 640 GB, 7200 rpm 500 GB, 7200 rpm... Page 45 Lift the left side of the hard drive cover and remove the cover (2). The hard drive cover is included in the plastics kit, spare part number 619450-001. Remove the two Phillips PM2.5×4.0 screws (1) that secure the hard drive to the computer. Use the mylar tab to lift the hard drive out of the computer at an angle (2). Page 46 To replace the hard drive bracket, remove the four Phillips PM3.0×4.0 screws (1) that secure the hard drive bracket to the hard drive Grasp the two attached Mylar tabs and pull the bracket straight up to remove it from the hard drive (2). Memory module Description 1 GB, 1066 MHz DDR3 2 GB, 1066 MHz DDR3 4 GB, 1066 MHz DDR3 Before installing the memory module: Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn on the computer, and then shut it down through the operating system. Page 48 Remove the module (2) by pulling it away from the slot at an angle. NOTE: Memory modules are designed with a notch (3) to prevent incorrect insertion into the memory module slot. Reverse this procedure to install a memory module. Chapter 4 Removal and replacement procedures... RTC battery Description RTC battery Before removing the RTC battery: Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn on the computer, and then shut it down through the operating system. Disconnect all external devices connected to the computer. Disconnect the power from the computer by first disconnecting the power cord from the AC outlet and then disconnecting the AC adapter from the computer. Keyboard Description For use in French Canada For use in Japan For use in the South Korea For use in Taiwan For use in Thailand For use in the United States For use in French Canada with backlight For use in Japan with backlight For use in Taiwan with backlight For use in Thailand with backlight... Page 51 Turn the computer display-side up with the front toward you. Open the computer as far as possible. Release the tabs along the top (1) edge of the keyboard using a thin-bladed screwdriver. Lift the top edge of the keyboard, and set the keyboard back towards the display (2). Release the zero insertion force (ZIF) connector (1) to which the keyboard cable is attached and disconnect the keyboard cable (2) from the system board. Page 52 Reverse this procedure to install the keyboard. Chapter 4 Removal and replacement procedures... Top cover Description Top cover (includes TouchPad) Before removing the top cover: Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn on the computer, and then shut it down through the operating system. Disconnect all external devices connected to the computer. Page 54 Remove the three Phillips PM2.5×6.0 screw that secures the top cover to the computer. Release the toughpad ZIF connector (1). Chapter 4 Removal and replacement procedures... Page 55 Lift the rear edge of the top cover (1) until the top cover disengages from the base enclosure. Remove the top cover (2). NOTE: The TouchPad is glued to the top cover and is included with the top cover spare part. Reverse this procedure to install the top cover. Speaker assembly (includes cable) Before removing the speaker assembly: Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn on the computer, and then shut it down through the operating system. Disconnect all external devices connected to the computer. Page 57 Reverse this procedure to install the speaker assembly. Component replacement procedures... Mini system board (left) Before removing the mini system board: Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn on the computer, and then shut it down through the operating system. Disconnect all external devices connected to the computer. Page 59 Lift up and remove the mini system board (4). Reverse this procedure to install the mini system board (left). Component replacement procedures... Mini system board (right) Description Mini system board (right) Before removing the mini system board: Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system. Disconnect all external devices connected to the computer. Page 61 Lift up and remove the mini system board (4). Reverse this procedure to install the mini system board (right). Component replacement procedures... WLAN module Description Broadcom 802.11 bgn WLAN + Bluetooth Combo card Broadcom 802.11 bgn WLAN card Atheros 802.11 bgn WLAN card Ralink 802.11 bgn WLAN + Bluetooth Combo card Before removing the WLAN module: Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system. Disconnect all external devices connected to the computer. WLAN module Description Broadcom 802.11 bgn WLAN + Bluetooth Combo card Broadcom 802.11 bgn WLAN card Atheros 802.11 bgn WLAN card Ralink 802.11 bgn WLAN + Bluetooth Combo card Before removing the WLAN module: Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn on the computer, and then shut it down through the operating system. Page 64 Remove the WLAN module (3) by pulling it away from the slot at an angle. CAUTION: To prevent an unresponsive system, replace the wireless module only with a wireless module authorized for use in the computer by the governmental agency that regulates wireless devices in your country or region. WWAN module Description HSPA EV-DO Birlion MiniCard UNDP WWAN module (optional) Before removing the WWAN module: Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn on the computer, and then shut it down through the operating system. Disconnect all external devices connected to the computer. Page 66 Remove the WWAN module (3) by pulling it away from the slot at an angle. CAUTION: To prevent an unresponsive system, replace the wireless module only with a wireless module authorized for use in the computer by the governmental agency that regulates wireless devices in your country or region. Power button board Description Power button board Before removing the power button board: Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system. Disconnect all external devices connected to the computer. Page 68 Lift out and remove the power button board (4). Reverse this procedure to install the power button board. Chapter 4 Removal and replacement procedures... Display assembly Description 33.8-cm (13.3-in) HD LED BrightView display assembly Before removing the display assembly: Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn on the computer, and then shut it down through the operating system. Disconnect all external devices connected to the computer. Page 70 Pull the WLAN and WWAN antenna cables (2) from the clip in the routing channel leading to the display hinge (3). CAUTION: Support the display assembly when removing the display screws in the following steps. Failure to support the display assembly can result in damage to the assembly and display hinge. Page 71 Lift the display panel (1) straight up to remove it. Reverse this procedure to install the display assembly. Component replacement procedures... Page 72 To replace any of the display assembly internal components, remove the following screws covers and screws: (1) Two rectangle mylar screw covers on the display bezel bottom edge (2) Two round mylar screw covers on the display bezel bottom edge (3) Two Phillips PM2.5×4.0 screws The display screw covers are included in the rubber kit, spare part number 619452-001. Page 73 Lift up and remove the display panel (3). The display panel is available using spare part number 619448-001. To replace the webcam module (select models only), remove the two Phillips 2.0×3.0 (1) screws. Disconnect the webcam module cable (2) from the webcam module, and remove the webcam module... Page 74 Lift up to remove the antenna transceivers (3). The wireless antenna transceivers with cable is available using spare part number 619435-001.. Reverse this procedure to install the display assembly internal components. To replace the WWAN antenna transceivers, lift up on the silver transceiver and release the adhesive material from the display cover (1). Fan/heat sink assembly Description Fan/heat sink assembly for use only with computer models with UMA graphics subsystem memory Fan/heat sink assembly (includes replacement thermal material) for use only with computer models with discrete graphics subsystem memory Before removing the fan/heat sink assembly: Shut down the computer. Page 76 Disconnect the fan cable from the system board. Follow the sequence embossed on heat sink to loosen the four Phillips PM2.5×7.0 captive screws (1-4) that secure the fan/heat sink assembly to the system board (select models equipped with graphics subsystem memory only to reduce heat). Loosen the four Phillips PM2.5×7.0 captive screws that secure the fan/heat sink assembly to the system board, NOTE: Due to the adhesive quality of the thermal material located between the fan/heat sink assembly and system board components, it might be necessary to move the fan/heat sink assembly side to side to detach the assembly. Page 77 Remove the fan/heat sink assembly (5) by lifting straight up. NOTE: The following steps apply only to computer models equipped with graphics subsystems having discrete memory. Turn the system board right-side up, with the front toward you. Component replacement procedures... Page 