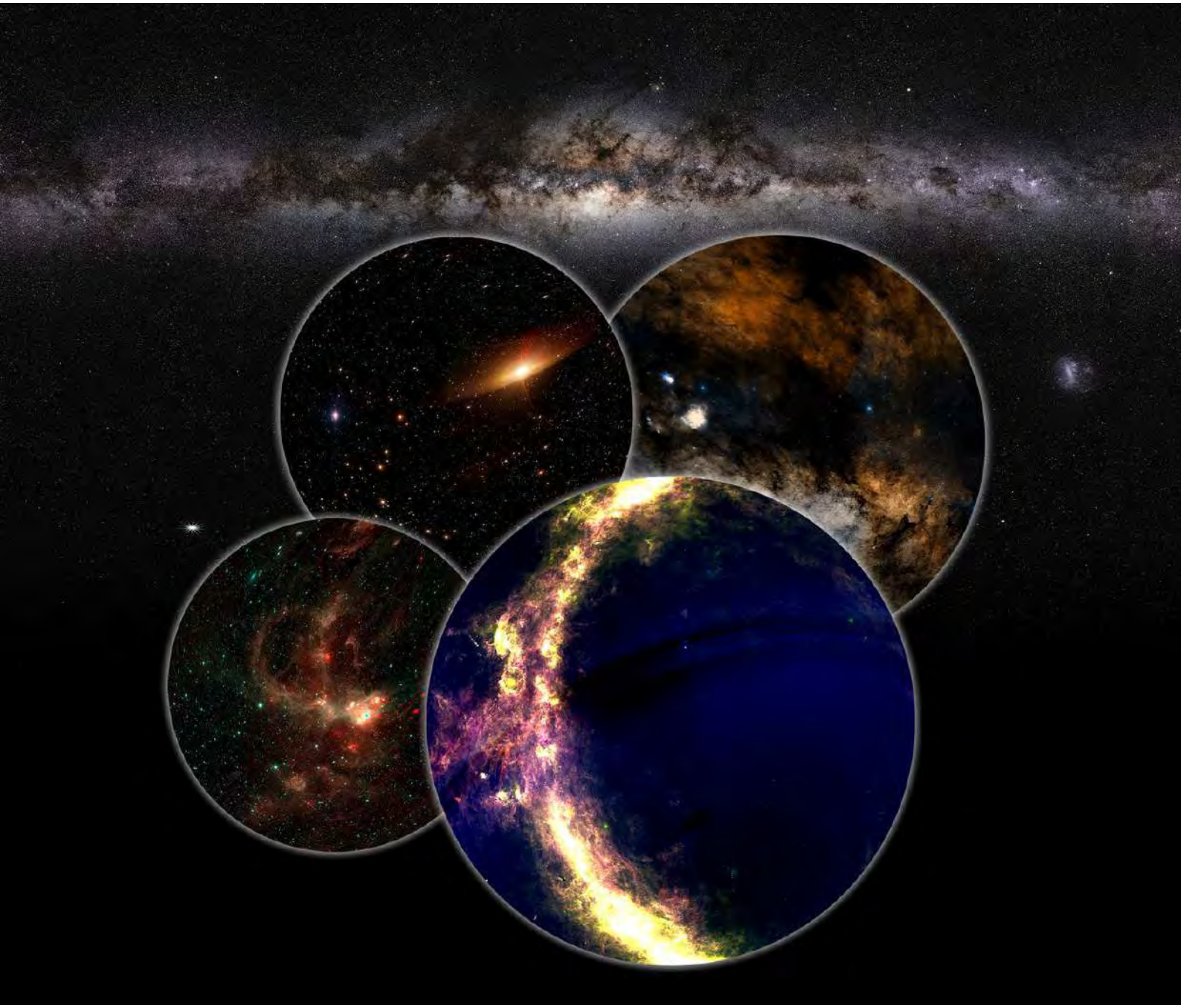
DIGISTAR LITE
SOFTWARE DESCRIPTION



Real images realized thanks to **Sky Surveys** Digistar plug-in

E&S EVANS & SUTHERLAND
A Cosm Company

DIGISTAR LITE

NEW DIGISTAR 7

DIGISTAR LITE

Digistar Lite is the most complete portable planetarium solution. The system is easy to setup and fully controlled from your tablet or iPad with the exclusive Digistar Controller.

Digistar Lite is based on customized version of Digistar 6 software but from January 2021 the upgrade to **Digistar 7** will be available!

CHOOSE THIS OPTIONAL UPGRADE.

SHARED EXPERIENCE

With new visualization tools and datasets, **Digistar 7**'s connectivity facilitates collaboration between passionate educators and scientists.

OPERATOR EXPERIENCE

Digistar 7 refines an already **world-class user interface**, so you can focus on your show instead of fighting with your tools.

AUDIENCE EXPERIENCE

New **physically-based rendering** helps **Digistar 7** deliver impact where it counts – in the eyes of your visitors!

SKY SURVEY: DISCOVER THE REAL SKY

For the first time it is possible visualize the sky in different wavelengths, and with the new version of the Digistar telescope mode you would view the sky with a telescope by zooming up to a nebula or any other object, seeing the real image.

The REAL sky is now available in your planetarium with the Digistar 7!