78 Disconnect the fan cable from the system board. Loosen the four Phillips captive screws (1-4) and two Phillips spring-loaded captive screws (5- 6) that secure the fan/heat sink assembly to the system board. NOTE: Due to the adhesive quality of the thermal material located between the fan/heat sink assembly and system board components, it might be necessary to move the fan/heat sink assembly side to side to detach the assembly. Page 79 Remove the fan/heat sink assembly (7) by lifting straight up. Reverse this procedure to install the fan/heat sink assembly. System board Description System board NOTE: The system board spare part kit includes UMA or discrete graphics subsystem memory and replacement thermal material. Description Intel Pentium U5400 (1.2 GHz, 3M L3 cache) UMA Intel Pentium U5400 (1.2 GHz, 3M L3 cache) Discrete Intel Core i3-330UM (1.2 GHz, 3M L3 cache) UMA Intel Core i3-330UM (1.2 GHz, 3M L3 cache) Discrete Intel Dual Core i5-430UM (1.2 GHz SC turbo up to 1.73GHz, 3M L3 cache) Intel Core i3-380UM (1.33 GHz, 3M L3 cache) Page 82 Remove the system board. Turn the computer upright with the right side toward you. Remove the two Phillips PM2.5×4.0 (1) screws that secure the system board to the base enclosure. Remove the hard drive cable (3) from the bottom of the system board. Setup Utility (BIOS) Starting Setup Utility Setup Utility is a ROM-based information and customization utility that can be used even when your Windows operating system is not working. The utility reports information about the computer and provides settings for startup, security, and other preferences. Using Setup Utility Changing the language of Setup Utility The following procedure explains how to change the language of Setup Utility. If Setup Utility is not already running, begin at step 1. If Setup Utility is already running, begin at step 2. Open Setup Utility by turning on or restarting the computer. Display system information The following procedure explains how to display system information in Setup Utility. If Setup Utility is not open, begin at step 2. If Setup Utility is open, begin at step 2. Open Setup Utility by turning on or restarting the computer. Exiting Setup Utility You can exit Setup Utility with or without saving changes. ● To exit Setup Utility and save your changes from the current session: If the Setup Utility menus are not visible, press arrow key to select Exit > Exit Saving Changes, and then press enter. 6 . System Configuration menu Select Language (select models only) Virtualization Technology (select models only) Processor C6 State (select models only) LAN Power Saving Card Reader/1394 Power Saving (select models only) Fan Always on Action Keys Mode Boot Options Diagnostics menu Select Primary Hard Disk Self Test... Page 88 Select Secondary Hard Disk Self Test (on select models only) Memory Test Chapter 5 Setup Utility (BIOS) To do this Run a comprehensive self-test on the system memory. Run a diagnostic test on the system memory. Updated versions of the BIOS might be available on the HP Web site. Most BIOS updates on the HP Web site are packaged in compressed files called SoftPaqs. Some download packages contain a file named Readme.txt, which contains information regarding installing and troubleshooting the file. Page 90 To download a BIOS update: Access the page on HP Web site that provides software for the computer: Select Start > Help and Support > Maintain. Follow the instructions on the screen to identify the computer and access the BIOS update you want to download. Specifications Computer specifications Dimensions Length Width Height (front to back) Weight Input power Operating voltage Operating current Temperature Operating Non operating Relative humidity Operating Nonoperating Maximum altitude (unpressurized) Operating Nonoperating NOTE: Applicable product safety standards specify thermal limits for plastic surfaces. 13.3-inch display specifications Dimensions Height Width Diagonal Number of colors Contrast ratio Brightness Pixel resolution Pitch Format Configuration Backlight Total power consumption Viewing angle Chapter 6 Specifications Metric U.S. 16.5 mm 6.5 in 29.34 mm 11.6 in 33.66 mm 13.3 in Up to 16.8 million 500:1 (typical) 200 nits (typical) Hard drive specifications Dimensions Height (tall) Weight Interface type Transfer rate Security Seek times (typical read, including settin) Single track Average Maximum Logical blocks Disc rotational speed Operating temperature *1 GB = 1 billion bytes when referring to hard drive storage capacity. Actual accessible capacity is less. Actual drive specifications may differ slightly. External Blu-ray ROM DVD±RW SuperMulti Double-Layer Drive specifications Applicable disc Access time Random Cache buffer Data transfer rate 2X BD-RAM 8X DVD 16X CD-R 16X CD-RW Chapter 6 Specifications Read Write BD-ROM, BD-ROM-DL, BD-R, DVD-RAM (Ver.2), DVD+R, DVD-R, DL, BD-RE, BD-RE-DL, DVD-R, CD-R, and CD-ROM DVD-ROM, DVD+R, DVD-R-DL, DVD+RW, DVD-R, DVD-R-DL,... External DVD±RW and CD-RW SuperMulti Double-Layer Combo Drive specifications Applicable disc Access time Random Cache buffer Data transfer rate 24X CD-ROM 8X DVD 24X CD-R 16X CD-RW 8X DVD+R 4X DVD-R 4X DVD-RW 2.4X DVD+R/9i 5X DVD-RAM Transfer mode External DVD±RW and CD-RW SuperMulti Double-Layer Combo Drive specifications Read Write... Start, right-click Computer, click Manage, and then click Disk Management. If the partition is present, an HP Recovery drive is listed in the window. If a recovery partition is not present, use the recovery discs you created. Creating recovery discs HP recommends creating recovery discs to be sure that you can restore the system to its original factory state if you experience serious system failure or instability. Create these discs after setting up the computer for the first time. Backing up your information As you add new software and data files, back up the system on a regular basis to maintain a reasonably current backup. Back up the system at the following times: ● At regularly scheduled times NOTE: Set reminders to back up your information periodically. Using Windows Backup and Restore To create a backup using Windows Backup and Restore: Be sure that the computer is connected to AC power before you start the backup process. NOTE: The backup process might take over an hour, depending on the file size and the speed of the computer. Follow the on-screen instructions. Performing a recovery NOTE: You can recover only files that you have previously backed up. HP recommends using HP Recovery Manager to create a set of recovery discs (entire drive backup) as soon as you set up your computer. Recovering from the dedicated recovery partition (select models only) NOTE: Computers with an SSD may not have a recovery partition. You will not be able to recover your operating system and software. Connector pin assignments Audio-in (microphone) Audio-out (headphone) External monitor Chapter 8 Connector pin assignments Signal Audio signal in Audio signal in Ground Signal Audio out, left channel Audio out, right channel Ground... Page 103 Signal Red analog Green analog Blue analog Not connected Ground Ground analog Ground analog Ground analog +5 VDC Ground Monitor detect sync Vertical sync DDC 2B data Horizontal sync Vertical sync DDC 2B clock External monitor... HDMI Chapter 8 Connector pin assignments Signal TMDS data 2+ TMDS data 2 shield TMDS data 2- TMDS data 1+ TMDS data 1 shield TMDS data 1- TMDS data 0+ TMDS data 0 shield TMDS data 0- TMDS clock+ Signal TMDS clock shield TMDS clock- Not connect... RJ-45 (network) Universal Serial Bus Signal Transmit + Transmit - Receive + Unused Unused Receive - Unused Unused Signal +5 VDC Data Data + Ground NOTE: Power cord set requirements The wide-range input feature of the computer permits it to operate from any line voltage from 100 to 120 volts AC, or from 220 to 240 volts AC The 3-conductor power cord set included with the computer meets the requirements for use in the country or region where the equipment is purchased. Requirements for specific countries and regions Country/region Australia Austria Belgium Canada Denmark Finland France Germany Italy Japan The Netherlands Norway The People's Republic of China South Korea Sweden Switzerland Taiwan The United Kingdom The United States The flexible cord must be Type HO5VV-F, 3-conductor, 1.0-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used. When you remove these components, handle them carefully. NOTE: Materials Disposal. This HP product contains mercury in the backlight in the display assembly that might require special handling at end-of-life. Disposal of mercury may be regulated because of environmental considerations. For disposal or recycling information, contact your local authorities, or see the Electronic Industries Alliance (EIA) Web site at . Page 109 Perform the following steps: Remove the screws (1) and screws (2) that secure the display bezel to the display assembly. Lift up and out on the left and right inside edges (1) and the top and bottom inside edges (2) of the display bezel until the bezel disengages from the display assembly. Page 110 Disconnect all display panel cables (1) from the display inverter and remove the inverter 2. Remove all screws (1) that secure the display panel assembly (2) from the display enclosure. Remove the display panel assembly (2) from the display enclosure. Turn the display panel assembly upside down. Remove all screws that secure the display panel frame to the display panel. Page 111 Remove the display panel frame (2) from the display panel. Remove the screws (1) that secure the backlight cover to the display panel. Lift the top edge of the backlight cover (2) and swing it outward. Remove the backlight cover. Turn the display panel right-side up. Page 112 Remove the backlight cables (1) from the clip (2) in the display panel. Turn the display panel upside down. Remove the backlight frame from the display panel. WARNING! The backlight contains mercury. Exercise caution when removing and handling the backlight to avoid damaging this component and causing exposure to the mercury. Remove the backlight from the backlight frame. Page 113 Disconnect the display cable (1) from the LCD panel. Remove the screws (2) that secure the LCD panel to the display rear panel. Release the tape (4) that secures the LCD panel to the display rear panel. Remove the LCD panel Index AC adapter, spare part numbers 23, 24 action keys 6 additional hardware 14 administrator password 78 antenna removal 65, 66 antennas spare part numbers 24 applications key, Windows 6 audio, product description 2 audio-in jack connector pinout 94 audio-out jack connector pinout 94 base enclosure, spare part number 18, 24... Page 115 external media cards, product description 3 external monitor port connector pinout 94 external optical drive spare part numbers 22 fan/heat sink assembly removal 67 spare part number 67 feet locations 33 spare part number 33 fn key 6 front components 9 graphics, product description 1 hard drive bay 10... Hard drives 2 keyboard 3 memory module 1 operating system 3 optical drives 2 pointing devices 3 ports 3 power requirements 3 processors 1 product name 1 security 3 serviceability 4 webcam 2 wireless 2 removal/replacement preliminaries 27 procedures 32 right-side components 10 RJ-45 (network) jack,... Hi @tubby3232, Welcome to HP Support Community. Thank you for posting your query, I will be glad to help you. Updating the BIOS on your HP laptop can improve performance, fix bugs, and enhance security. Follow these steps carefully. Using HP Support Assistant (Recommended) Open HP Support Assistant in Windows and open it. If not installed, download it from HP's website. Check for Updates click on Updates and look for a BIOS update. If available, follow the on-screen instructions to install it. Restart Your Laptop The system will restart multiple times during the update. Do not turn off your laptop. Manual Update via HP Website Find Your Model Press Windows + R, type msinfo32, and press Enter. Note your System Model and BIOS Version/Date. Download the BIOS Update Go to the HP Software & Driver Downloads page. Enter your laptop model and select BIOS under the list of available updates. If a newer version is available, download it. Install the BIOS Update Run the downloaded BIOS update file (.exe). Follow the on-screen instructions. The system will restart multiple times. BIOS Update via USB (If Windows Doesn't Boot) Prepare a USB Drive (at least 8GB, formatted to FAT32). Download the BIOS file from HP's website. Create a BIOS recovery USB using HP's BIOS Update Utility. Restart your laptop and enter BIOS. Select "Firmware Management" > "BIOS Update" and follow instructions. Note: Keep your laptop plugged in during the update. Do NOT turn off or interrupt the process. If the update fails, try a hard reset (hold power for 15 seconds). I hope this helps. Take care and have a good day. Please mark this post as "Accepted Solution" if you feel my post solved your issue. If you feel my post was helpful click "Yes". Rachel571 HP Support . direless6823, Welcome to HP Support Community. Thank you for posting your query, I will be glad to help you. To download or upgrade the BIOS for your HP desktop with the 8BC8 motherboard, follow these steps: Using HP Support Assistant Open HP Support Assistant: If it's not installed, download it from the HP Support website. Check for Updates: In HP Support Assistant, go to the "Updates available" section under "Software & drivers". Download and Install: If a BIOS update is available, select it and click "Download and install". Manual Update via HP Website Identify Your Product: Find your computer'sproduct name, number, and motherboard/system board ID. Download BIOS Update: Visit the HP Support website and search for your product to find the correct BIOS update. Install the Update: Follow the on-screen instructions to download and install the BIOS update. Updating from BIOS Setup Enter BIOS Setup: Restart your computer and press F10 repeatedly to enter the BIOS setup utility. Check for BIOS Updates: Look for an option in the BIOS menu that provides a way to check for and install updates. If your feel my post solved your issue, it will help others find the solution. Select "Yes" on the bottom left to say "Thanks" for helping! MaxAJ HP Support. Hi @Hassan7701 Welcome to HP Support Community. Thank you for posting your query, I will be glad to help you. Updating the BIOS (Basic Input/Output System) can be a crucial step in improving system stability, compatibility with hardware, or fixing bugs. However, BIOS updates can sometimes cause issues if not done properly. If you're encountering an error while trying to update your BIOS, here are a few common solutions to help you resolve the problem. Steps to Update BIOS Properly: 1. Verify BIOS Version Before attempting to update, make sure you are updating to the latest compatible BIOS version. Check Current BIOS Version: Press Windows + R, type msinfo32, and hit Enter. Look for BIOS Version/Date in the System Information window. This will tell you the current version of your BIOS. 2. Download the Correct BIOS Update Visit the HP Support website: Go to the HP Support website. Enter your model number, HP Pavilion, HP Envy, etc.). Look for the BIOS update section and download the latest version compatible with your device. Check Release Notes: Carefully read the release notes for any specific instructions or prerequisites before updating the BIOS. 3. Create a Backup Before proceeding, back up important data. While BIOS updates are generally safe, there is always a small risk of failure, so it's good to ensure your important files are backed up. 4. Prepare a BIOS Update USB Drive (If Necessary) If you encounter an issue while updating through Windows, you might need to use a bootable USB Drive: Download the BIOS update file from HP's website. Use a tool like Rufus or the HP USB Disk Storage Format Tool to create a bootable USB drive. Place the BIOS update file on the USB drive. Enter BIOS/UEFI Setup: Shut down your laptop. Power it back on and immediately press the Esc or F10 key to enter the BIOS setup. In the BIOS menu, navigate to Tools and select HP BIOS Update. From the options. If you are using a bootable USB, select Update from USB.1 hope this helps. Take care and have a good day. Please mark this post as "Accepted Solution" if the issue is resolved and if you feel this reply was helpful click "Yes". Rachel571 HP Support . Sneha_01- HP support . the free encyclopedia that anyone can edit. 117,922 active editors is English The first UK Phantom on a test flight in 1968 From 1968 to 1992, the United Kingdom used the McDonnell Douglas F-4 Phantom II as one of its principal combat aircraft. The Phantom was procured to serve in both the Royal Navy's Fleet Air Arm and the Royal Air Force (RAF) in several different roles. Most Phantoms operated by the UK were built as a special batch containing a significant amount of British technology. Two variants were initially built: the F-4K was a carrier-based air-defence interceptor for the Fleet Air Arm, while the F-4M was initially used by the RAF for tactical strike and reconnaissance, before transitioning to an air defence role in the 1970s. In the mid-1980s, a third Phantom variant was obtained when fifteen former US Navy F-4J aircraft were purchased to augment the UK's air defences. Although the Fleet Air Arm ceased using the Phantom in 1978, the RAF retained it until 1992, when it was withdrawn as part of a series of post-Cold War defence cuts. (Full article...) Recently featured: Transportation during the 2024 Summer Olympics and Paralympics 1796 Chinese charters Archive By email More featured articles About The aftermath of the Kirkby train crash ... that the train driver in the Kirkby train crash (pictured) was found to have been using his mobile phone before the collision? ... that a tour promoting the EP For Your Validation sold out in ten minutes? ... that Gammarelli, the official tailor of the pope, is one of the oldest family-run businesses in Europe? ... that despite being named in college as the best at his position in the U.S., football player Buster Maddox only appeared in one NFL game? ... that the Doctor Who episode "Lux" is set in Miami, Florida, despite being filmed in Penarth, Wales? ... that Jean-Maximomed Abd-el-Jalil, a