Digistar 7 supports online HiPS / HEALPix datasets. It gives access and visualize datasets from CDS Aladin Sky Atlas, CXC (Harvard), ESAC (ESA), ISAS (JAXA) for example.
Each Sky Survey includes the name, description, and preview image of the survey, if available from the online service. The Digistar 7 includes at today the following datasets:

- Digitized Sky Survey (DSS2) Color
- Sloan Digital Sky Survey SDSS9 (Optical)
- Gaia DR2 Density Map
- Gaia DR2 Color Flux Map
- 2MASS Color (Near Infrared)
- Spitzer IRAC Survey Color (Infrared)
- AKARI Far-Infrared All-Sky Survey Color
- AllWISE Color (Infrared)
- NEOWISER Color (Infrared)
- IRAS-IRIS Improved Reprocessing of IRAS Survey (Infrared)
- VLA Low-Frequency Sky Survey Redux (Radio)
- PLANCK R2 HFI Color (Radio)
- PLANCK R2 LFI Color (Radio)
- GALEX GR6 AIS March 2014 (Ultraviolet)
- ROSAT Wide Field Camera Color (Extreme Ultraviolet)
- ROSAT X-Ray All-Sky Survey
- Fermi Color Survey (Gamma-ray)
- Chandra X-ray Center Survey
- AKARI Far-Infrared All-Sky Survey
- INTEGRAL IBIS Public Observations (Gamma-ray)
- Swift Burst Alert Telescope (BAT) 70-Month Hard X-ray Survey
- Constellations - Black and White Line Artwork, AstroArts Inc.
- Constellations - Black and White Artwork, AstroArts Inc.
- Constellations - Color Line Artwork, AstroArts Inc.
- Constellations - Color Artwork, AstroArts Inc.
- Constellations - Stick Figures, AstroArts Inc.
- Constellations - Color Artwork, Kagaya Studio

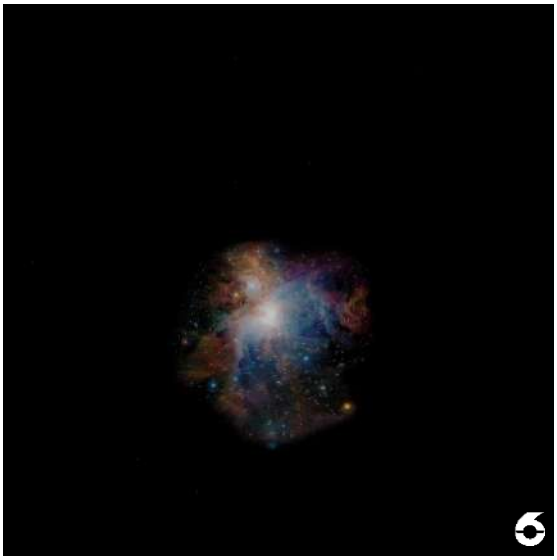
TELESCOPE CONTROL

The planetarium software includes a telescope mode where the user can define the target and interactively pan and zoom in and out. The pan and zoom functions must also be controlled from the keyboard or Xbox Controller.

Have you ever dreamed the real sky in your planetarium? Now you can!