Moroccan Franciscan friar, was permitted by the Pope to keep "Muhammad" as his baptismal name? ... that Robert Mugabe's motorcade was known for speeding and killing people? ... that Elizabeth Holtzman's opponent ran an ad saying "maybe I'd like to have her as a daughter, but not as a DA" before her election as the first female Brooklyn District Attorney? ... that fighter pilot Morton D. Magoffin made pilots in his group sprint around an airfield for not saluting him? Archive Start a new article Nominate an article Nicuşor Dan Author Banu Mushtaq and translator Deepa Bhasthi win the International Booker Prize for Heart Lamp. Selected Stories. Nicuşor Dan (pictured) is elected as president of Romania. In the Portuguese legislative election, the Democratic Alliance wins the most seats in parliament. Austria, represented by JJ with the song "Wasted Love", wins the Eurovision Song Contest. A tornado outbreak leaves at least 27 people dead in the Midwestern and Southeastern United States. Ongoing: Gaza war M23 campaign Russian invasion of Ukraine timeline Sudanese civil war timeline Recent deaths: Jim Irsay Yuri Grigorovich Yuri Vladimirov Colton Ford Werenoi Benjamin Ritchie Nominate an article May 27 Manchu Prince Dorgon 1644 – Manchu regent Dorgon (depicted) defeated rebel leader Li Zicheng of the Shun dynasty at the Battle of Shanhai Pass, allowing the Manchus to enter and conquer the capital city of Beijing. 1799 – War of the Second Coalition: Austrian forces defeated the French Army of the Danube, capturing the strategically important Swiss town of Winterthur. 1954 – The security clearance of American nuclear physicist J. Robert Oppenheimer, head of Project Y, was revoked. 1967 – Australians voted overwhelmingly to change the Australian constitution to amend two sections which related to Indigenous Australians in population counts for constitutional purposes and to allow the federal government to make special laws affecting them in states. 1997 – A destructive F5-rated tornado tracked through a subdivision of homes northwest of Jarrell, Texas, killing 27 people. Diego Ramírez de Arellano (d. 1624)Julia Ward Howe (b. 1819)Cilla Black (b. 1943)Gérard Jean-Juste (d. 2009) More anniversaries: May 26 May 27 May 28 Archive By email List of days of the year About Amenomebiki blenda, the Balkan anemone, Grecian windflower, or winter windflower, is a species of flowering plant in the family Ranunculaceae. The species, native to southeast Europe and the Middle East. It grows up to 10 to 15 centimeters (4 to 6 inches) tall and is valued for its daisy-like flowers, which appear in early spring, a time when little else is in flower. The flowers are found in various colors and are readily symmetrical, containing seven or more sepals and petals. This purple A. blanda flower was photographed in Bamberg, Germany. Photograph credit: Reinhold Möller Recently featured: Bluespotted ribbontail ray Black Lives Matter art Germanicus Archive More featured pictures Community portal – The central hub for editors, with resources, links, tasks, and announcements. Village pump – Forum for discussions about Wikipedia itself, including policies and technical issues. Site news – Sources of news about Wikipedia and the broader Wikimedia movement. Teahouse – Ask basic questions about using or editing Wikipedia. Help desk – Ask questions about using or editing Wikipedia. Reference desk – Ask research questions about encyclopedic topics. Content portals – A unique way to navigate the encyclopedia. Wikipedia is written by volunteer editors and hosted by the Wikimedia Foundation, a non-profit organization that also hosts a range of other volunteer projects: CommonsFree media repository MediaWikiWiki software development Meta-WikiWikimedia project coordination WikibooksFree textbooks and manuals WikidataFree knowledge base WikinewsFree-content news WikiquoteCollection of quotations WikisourceFree-content library WikispeciesDirectory of species WikiversityFree learning tools WikivoyageFree travel guide WiktionaryDictionary and thesaurus This Wikipedia is written in English. Many other Wikipedias are available; some of the largest are listed below. 1,000,000+ articles العربية Deutsch Español فارسی Français Italiano Nederlands 日本語 Polski Português Русский Svenska Українська Tiếng Việt 中文 250,000+ articles Bahasa Indonesia Bahasa Melayu Bân-lâm-gú Български Català Čeština Dansk Eesti Ελληνικά Esperanto Euskara עברית Magyar Norsk bokmål Română Simple English Slovenčina Srpski Srpskohrvatski Suomi Türkçe O'zbek 50,000+ articles Asturianu Azərbaycanca Bosanski Frysk Gaeilge Galego Hrvatski Kurdî Latviešu Lietuvių Македонски Norsk nynorsk Shqip Slovenščina Руский Retrieved from "?... This article's text was originally published in 1644" – news · newspapers · books · scholar · JSTOR (August 2016) (Learn how and when to remove this message) Calendar year Years Millennium 2nd millennium Centuries 16th century 17th century 18th century Decades 1620s 1630s 1640s 1650s 1660s Years 1641 1642 1643 1644 1645 1646 1647 vte July 1: The Battle of Colberger Heide is fought between Sweden and Denmark-Norway off of the German coast. July 2: Parliament wins control of northern England from King Charles in the Battle of Marston Moor. 1644 by topic Arts and science Architecture Art Literature Music Science Leaders State leaders Colonial governors Religious leaders Birth and death categories Births – Deaths Establishments and disestablishments Establishments – Disestablishments Works category Works vte 1644 in various calendarsGregorian calendar1644MDCXLIVAb urbe condita2397Armenian calendar1093ԹՎ ՌՂԳAssyrian calendar6394Balinese saka calendar1565–1566Bengali calendar560–1051Berber calendar2594English Regnal year Cha. 1 – 20 Cha. 1Buddhist calendar2188Burmese calendar1006Byzantine calendar7152–7153Chinese calendar癸未年 (Water Goat)4341 or 4134 — to —甲申年 (Wood Monkey)4342 or 4135Coptic calendar1360–1361Discordian calendar2810Ethiopian calendar1636–1637Hebrew calendar5404–5405Hindu calendars - Vikram Samvat1700–1701 - Shaka Samvat1565–1566 - Kali Yuga4744–4745Holocene calendar11644Igbo calendar644–645Iranian calendar1022–1023Islamic calendar1053–1054Japanese calendarKan'ei 21 / Shōhō 1(正保元年)Javanese calendar1565–1566Julian calendarGregorian minus 10 daysKorean calendar3977Minguo calendar268 before ROC民前268年Nanakshahi calendar176Thai solar calendar2186–2187Tibetan calendar阴水羊年(female Water-Goat)1770 or 1389 or 617 — to —阳木猴年(male Wood-Monkey)1771 or 1390 or 618 1644 (MDCXLIV) was a leap year starting on Friday of the Gregorian calendar and a leap year starting on Monday of the Julian calendar, the 1644th year of the Common Era (CE) and Anno Domini (AD) designations, the 644th year of the 2nd millennium, the 44th year of the 17th century, and the 5th year of the 1640s decade. As of the start of 1644, the Gregorian calendar was 10 days ahead of the Julian calendar, which remained in localized use until 1923. Calendar year It is one of eight years (CE) to contain each Roman numeral once (1000CM)+500(D)+100(C)+(+(10(X)+50(L))+(-1(I)+5(V)) = 1644). Kolumna Zygmunta erected, January 22 – The Royalist Oxford Parliament is first assembled and meets until January 26 – First English Civil War: Battle of Nantwich – The Parliamentarians defeat the Royalists in Yorkshire, reviving the Royalist cause in Scotland. September 2 – English Civil War: Second Battle of Lostwithiel (in Cornwall) – Charles I and the Royalists gain their last major victory.[7] September 15 – Pope Innocent X succeeds Pope Urban VIII, becoming the 236th pope.[6] October 1 – The Jews of Mogilev, Polish–Lithuanian Commonwealth, are attacked during Tashlikh. November 8 – The second emperor of the Qing dynasty, is enthroned in Beijing after the collapse of the Ming dynasty as the first Qing emperor to rule over China proper. November 23 Battle of Jüterbog (December 3rd New Style): Sweden's forces defeat those of the Holy Roman Empire. Areopagitica, an appeal for freedom of speech written by John Milton, is published in London. November - The Castle of Elvas in Portugal resists a 9-day siege by the Spanish during the Portuguese Restoration War. December 8 (December 26) New Style): As Christina comes of age, she is formally crowned. December – Bubonic plague breaks out in Edinburgh (Scotland). A Spanish effort to conquer the city of Macau during mass by invading local to Portugal during the Portuguese Restoration War. Sigismund's Column is erected by Władysław IV in Warsaw to commemorate King Sigismund III Vasa, who moved the capital of Poland from Kraków to Warsaw in 1596. Philosopher René Descartes publishes Principia Philosophiae (Principles of Philosophy) in Amsterdam. The organ Ormindo is first performed in Venice (music by Francesco Cavalli, and libretto by Giovanni Faustini). The West India Company(which?) displays greater interest in profit than in colonization.[vogue] Thomas Browne Veit Hans Schnorr von Carolsfeld Otto Mencke Henry Winstanley Henrietta Catherine of Nassau January 9 – Robert Gibbes, English-born landgrave in South Carolina (d. 1715) January 10 Louis François, duc de Boufflers, Marshal of France (d. 1711) Celestino Sfondrati, Italian Cardinal (d. 1696) January 11 – Hayashi Hōkō, Japanese philosopher (d. 1732) January 14 – Thomas Bruce, 2nd Earl of Elgin, English statesman (d. 1741) January 18 – John Partridge, English astrologer (d. 1708) January 23 – James Budde, Norwegian army officer (d. 1710) January 25 – Antoine Thomas, Jesuit missionary priest and astronomer (d. 1709)[9] January 26 – Thomas Royston, American colonial doctor (d. 1695) February 2 Isaac Chayyim Cantarini, Italian rabbi (d. 1723) Johannes Hancke, German writer (d. 1713) February 7 – Nils Bielke, member of the High Council of Sweden (d. 1716) February 8 – Pierre de la Broue, American bishop (d. 1720) February 12 – Jakob Ammann, Swiss founder of the Amish sect (d. 1712) February 24 – Maria Elisabeth Lämmerhirt, German mother (d. 1694) March 1 – Simon Foucher, French polemicist (d. 1696) March 15 – Veit Hans Schnorr von Carolsfeld, German iron and cobalt magnate (d. 1715) March 21 – Sir Walter Bagot, 3rd Baronet, English politician (d. 1704) March 22 Otto Mencke, German philosopher and scientist (d. 1707) Sir James Rushout, 1st Baronet, English politician (d. 1698) March 25 – Heinrich von Cocceji, German jurist (d. 1719) March 31 – Henry Winstanley, English

engineer (d. 1703) April 6 – António Luís de Sousa, 2nd Marquis of Minas, Portuguese general, governor-general of Brazil (d. 1721) April 7 Nathaniel Johnson, American politician (d. 1713) François de Neufville, duc de Villeroy, French soldier (d. 1730) April 11 – Marie Jeanne Baptiste of Savoy-Nemours, Duchess of Savoy (d. 1724) April 17 – Abraham Storck, Dutch painter (d. 1708) April 21 – Conrad von Reventlow, Danish statesman, first Grand Chancellor of Denmark (d. 1708) May 2 – Robert Cotton, English politician (d. 1717) May 4 – Juan Caballero y Ocio, Spanish priest remarkable for lavish gifts to the Catholic Church and charity (d. 1707) May 5 - Sir Richard Newdigate, 2nd Baronet, English landowner (d. 1710) May 26 – Michael Ettmüller, German physician (d. 1683) June 2 – William Salmon, English medical writer (d. 1713) June 7 – Johann Christoph Volkamer, German botanist (d. 1720) June 16 – Henrietta Anne Stuart, Princess of Scotland, England and Ireland and Duchess of Orléans (d. 1670)[10] June 17 – Juan Wolfgang Franck, German baroque composer (d. 1710) July 2 – Abraham a Sancta Clara, German Augustinian friar (d. 1709) July 4 – Josceline Percy, 11th Earl of Northumberland, English noble (d. 1670) July 7 – Joan Geelvinck, Dutch politician (d. 1707) July 10 – Miguel Bayot, Spanish Catholic prelate, Bishop of Cebu (from 1697) (d. 1700) July 22 – Peter Drelincourt, Irish chaplain (d. 1722) August 6 Christian Ernst, Margrave of Brandenburg-Bayreuth (1655–1712) (d. 1712) Louise de La Vallière, French mistress of Louis XIV of France (d. 1710)[11] August 12 – Heinrich Ignaz Franz Biber, Bohemian composer and violinist (d. 1704) August 28 (bapt.) - Gilles Schey, Dutch admiral (d. 1703) August 29 - Anne Bourdon, nun in New France (d. 1711) August 30 – Thomas Tufton, 6th Earl of Thanet, English politician (d. 1729) September 3 – Richard Newport, 2nd Earl of Bradford, English politician (d. 1723) September 6 – Juan Bautista Cabanilles, Spanish composer (d. 1712) September 11 – Jacob Rotius, Dutch painter (d. 1681) September 22 – Jacques Échard, French Dominican, historian of the Order (d. 1724) September 25 – Ole Rømer, Danish astronomer (d. 1710) October 1 – Jean Rousseau, French viol player (d. 1699) October 2 – François-Timoléon de Choisy, French abbé, author and cross-dresser (d. 1724) October 3 – Adriaen Frans Boudewijns, landscape painter (d. 1719) October 12 – Christopher Sandius, Dutch Arian writer (d. 1680) October 13 – Siphir Shikoh, Mughal Emperor (d. 1708) October 14 – William Penn, English Quaker and founder of Pennsylvania (d. 1718) October 26 – Mathias Steuchius, Swedish archbishop (d. 1730) November 23 (bapt.) – Cornelia van der Geest, Dutch art collector (d. 1701) December 8 – Maria d'Este, Italian noble (d. 1684) December 9 – Robert Kirk, Scottish folklorist, Bible translator, Gaelic scholar (d. 1692) December 23 – Tomás de Torrejón y Velasco, Spanish composer, musician and organist (d. 1728) November 25 – Walter Scott, Earl of Tarras, Scottish nobleman (d. 1693) December 29 – Philips van Almonde, Dutch Lieutenant Admiral (d. 1711) Matsuo Bashō, Japanese poet (d. 1694) Pietro Erardi, Maltese chaplain and painter (d. 1727)[12] Antonio Stradivari, Italian violin maker (d. 1737)[13] Pope Urban VIII Johannes Wtenbogaert January 20 – Stefano Amadei, Italian painter (b. 1580) January 30 – William Chillingworth, controversial English churchman (b. 1602) January 31 – Georg II of Fleckenstein-Dagstuhl, German nobleman (b. 1588) February 28 – Guru Har Gobind, the Sixth Sikh Guru (b. 1595) March 15 – Countess Louise Juliana of Nassau, Regent of Bohemia (b. 1576) March 24 – Cecilia Renata of Austria, Queen of Poland (b. 1611) March 29 – Lord John Stewart, Scottish aristocrat, Royalist commander in the English Civil War (b. 1621) April 2 – Diego Salcedo, Spanish bishop (b. 1575) April 10 – Reverend William Brewster, English Pilgrim leader (b. 1567) April 25 – Chongzhen, last Ming Emperor of China (suicide) (b. 1611) April 28 – Zsófia Bosnyák, Hungarian noblewoman (b. 1609) May 26 – Alfonso III d'Este, Duke of Modena, Italian noble (b. 1591) June 17 Anne de Montafié, Countess of Clermont-en-Beauvaisis, French countess (b. 1577) John of St. Thomas, Portuguese philosopher (b. 1589) July 4 – Brian Twyne, English archivist (b. 1581) July 7 – Hedwig of Hesse-Kassel, countess consort of Schaumburg (b. 1569) July 16 – Giovanni Biliverti, Italian painter (b. 1585) July 25 – Amar Singh Rathore, Rajput nobleman affiliated with the royal house of Marwar (b. 1613) July 29 – Pope Urban VIII (b. 1568)[14] August 25 – Johann Heinrich Alting, German Lutheran theologian (b. 1583) September 4 – Johannes Wtenbogaert, Dutch leader of the Remonstrants (b. 1557) September 7 Guido Bentivoglio, Italian statesman and historian (b. 1579)[15] Ralph Corbie, Irish Jesuit (b. 1598) September 8 John Coke, English politician (b. 1563)[16] Francis Quarles, English poet (b. 1592)[17] October 6 – Elisabeth of France, queen of Philip IV of Spain (b. 1602) October 19 – Jinen Friedrich, Count Palatine of Sulzbach-Hilpoltstein (b. 1587) October 30 – Jorge de Cárdenas y Manrique de Lara, Spanish noble (b. 1584) November 6 – Thomas Roe, English diplomat (b. c. 1581) November 10 – Luis Vélez de Guevara, Spanish writer (b. 1579) November 20 – Nathaniel Fiennes, English politician (b. 1608) November 24 – Deodat del Monte, Flemish painter, architect (b. 1582) December 20 – Albert IV, Duke of Saxe-Eisenach (from 1640) (b. 1599) December 23 – Sir Alexander Carew, 2nd Baronet, English politician (b. 1609) December 28 – John Bankes, Attorney General and Chief Justice to King Charles I of England (b. 1589) December 30 – Jan Baptist van Helmont, Flemish chemist (b. 1577) ^ Braddick, Michael J. 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Defeating the parliamentarians at Stockport, he forced his way into Lancashire, stormed Bolton on 28 May, and captured Liverpool on 11 June", quoting Ormerod, Civil War Tracts of Lancashire. p. 187) ^ Levene, Mark (1999). The massacre in history. New York: Berghahn Books. p. 93. ISBN 9781571819345. ^ Jeremy Black (1996). The Cambridge Illustrated Atlas of Warfare: Renaissance to Revolution, 1492–1792. Cambridge University Press. p. 80. ^ Levillain, Philippe (2002). The papacy : an encyclopedia. New York: Routledge. p. 801. ISBN 9780415922289. ^ Walle, Willy (2003). The history of the relations between the Low Countries and China in the Qing era (1644-1911. Leuven, Belgium: Leuven University Press Ferdinand Verbiest Foundation. p. 90. ISBN 9789058673152. ^ Lowther, Kenneth (1979). Dartmoor, Exeter... London: Ward Lock. p. 35. ISBN 9780706357929. ^ Dumas, Alexandre (1998). The Vicomte de Bragelonne. Oxford New York: Oxford University Press. p. 674. 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Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed.Find sources: "16th century" – news · newspapers · books · scholar · JSTOR (September 2022) (Learn how and when to remove this message) Millennia 2nd millennium Centuries 15th century 16th century 17th century Timelines 15th century 16th century 17th century State leaders 15th century 16th century 17th century Decades 1500s 1510s 1520s 1530s 1540s 1550s 1560s 1570s 1580s 1590s Categories: Births – Deaths Establishments – Disestablishments The world map by the Italian Amerigo Vespucci (from whose name the word America is derived) and Belgian Gerardus Mercator shows (besides the classical continents Europe, Africa, and Asia) the Americas as America sive India Nova', New Guinea, and other islands of Southeast Asia, as well as a hypothetical Arctic continent and a yet underutmined Terra Australis.[1]The 16th century began with the Julian year 1501 (represented by the Roman numerals MDI) and ended with either the Julian or the Gregorian year 1600 (MDC), depending on the reckoning used (the Gregorian calendar introduced a lapse of 10 days in October 1582).