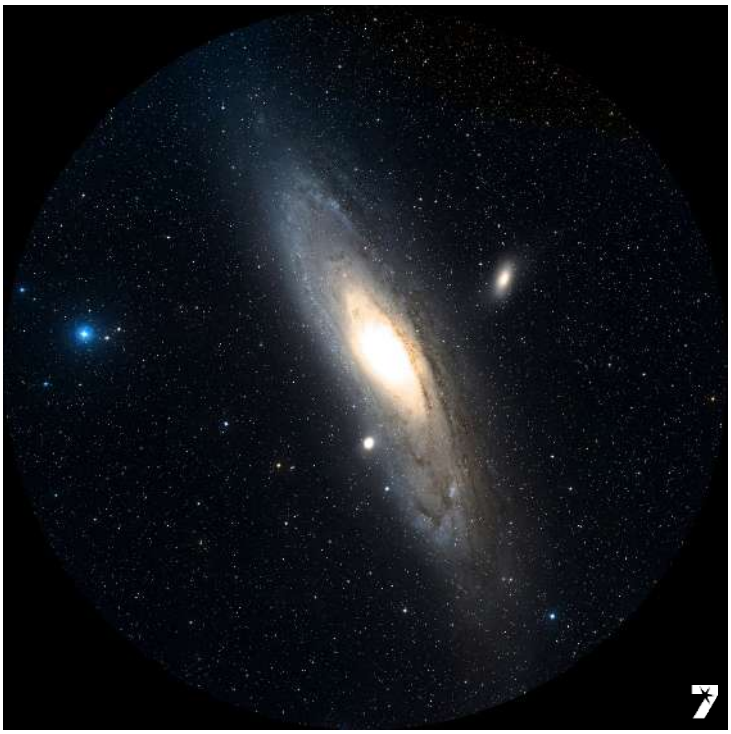
NGC 2237 Rosette Nebula with Sky Survey

From Digistar 6 to Digistar 7: before and after the new Sky Survey

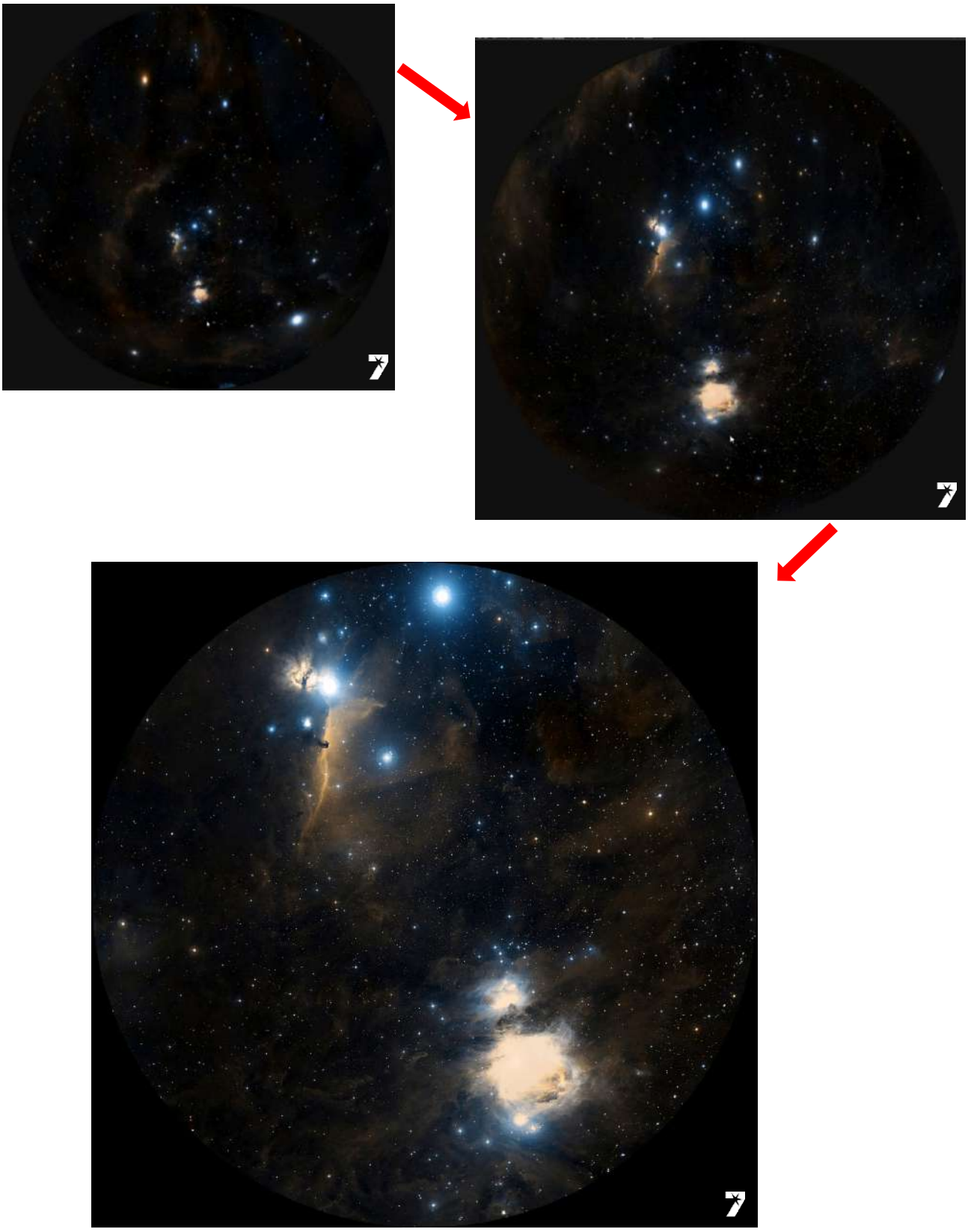


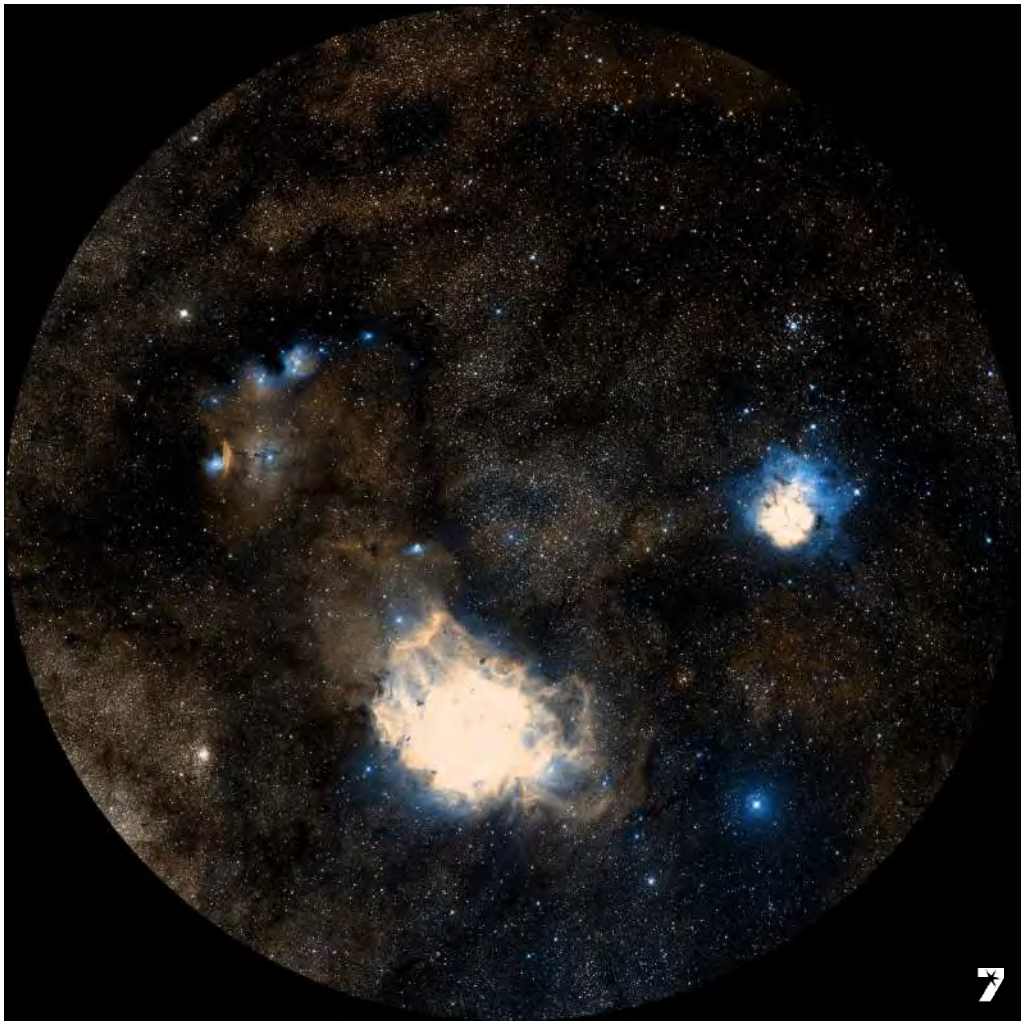
M42 and M43 Nebula

M31 Andromeda Galaxy



Zoom in to the Orion Constellation and M42 Nebula with Sky Survey

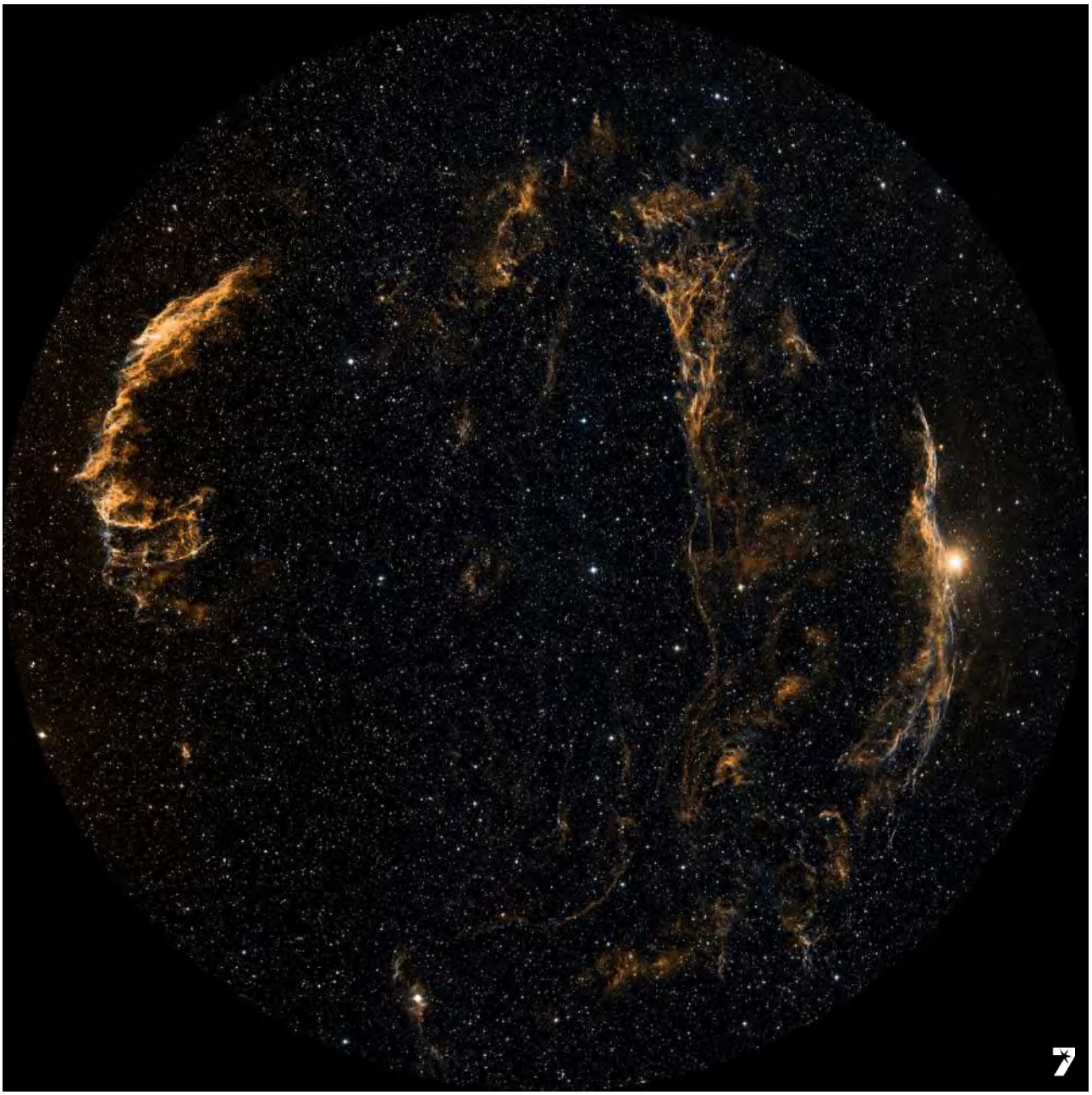




M8 Lagoon Nebula and M20 Trifid Nebula with Sky Survey

Double Cluster in Perseus with Sky Survey

M45 Pleiades with Sky Survey



Veil Nebula in Cygnus with Sky Survey

M101 galaxy in Ursa Major with Sky Survey

Your Digital Telescope

Access Hundreds of Online Digital Sky Surveys

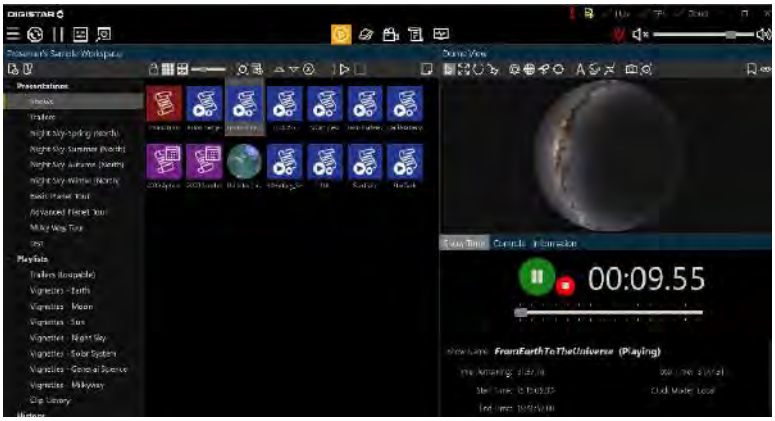
USER INTERFACE

Digistar Lite gives you access to a vast library of content and functionality through a simple and intuitive graphical User Interface (UI). Many features are already included in the Digistar System at the time of purchase, while several plug-ins are optional, as described on the following dedicated pages.

Digistar features the industry's most powerful, advanced, and easy-to-use interface.

Tabs in the User Interface organize 99% controls system functions of a mobile planetarium in a quick and intuitive way.

- ## Show Playback



Playback view is designed for day-to-day presentation of prerendered or pre-scripted shows. Operators can select a show to play by double-clicking it in the Library window or by simply dragging and dropping it into the Interactive Dome View. The view includes a set of playback controls that allows users to play, pause, seek forward and backward and perform precision searching within shows. For Full dome video and the other types as well flat or panoramic video.