[1] The Renaissance in Italy and Europe saw the emergence of important artists, authors and scientists, and led to the foundation of important subjects which include accounting and political science. Copernicus proposed the heliocentric universe, which was met with strong resistance, and Tycho Brahe refuted the theory of celestial spheres through observational measurement of the 1572 appearance of a Milky Way supernova. These events directly challenged the long-held notion of an immutable universe supported by Ptolemy and Aristotle, and led to major revolutions in astronomy and science. Galileo Galilei became a champion of the new sciences, invented the first thermometer and made substantial contributions in the fields of physics and astronomy, becoming a major figure in the Scientific Revolution in Europe. Spain and Portugal colonized large parts of Central and South America, followed by France and England in Northern America and the Lesser Antilles. The Portuguese became the masters of trade between Brazil, the coasts of Africa, and their possessions in the Indies, whereas the Spanish came to dominate the Greater Antilles, Mexico, Peru, and opened trade across the Pacific Ocean, linking the Americas with the Indies. English and French privateers began to practice persistent theft of Spanish and Portuguese treasures. This era of colonialism established mercantilism as the leading school of economic thought, where the economic system was viewed as a zero-sum game in which any gain by one party required a loss by another. The mercantilist doctrine encouraged the many intra-European wars of the period and arguably fueled European expansion and imperialism throughout the world until the 19th century or early 20th century. The Reformation in central and northern Europe gave a major blow to the authority of the papacy and the Catholic Church. In England, the British-Italian Alberico Gentili wrote the first book on public international law and divided secularism from canon law and Catholic theology. European politics became dominated by religious conflicts, with the groundwork for the epochal Thirty Years' War being laid towards the end of the century. In the Middle East, the Ottoman Empire continued to expand, with the sultan taking the title of caliph, while dealing with a resurgent Persia. Iran and Iraq were caught by a major popularity of the Shia sect of Islam under the rule of the Safavid dynasty of warrior-mystics, providing grounds for a Persia independent of the majority-Sunni Muslim world.[2] In the Indian subcontinent, following the defeat of the Delhi Sultanate and Vijayanagara Empire, new powers emerged, the Sur Empire founded by Sher Shah Suri, Deccan sultanates, Rajput states, and the Mughal Empire[3] by Emperor Babur, a direct descendant of Timur and Genghis Khan.[4] His successors Humayun and Akbar, enlarged the empire to include most of South Asia. Japan suffered a severe civil war at this time, known as the Sengoku period, and emerged from it as a unified nation under Toyotomi Hideyoshi. China was ruled by the Ming dynasty, which was becoming increasingly isolationist, coming into conflict with Japan over the control of Korea as well as Japanese pirates. In Africa, Christianity had begun to spread in Central Africa and Southern Africa. Until the Scramble for Africa in the late 19th century, most of Africa was left uncolonized. For timelines of earlier events, see 15th century and Timeline of the Middle Ages. Mona Lisa, by Leonardo da Vinci, c. 1503–1506, one of the world's best-known paintings 1501: Michelangelo returns to his native Florence to begin work on the statue David. 1501: Safavid dynasty reunifies Iran and rules over it until 1736. Safavids adopt a Shia branch of Islam.[5] 1501: First Battle of Cannanore between the Third Portuguese Armada and Kingdom of Cochin under João da Nova and Zamorin of Kozhikode's navy marks the beginning of Portuguese conflicts in the Indian Ocean. 1502: First reported African slaves in the New World 1502: The Crimean Khanate sacks Sarai in the Golden Horde, ending its existence. 1503: Spain defeats France at the Battle of Cerignola. Considered to be the first battle in history won by gunpowder small arms. 1503: Leonardo da Vinci begins painting the Mona Lisa and completes it three years later. 1503: Nostradamus is born either December 14 or December 21. 1504: A period of drought, with famine in all of Spain. 1504: Death of Isabella I of Castile; Joanna of Castile becomes the Queen. 1504: Foundation of the Sultanate of Sennar by Amara Dunqas, in what is modern Sudan 1505: Zhengde Emperor ascends the throne of Ming dynasty. 1505: Martin Luther enters St. Augustine's Monastery at Erfurt, Germany, on 17 July and begins his journey to instigating the Reformation. 1505: Sultan Trenggono builds the first Muslim kingdom in Java, called Demak, in Indonesia. Many other small kingdoms were established in other islands to fight against Portuguese. Each kingdom introduced local language as a way of communication and unity. 1506: Leonardo da Vinci completes the Mona Lisa. 1506: King Afonso I of Kongo wins the battle of Mbanza Kongo, resulting in Catholicism becoming Kongo's state religion.Battle of Cerignola: El Gran Capitan finds the corpse of Louis d'Armagnac, Duke of Nemours 1506: At least two thousand converted Jews are massacred in a Lisbon riot, Portugal. 1506: Christopher Columbus dies in Valladolid, Spain. 1506: Poland is invaded by Tatars from the Crimean Khanate. 1507: The first recorded epidemic of smallpox in the New World on the island of Hispaniola. It devastates the native Taíno population.[6] 1507: Afonso de Albuquerque conquered Hormuz and Muscat, among other bases in the Persian Gulf, taking control of the region at the entrance of the Gulf. 1508: The Christian-Islamic power struggle in Europe and West Asia spills over into the Indian Ocean as Battle of Chaul during the Portuguese-Mamluk War 1508–1512: Michelangelo paints the Sistine Chapel ceiling. 1509: The defeat of joint fleet of the Sultan of Gujarat, the Mamlûk Burji Sultanate of Egypt, and the Zamorin of Calicut with support of the Republic of Venice and the Ottoman Empire in Battle of Diu marks the beginning of Portuguese dominance of the Spice trade and the Indian Ocean. 1509: The Portuguese king sends Diogo Lopes de Sequeira to find Malacca, the eastern terminus of Asian trade. After initially receiving Sequeira, Sultan Mahmud Shah captures and/or kills several of his men and attempts an assault on the four Portuguese ships, which escape.[7] The Javanese fleet is also destroyed in Malacca. 1509: Krishnadevaraya ascends the throne of Vijayanagara Empire. Afonso de Albuquerque of Portugal conquers the city of Goa 1510: Portugal conquers Malacca, the capital of the Malacca Sultanate.[1] The Portuguese establish their rule over the Molucca Islands. 1510: The southern part (historical core) of the Kingdom of Navarre is invaded by Castile and Aragon. 1512: Outh Shahi dynasty, founded by Quli Qutb Mulk, rules Golconda Sultanate until 1687. 1512: The first Portuguese exploratory expedition was sent eastward from Malacca (in present-day Malaysia) to search for the 'Spice Islands' (Maluku) led by Francisco Serrão. Serrão is shipwrecked but struggles on to Hitu (northern Ambon) and wins the favour of the local rulers.[9] 1513: Machiavelli writes The Prince, a treatise about political philosophy. 1513: The Portuguese mariner Jorge Álvares lands at Macau, China, during the Ming dynasty. 1513: Henry VIII defeats the French at the Battle of the Spurs. 1513: Battle of Flodden Field in which invading Scots are defeated by Henry VIII's forces. 1513: Battle of Bicocca; James IV of Scotland and large numbers of his army killed. 1513: Basilius Besler and the others. 1513: Vasco Núñez de Balboa, in service of Spain arrives at the Pacific Ocean (which he called Mar del Sur) across the Isthmus of Panama. He was the first European to do so. 1514: The Battle of Orsha halts Muscovy's expansion into Eastern Europe. 1514: Dózsa rebellion (peasant revolt) in Hungary.Martin Luther initiated the Reformation with his Ninety-five Theses in 1517. 1514: The Battle of Chaldiran, the Ottoman Empire gains decisive victory against Safavid dynasty. 1515: Ascension of Francis I of France as King of France following the death of Louis XII. 1515: The Ottoman Empire wrests Eastern Anatolia from the Safavids after the Battle of Chaldiran. 1515: The Ottomans conquer the last beyliks of Anatolia, the Dulkadirs and the Ramadanids. 1516–1517: The Ottomans defeat the Mamluks and gain control of Egypt, Arabia, and the Levant. 1517: The Sweating sickness epidemic in Tudor England.[10] 1517: The Reformation begins when Martin Luther posts his Ninety-five Theses in Saxony. 1518: The Treaty of London was a non-aggression pact between the major European nations. The signatories were Burgundy, France, England, the Holy Roman Empire, the Netherlands, the Papal States and Spain, all of whom agreed not to attack one another and to come to the aid of any that were under attack. 1518: Mir Chakar Khan Rind assumes the leadership of the Rind tribe in Balochistan and settles in Punjab. 1518: San Antonio de Pádua founded. 