- ## Live Astronomy presentations

This view gives users access to the entire library of astronomical models, content and data. Users can search for content with the search field, navigate through a number of pre-organized folders with astronomical content, such as constellations, deep space objects, etc. or easily find objects related to the item currently displayed on the dome. The Digistar UI is divided up into five basic views that organize typical system functions together. These views group commonly used tools together to make the UI as easy to use and intuitive as possible.

Integrated Search Bar

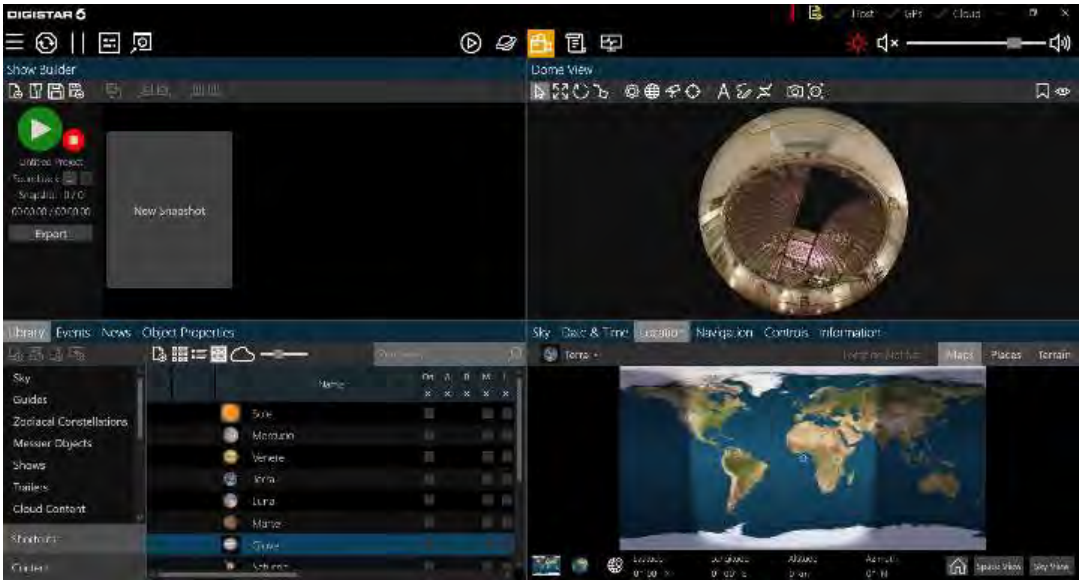
Content is accessible in a variety of ways. Traditional folders allow users to browse the Digistar library. A powerful search engine matches results as users type into the search field and returns results in order of relevance. Additionally, users can organize data for live shows using fully customizable presentation folders. Custom user content can easily be added to the system.

- ## Presentations and Playlists

  Much like PowerPoint presentations, Digistar presentations allow presenters to build live shows one clip at a time and advance through them using a mouse, wireless presentation controller, iPad, mobile device, or Xbox controller. Playlists are designed to play automated sequences, one item after the other. Playlists can even loop for continuous play. Presenter's notes can be added to accompany each item in the presentation or playlist.

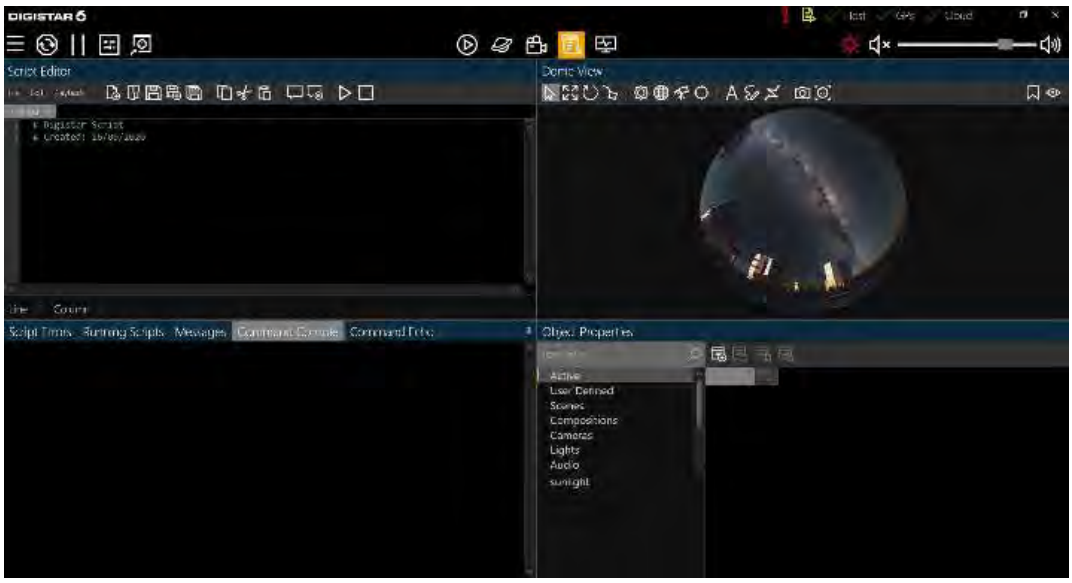
- ## Show Builder (See Optional Plug-ins)

  A visual production tool designed to provide an easy way to create shows for the dome. Drag and drop models, images, audio and video to add content to the Library or Dome View.
  As an alternative, scripting can also be used or user can integrate a script inside a show builder production. Maximum versatility, easy-to-use and fun.



- ## Production

  Power users can create scripts to precisely control the real-time functions. Digistar implements a scripting language that exposes nearly all system functionality. The primary purpose of the scripting language is to allow show developers to create shows.
  The Digistar User Interface provides a Command Console panel in which scripting language commands can be immediately executed.



Library

The Library window is the heart of Digistar where all the content is organized, through a series of folders or from an integrated search bar.

Information window

It's essentially a built-in web browser for Digistar.
The info window can be used to display any HTML or TXT file. In most cases when users click on an item in the Digistar Library, a description appears in the Information window.
This description provides details about the selected item and in some cases provides a historical narrative or scientific analysis. Operators can use this information to enhance a live lecture, as a resource when developing shows, or for personal exploration and learning.

Navigation Tab

This tab provides access to Digistar's built-in navigation functions, including the ability to fly to any named object. Fly-To, utility buttons, logarithmic acceleration slider, free flight mode are provided. Mouse, joystick or gamepad can be used to control the flight.

Date & Time Control Tab

This tab is used to set and adjust the current simulated time. Shortcut buttons are provided to set the time to the current local time, to sunrise/sunset times based on the observer's location and to set the time and date manually. A Gregorian calendar view is provided with indications for new and full moon dates. Drag-edit controls are provided for local year, month, date and time in hours, minutes and seconds. Sliders are provided for Diurnal, Annual, Precession and Proper Motion. For continuous motion, a pop-up window lets users set constant date rates using all common time units. Date step functions are also provided.

Location Tab

This tab is used to set and adjust the current simulated time. Shortcut buttons are provided to set the time to the current local time, to sunrise/sunset times based on the observer's location and to set the time and date manually. A Gregorian calendar view is provided with indications for new and full moon dates.

Drag-edit controls are provided for local year, month, date and time in hours, minutes and seconds. Sliders are provided for Diurnal, Annual, Precession and Proper Motion. For continuous motion, a pop-up window lets users set constant date rates using all common time units.

Astronomy Controls

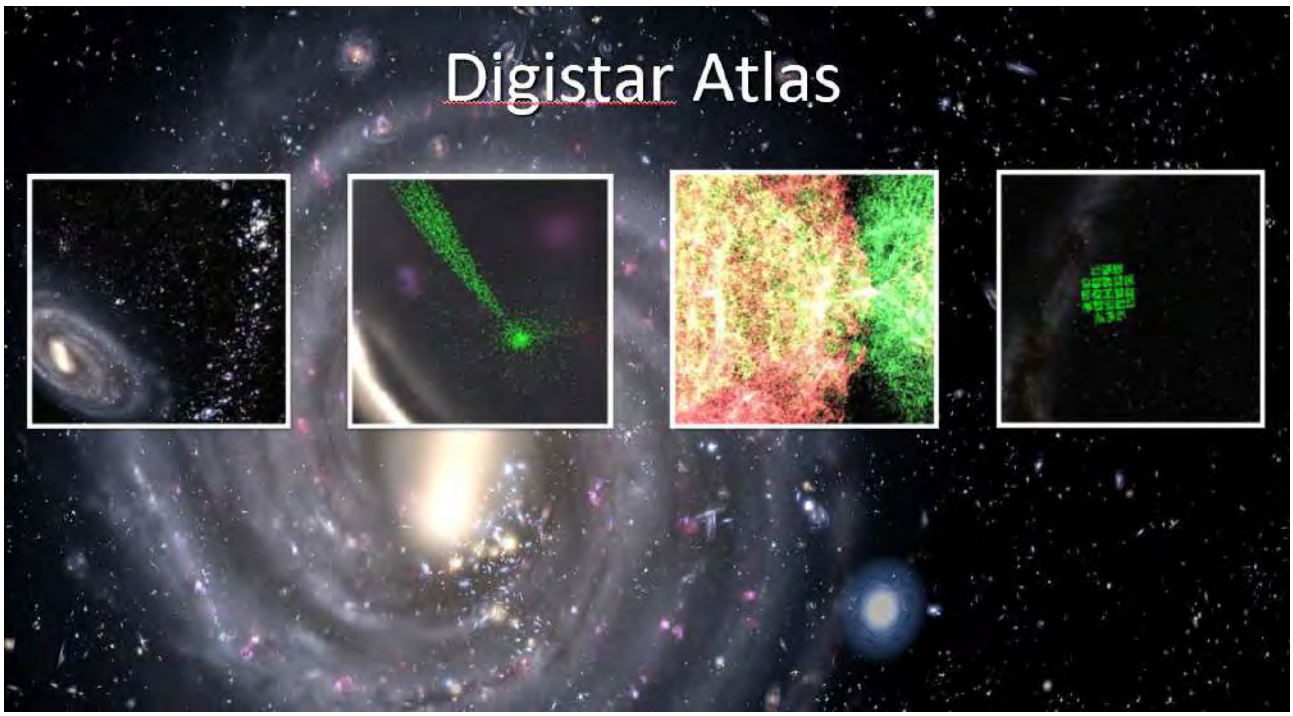
This UI window allows users to turn on various objects in the sky, choose a date and time, set a location on Earth or in the Universe, and navigate through the stars.

Sky Tab

This tab provides shortcut buttons to quickly turn on the night sky and adjust what sky features are displayed. Buttons for morning and evening sky are provided as well as a button for the current sky using the local time. Full preferences are available to set default sky features along with the default morning and evening time offset, if any.

DIGISTAR LITE INCLUDED SOFTWARE FEATURES

DIGISTAR ATLAS – THE MOST COMPLETE DATABASE AVAILABLE

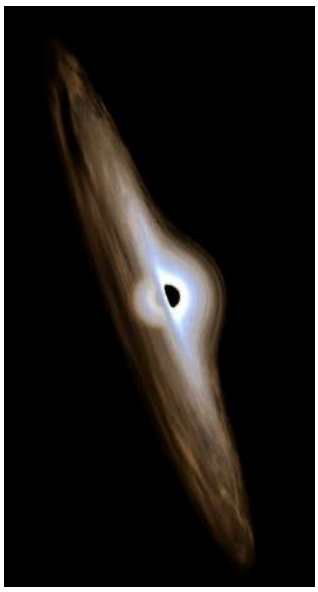


There has been an explosion of astronomical surveys in the last quarter century and the resulting data is easily accessible. Digistar includes a set of astronomical catalogues, processed for display in Digistar and added to the Library. Each dataset marks the positions of a particular class of object. The extent of the datasets ranges from objects associated with the Milky Way galaxy to objects lying at the extent of the visible Universe. This is the most complete dataset available on the market at today.
The Digistar Atlas is included with every purchase of Digistar Lite.