1518: Leonardo da Vinci dies of natural causes on May 2.Europe at the time of the accession of Charles V in 1519 1519 Wang Yangming, the Chinese philosopher and governor of Jiangxi province, describes his intent to use the firepower of the fo-lang-ji, a breech-loading Portuguese culverin, in order to suppress the rebellion of Prince Zhu Chenhao. 1519: Barbary pirates led by Hayreddin Barbarossa, a Turk appointed to ruling position in Algiers by the Ottoman Empire, raid Provence and Toulon in southern France. 1519: Death of Emperor Maximilian; Charles I of Austria, Spain, and the Low Countries becomes Emperor of Holy Roman Empire as Charles V, Holy Roman Emperor (ruled until 1556). 1519–1522: Spanish expedition commanded by Magellan and Elcano are the first to circumnavigate the Earth. 1519–1521: Hernán Cortés leads the Spanish conquest of the Aztec Empire. 1519: The first European diplomatic mission to Ethiopia, sent by the Portuguese, arrives at Massawa 9 April, and reaches the imperial encampment of Emperor Dawit II in Shewa 9 October. 1520: Vijayanagara Empire forces under Krishnadevaraya defeat the Adil Shahi under at the siege of Raichur in 1522, from an account manuscript 1525: Timurid Empire forces under Babur defeat the Lodi dynasty at the First Battle of Panipat, end of the Delhi Sultanate. 1525: German and Spanish forces defeat France at the Battle of Pavia, Francis I of France is captured. 1526: The Ottomans defeat the Kingdom of Hungary at the Battle of Mohács. 1526: Mughal Empire, founded by Babur. 1527: Sack of Rome with Pope Clement VII escaping and the Swiss Guards defending the Vatican being killed. The sack of the city of Rome marked the end of the Italian Renaissance. 1527: Protestant Reformation begins in Sweden. 1527: The last ruler of Majapahit falls from power. This state (located in present-day Indonesia) was finally extinguished at the hands of the Demak. A large number of courtiers, artisans, priests, and members of the royalty moved east to the island of Bali; however, the power and the seat of government transferred to Demak under the leadership of Pangeran, later Sultan Fatah. 1527: June 22, The Javanese Prince Fatahillah of the Cirebon Sultanate successfully defeated the Portuguese armed forces at the site of the Sunda Kelapa Harbor. The city was then renamed Jayakarta, meaning "a glorious victory." This eventful day came to be acknowledged as Jakarta's Founding Anniversary. 1527: Mughal Empire forces defeat the Rajput led by Rana Sanga of Mewar at the Battle of Khanwa 1529: The Austrians defeat the Ottoman Empire at the siege of Vienna. 1529: Treaty of Zaragoza defined the antimeridian of Tordesillas attributing the Moluccas to Portugal and Philippines to Spain. 1529: Imam Ahmad Gurey defeats the Ethiopian Emperor Dawit II in the Battle of Shimbra Kure, the opening clash of the Ethiopian–Adal War. Spanish conquistadors with their Tlaxcallan allies fighting against the Otomies of Metztitlán in present-day Mexico, a 16th-century codex 1531–1532: The Church of England breaks away from the Catholic Church and recognizes King Henry VIII as the head of the Church. 1531: The Inca Civil War begins. It is fought between the two brothers, Atahualpa and Huáscar. 1532: Francisco Pizarro leads the Spanish conquest of the Inca Empire. 1532: Foundation of São Vicente, the first permanent Portuguese settlement in the Americas. 1533: Anne Boleyn becomes Queen of England. 1533: Elizabeth Tudor is born. 1534: Jacques Cartier claims Canada for France. 1534: The Ottomans capture Baghdad from the Safavids. 1534: Affair of the Placards, where King Francis I becomes more active in repression of French Protestants. 1535: The Münster Rebellion, an attempt of radical, millennialist, Anabaptists to establish a theocracy, ends in bloodshed. 1535: The Portuguese in Ternate depose Sultan Tabariji (or Tabarija) and send him to Portuguese Goa where he converts to Christianity and bequeaths his Portuguese godfather Jordao de Freitas the island of Ambon.[12] Hairun becomes the next sultan. 1536: Catherine of Aragon dies in Kimbolton Castle, in England.Territorial expansion of the Ottoman Empire under Suleiman (in red and orange) 1536: In England, Anne Boleyn is beheaded for adultery and treason. 1536: Establishment of the Inquisition in Portugal. 1536: Foundation of Buenos Aires (in present-day Argentina) by Pedro de Mendoza. 1537: The Portuguese establish Recife in Pernambuco, north-east of Brazil. 1537: William Tyndale's partial translation of the Bible into English is published, which would eventually be incorporated into the King James Bible. 1538: Gonzalo Jiménez de Quesada founds Bogotá. 1538: Spanish-Venetian fleet is defeated by the Ottoman Turks at the Battle of Preveza. 1539: Hernando de Soto explores inland North America. Nicolaus Copernicus 1540: The Society of Jesus, or the Jesuits, is founded by Ignatius of Loyola and six companions with the approval of Pope Paul III. 1540: Sher Shah Suri founds the Suri dynasty in India, after defeating the Mughal emperor Humayun. 1541: Amazon River is encountered and explored by Francisco de Orellana. 1541: Capture of Buda and the absorption of the major part of Hungary by the Ottoman Empire. 1541: Sahib I Giray of Crimea invades Russia. 1542: The Italian War of 1542–1546 begins when Francis I of France and Emperor Charles V. This time Henry VIII is allied with the Emperor, while James V of Scotland and Sultan Suleiman I are allied with the French. 1542: The Great is born in the Rajput Umarkot Fort 1542: Spanish explorer Ruy López de Villalobos named the island of Samar and Leyte Las Islas Filipinas honoring Philip II of Spain and became the official name of the archipelago. 1543: Ethiopian/Portuguese troops defeat the Adal army led by Imam Ahmad Gurey at the Battle of Wayna Daga; Imam Ahmad Gurey is killed at this battle. 1543: Copernicus publishes his theory that the Earth and the other planets revolve around the Sun 1543: The Nanban trade period begins after Portuguese traders make contact with Japan. 1544: The French defeat an Imperial-Spanish army at the Battle of Ceresole.Scenes of everyday life in Ming China, by Qiu Ying 1544: Battle of the Shirts in Scotland. The Frasers and Macdonalds of Clan Ranald fight over a disputed chiefship; reportedly, 5 Frasers and 8 Macdonalds survive. 1545: Songhai forces sack the Malian capital of Mali 1545: The Council of Trent meets for the first time in Trent (in northern Italy). 1545: Publication in Venice of Delle Navigationi et Viaggi. 1546: Martin Luther lays the foundations for a permanent mission. On 1547) 1547: Henry VIII dies in the Palace of Whitehall on 28 January at the age of 55. 1547: Francis I dies in the Château de Rambouillet on 31 March at the age of 52. 1547: Edward VI becomes King of England and Ireland on 28 January and is crowned on 20 February at the age of 9. 1547: Emperor Charles V decisively dismantles the Schmalkaldic League at the Battle of Mühlberg. 1547: Grand Prince Ivan the Terrible is crowned tsar of (All) Russia, thenceforth becoming the first Russian tsar. 1548: Battle of Uedahara: Firearms are used for the first time on the battlefield in Japan, and Takeda Shingen is defeated by Murakami Yoshikiyo. 1548: Askia Daoud, who reigned from 1548 to 1583. 1549: Leading public libraries in Timbuktu (in present-day Mali). 1548: The Ming dynasty government of China issues a decree banning all foreign trade and closes down all seaports along the coast; these Hai jin laws came during the Wokou wars with Japanese pirates. 1549: Tomé de Sousa establishes Salvador in Bahia, north-east of Brazil. 1549: Arya Penangsang with the support of his teacher, Sunan Kudus, avenges the death of Raden Kikin by sending an envoy named Rangkud to kill Sunan Prawoto by Keris Kyai Satan Kober (in present-day Indonesia). The Islamic gunpowder empires: Mughal Army artillerymen during the reign of Jalaluddin Akbar 1550: The architect Mimar Sinan builds the Süleymaniye Mosque in Istanbul. 1550: Mongols led by Altan Khan invade China and besiege Beijing. 1550–1551: Valladolid debate concerning the human rights of the Indigenous people of the Americas. 1551: Fifth outbreak of sweating sickness in England. John Caius of Shrewsbury writes the first full contemporary account of the symptoms of the disease. 1551: North African pirates enslave the entire population of the Maltese island Gozo, between 5,000 and 6,000, sending them to Libya. 1552: Russia conquers the Khanate of Kazan in central Asia. 1552: Jesuit China Mission, Francis Xavier dies. 1553: Mary Tudor becomes the first queen regnant of England and restores the Church of England over Papal authority. 1553: The Portuguese found a settlement at Macau. 1554: Missionaries José de Anchieta and Manuel da Nóbrega establishes São Paulo, southeast Brazil. 1554: Princess Elizabeth is imprisoned in the Tower of London upon the orders of Mary I for suspicion of being involved in the Wyatt rebellion. 1555: The Muscovy Company is the first major chartered joint-stock trading company, a precursor to the type of business first popularized in England. 1555: Tsar Ivan the Terrible of Russia commissions Saint Basil's Cathedral in Moscow.Map of Japan around 1590 earthquake during the Mughal Empire. 