The following is just a quick overview of the highlights of Digistar Atlas datasets:

- **Bright Galaxies**
  The Cosmicflows-3 database, The Third Reference Catalogue of Bright Galaxies, and the HyperLEDA databases are used in BrightGalaxies to show the positions of 23,556 galaxies, with images of galaxies consistent with their morphological type.
- **Exosystems**
  The Digistar 6 system object Exosystems shows the positions of the more than two thousand exosystems included in the Digistar 6 Library. The source for the IDs and orbital elements is the Extrasolar Planets Encyclopaedia, available online.

- **Globular Clusters**
  The Digistar 6 system object Globulars shows the 3D positions of 153 globular clusters orbiting the Milky Way, taken from Bica E. et al. 2006, A&A, 450, 105.
- **HII Regions**
  Positions of 204 HII regions in the Milky Way. Based on Russeil D. 2003, A&A, 397, 133.
- **OB Associations**
  Positions of 88 OB associations in the Milky Way. Based on Melnik and Efremov 1995, Pis'ma Astron. Zh., 21, 13.
- **Open Clusters**
  The Digistar 6 system object OpenClusters shows the 3D positions 481 open clusters in the Milky Way, using data from Vande Putte D.V. et al. 2010, MNRAS, 407, 2109 for open clusters with distances.
- **Planetary Nebulae**
  The Digistar 6 system object PlanetaryNebulae shows the 3D positions of 728 planetary nebulae in the Milky Way, taken from Table 1 of Stanghellini L. and Haywood M. 2010, ApJ, 714, 1096.
- **Pulsars**
  The Digistar 6 system object Pulsars shows the 3D positions of 2475 pulsars belonging to the Milky Way and Small and Large Magellanic Clouds, taken from the ATNF Pulsar Catalogue.
- **Sloan Digital Sky Survey**
  The object SDSSGalaxies shows the 3D positions (using redshift) of 2 230 652 galaxies from SDSS Data Release 14.
- **Sloan Digital Sky Survey**
  The object SDSSQuasars shows the 3D positions (using redshift) of 408 552 quasars from SDSS Data Release 14.
- **Six-Degree Field Galaxy Survey**
  The Digistar 6 system object SixDFSurvey shows the 3D positions (using redshift) of 124 640 galaxies from DR3.
- **Supernova Remnants**
  The Digistar 6 system object SupernovaRemnants shows the 3D positions of 92 supernova remnants from the Catalogue of Galactic Supernova Remnants compiled by David Green of Cavendish Laboratory at Cambridge University, showing those for which reasonable distance estimates could be gleaned from the literature.
- **Two-Degree Field Galaxy Survey**
  The Digistar 6 system object TwoDFSurvey shows the 3D positions (using redshift) of 241 546 galaxies from the final data release.
- **Two-Degree Field QSO Redshift Survey**
  The Digistar 6 system object TwoQZSurvey shows the 3D positions (using redshift) of 49 425 quasars from the final data release.



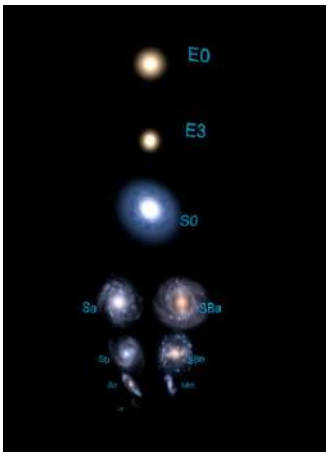
BLACK HOLES

The gravitational lensing effect of Schwarzchild black holes can now be rendered in Digistar Lite.
A black hole can be defined by its Schwarzchild radius, and then be placed in any composition, layer, or draw mode. Anything rendered behind the black hole will be accurately distorted, and characteristic effects such as Einstein rings will be seen. In addition to the black hole, its accretion disk can also be displayed.

The temperature of the accretion disk can be adjusted to make it bluer or redder. It also displays scientifically accurate differential rotation and hotter color closer to the black hole. Unlike competitors that can place the black hole at only one place, the Digistar black hole can be placed anywhere in the universe. With Digistar you can take your guests on a tour of the black hole at the heart of the Milky Way or in the Cygnus X-1 system!

HUBBLE TUNING FORK VOLUMES

Nearly one hundred years ago, American astronomer Edwin Hubble developed a classification scheme for galaxies known as the Hubble Tuning Fork. That representation of the classification scheme has been added to Digistar as several new galaxy volume models.

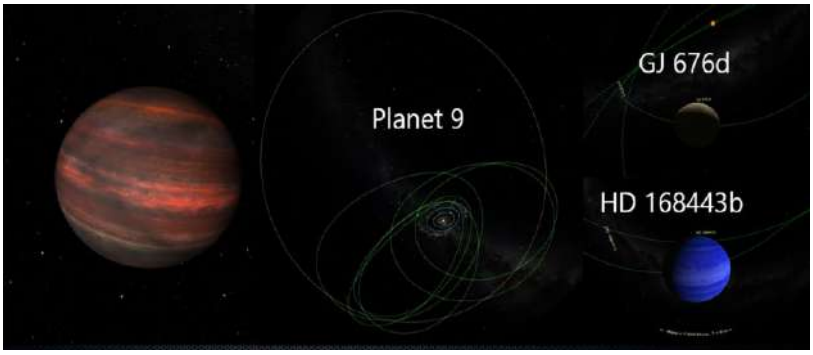


STARFIELDS

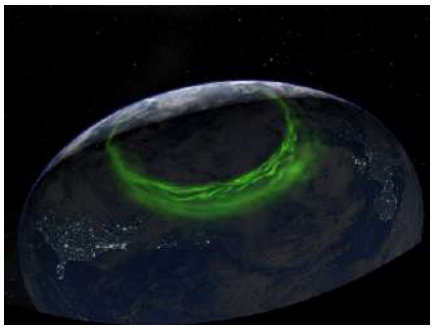
All the known stars are available with the great majority with the exact position in the 3D model of the Universe. The new Gaia and Gaia2 dataset of Digistar Atlas gives you the accessibility of billions of stars!