1555: Georgius Agricola, the "Father of Mineralogy", publishes his De re metallica. 1556: Akbar defeats Hemu at the Second Battle of Panipat. 1556: Russia conquers the Astrakhan Khanate. 1556–1605: During his reign, Akbar expands the Mughal Empire in a series of conquests (in the Indian subcontinent).Political map of the world in 1556 1556: Mir Chakar Khan Rind captures Delhi with Humayun. 1556: Pomponio Algerio, radical theologian, is executed by boiling in oil as part of the Roman Inquisition. 1557: Habsburg Spain declares bankruptcy. Philip II of Spain had to declare four state bankruptcies in 1557, 1560, 1575 and 1596. 1557: The Portuguese settle in Macau (on the western side of the Pearl River Delta across from present-day Hong Kong). 1557: The Ottomans capture Massawa, all but isolating Ethiopia from the rest of the world. 1558: Elizabeth Tudor becomes Queen Elizabeth I at age 25. 1558–1603: The Elizabethan era is considered the height of the English Renaissance. 1558: Livonian War between Poland, Grand Principality of Lithuania, Sweden, Denmark and Russia. 1558: After 200 years, the Kingdom of England loses Calais to France. 1559: With the Peace of Cateau Cambrésis, the Italian Wars conclude. 1559: Sultan Hairun of Ternate (in present-day Indonesia) protests the Portuguese's Christianisation activities in his lands. Hostilities between Ternate and the Portuguese. The Mughal Emperor Akbar shoots the Rajput warrior Jaimal during the Siege of Chittorgarh in 1567 1560: Queen Mary defeats the Spanish fleet at the Battle of Djerba. 1560: Elizabeth Báthory is born in Nyírbátor, Hungary. 1560: By winning the Battle of Okehazama, Oda Nobunaga becomes one of the pre-eminent warlords of Japan. 1560: Jeanne d'Albret declares Calvinism the official religion of Navarre. 1561: Lazarus Church, Macau 1561: Sir Francis Bacon is born in London. 1561: The fourth battle of Kawanakajima between the Uesugi and Takeda at Hachimanbara takes place. 1561: Guido de Bres draws up the Belgic Confession of Protestant faith. 1562: Mughal emperor Akbar reconciles the Muslim and Hindu factions by marrying into the powerful Rajput Hindu caste. 1562–1598: French Wars of Religion between Catholics and Huguenots. 1562: Massacre of Wassy and Battle of Dreux in the French Wars of Religion. 1562: Portuguese Dominican priests build a palm-trunk fortress which Javanese Muslims burned down the next Sultan. 1570: 20,000 inhabitants of Nicosia in Cyprus were massacred and every church, public building, and palace was looted. Cyprus fell to the Ottoman Turks in the year. 1571: Pope Pius V convenes the Sacred League. 1571: The Spanish-led Holy League navy destroys the Ottoman Empire navy at the Battle of Lepanto. 1571: Crimean Tatars attack and sack Moscow, burning everything but the Kremlin. 1571: American Indians kill Spanish missionaries in what would later be Jamestown, Virginia. 1571: Spanish conquistador Miguel López de Legazpi establishes in Cebu the Spanish settlement in the Philippines starting a period of Spanish colonization that would last over three hundred years. 1565: Spanish navigator Andres de Urdaneta discovers the maritime route from Asia to the Americas across the Pacific Ocean, also known as the tornaviaje. 1565: Royal Exchange is founded by Thomas Gresham. 1566: Suleiman the Magnificent, ruler of the Ottoman Empire, dies on September 7, during the battle of Szigetvar.Siege of Valenciennes during the Dutch War of Independence in 1567 1566–1648: Eighty Years' War between Spain and the Netherlands. 1566: Da le Balle Contrade d'Oriente, composed by Cipriano de Rore. 1567: After 45 years' reign, Jiajing Emperor died in the Forbidden City, Longqing Emperor ascended the throne of Ming dynasty. 1567: Mary, Queen of Scots, is imprisoned by Elizabeth I of England. 1568: The Transylvanian Diet, under the patronage of the prince John Sigismund Zápolya, the former king of Hungary, inspired by the teachings of Ferenc Dávid, the founder of the Unitarian Church of Transylvania, promulgates the Edict of Torda, the first law of freedom of religion and of conscience in the world. 1568–1571: Morisco Revolt in Spain. 1568–1600: The Azuchi-Momoyama period in Japan. 1568: Hadłvjaya sent his adopted son and son-in-law Sutawijaya, who would later become the first ruler of the Mataram dynasty of Indonesia, to kill Arya Penangsang. 1569: Rising of the North in England. 1569: Mercator 1569 world map published by Gerardus Mercator. 1569: The Polish-Lithuanian Commonwealth is created with the Union of Lublin which lasts until 1795. 1569: Peace treaty signed by Sultan Hairun of Ternate and Governor Lopez De Mesquita of Portugal. The Battle of Lepanto 1570: Ivan the Terrible, tsar of Russia, orders the massacre of inhabitants of Novgorod. 1570: Pope Pius V issues Regnans in Excelsis, a papal bull excommunicating all who obeyed Elizabeth I and calling on all Catholics to rebel against her. 1570: Sultan Hairun of Ternate (in present-day Indonesia) is killed by the Portuguese.[12] 1570: Portuguese began the previous year, a fleet of eight ships under Jacob van Neck was the first Dutch fleet to reach the Indies. 1600: Michael the Brave unifies the three principalities: Wallachia, Moldavia and Transylvania after the Battle of Selimbăr from 1599. For later events, see Timeline of the 17th century. Polybius' The Histories translated into Italian, English, German and French.[20] Mississippian culture disappears. Medallion rug, variant Star Ushak style, Anatolia (modern Turkey), is made. It is now kept at the Saint Louis Art Museum. Hernan Cortes (1485–1547) Henry VIII, (1491–1547) King of England and Ireland Don Fernando Alvarez de Toledo (1507–1582) Suleiman the Magnificent, Sultan of the Ottoman Empire (1520–1566) Ivan IV of Russia (1530–1584) St Francis Drake (c. 1540 – 1596) Alberico Gentili, (1552–1608) the Father of international law Philip II of Spain, King of Spain (1556–1605) Akbar the Great, Mughal emperor (1556–1605) Related article: List of 16th century inventions. The Columbian Exchange introduces many plants, animals and diseases to the Old and New Worlds. Introduction of the spinning wheel revolutionizes textile production in Europe. The letter J is introduced into the English alphabet. 1500: First portable watch is created by Peter Henlein of Germany. Philip II, King of Spain and Portugal 1513: Juan Ponce de León sights Florida and Vasco Núñez de Balboa sights the eastern edge of the Pacific Ocean. 1519–1522: Ferdinand Magellan and Juan Sebastián Elcano lead the first circumnavigation of the world. 1519–1540: In America, Hernando de Soto expeditions map the Gulf of Mexico coastline and bays. 1525: Modern square root symbol (√) 1540: Francisco Vásquez de Coronado sights the Grand Canyon. 1541–42: Francisco de Orellana sails the length of the Amazon River. 1543: Copernicus publishes his theory that the Earth and the other planets revolve around the Sun 1545: Theory of complex numbers is first developed by Gerolamo Cardano of Italy. 1558: Camera obscura is first used in Europe by Giambattista della Porta of Italy. 1559–1562: Spanish settlements in Alabama/Florida and Georgia confirm dangers of hurricanes and local native warring tribes. 1565: Spanish settlers outside New Spain (mainland colonies Florida's coastline at St. Augustine. 1565: Invention of the graphite pencil (in a wooden holder) by Conrad Gesner. Modernized in 1812. 1568: Gerardus Mercator creates the first Mercator projection map. 1572: Supernova SN 1572 is observed by Tycho Brahe in the Milky Way. 1582: Gregorian calendar is introduced in Europe by Pope Gregory XIII and adopted by Catholic countries. c. 1583: Galileo Galilei of Pisa, Italy identifies the constant swing of a pendulum, leading to development of reliable timekeepers. 1585: earliest known reference to the 'sailing carriage' in China. 1589: William Lee invents the stocking frame. 1591: First flush toilet is introduced by Sir John Harrington of England, the design published under the title 'The Metamorphosis of Ajax'. 1593: Galileo Galilei invents a thermometer. 1596: William Barents discovers Spitsbergen. 1597: Opera in Florence by Jacopo Peri. Entertainment in the 16th century ^ a b Modern reference works on the period tend to follow the introduction of the Gregorian calendar for the sake of clarity; thus NASA's lunar eclipse catalogue states 'The Gregorian calendar is used for all dates from 1582 Oct 15 onwards. Before that date, the Julian calendar is used." For dates after 15 October 1582, care must be taken to avoid confusion of the two styles. ^ de Vries, Jan (14 September 2009). "The limits of globalization in the early modern world". The Economic History Review. 63 (3): 710–733. CiteSeerX 10.1.1.86.2862. doi:10.1111/j.1468-0289.2009.00497.x. JSTOR 40929823. S2CID 219969360. SSRN 1635517. ^ Singh, Sarina; Lindsay Brown; Paul Clammer; Rodney Cocks; John Mock (2008). Pakistan & the Karakoram Highway. Vol. 7. Lonely Planet. p. 137. ISBN 978-1-74104-542-0. Retrieved 23 August 2010. ^ Babur (2006). Babur Nama. Penguin Books. p. vii. ISBN 978-0-14-400149-1. ^ "16th Century Timeline (1501 to 1600)". fsmitha.com. 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