STARS, MULTIPLE STAR SYSTEMS and EXOPLANETS

Stars are rendered in real time and users may save a preferred starfield look or adjust real-time parameters to provide a wide range of visual results. Digistar Lite includes over hundreds of multiple star systems with published orbital elements that exhibit proper dynamic motion with the passage of time. Barycenter of the system and all orbital elements are available.



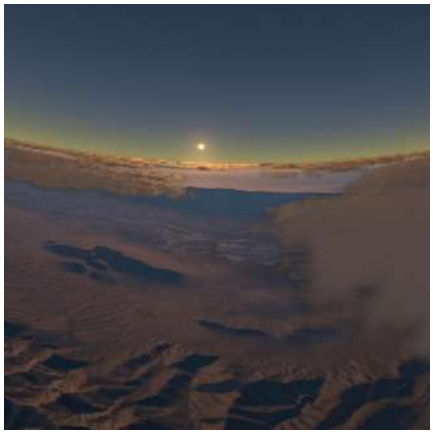
DAYLIGHT AND ATMOSPHERICS



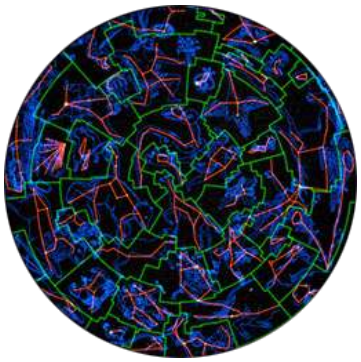
Sky coloring is dynamic with unique sky coloring for sunrise and sunset. The sky properly attenuates during eclipses.
The model incorporates atmospheric turbidity and other advanced atmospheric attributes or features (reddening, extinction, refraction, scintillation, relight scattering, ionosphere scattering, auroras, clouds and skyglow). To the right is a 3D real-time model of an Aurora as view from space.

SUN

Digistar's Sun shares many of the starfield features described above. In addition, the surface of the sun rotates appropriately with the passage of time. The color and diameter of the sun can by adjusted dynamically to simulate the life-cycle of the Sun. All stars demonstrate limb darkening. The Sun's corona becomes especially prominent during total solar eclipses. You can also show the sun's motion relative to the solar system barycenter. Solar magnetic field is provided as well as different wavelengths.

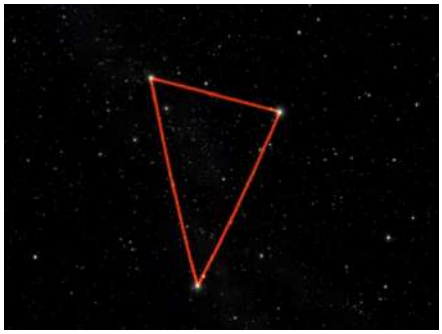


Digistar 7 visualization of the sunset from aerial view over Utah



CONSTELLATIONS

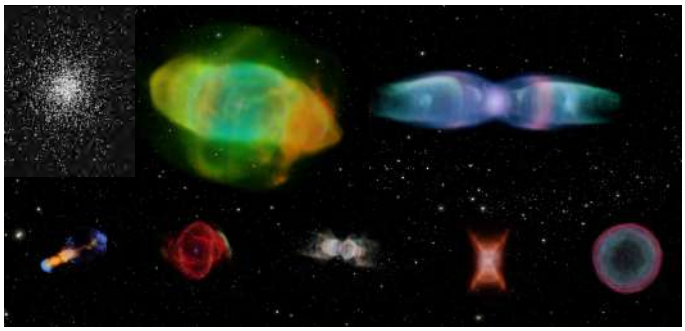
All 88 constellations are provided in: Stick figures, Illustrative forms, Starry Night Influenced, IAU boundaries, Constellation labels. The default constellation stick figures are a hybrid of IAU and H.A. Rey. We also have a pure IAU set and the set of figures that comes with Digital Universe. All stick figures include stellar distance and proper-motion information. Animated constellation lines are included.



ASTERISM AND ASTERISM/SKYCULTURE GENERATOR

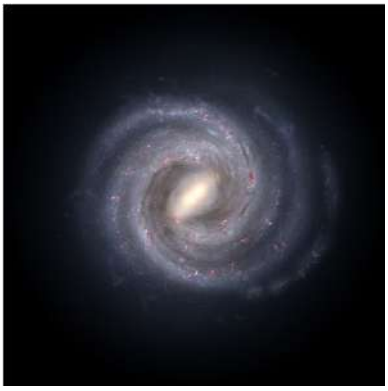
Digistar Lite includes more than 30 common asterisms with both stick figure and illustrations. Animated asterisms lines are also included. An included utility can be used to modify existing constellation stick figures or create entirely new figures and asterisms.

MESSIER OBJECTS, NGC-IC OBJECTS, VOLUMETRIC NEBULAE AND CLUSTERS



A selection with several different models of volumetric nebula is supplied, provided by the Institut für Computergraphik, TU Braunschweig and Visualisierungsinstitut, Universität Stuttgart.

All models are volumetric, and user can fly through.



MILKY WAY

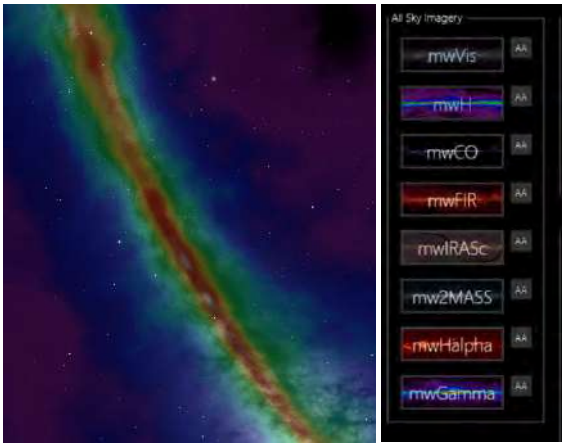
The Milky Way (MW) is the galaxy of which Earth and the Sun are part of. It is a spiral galaxy and we are located at a distance of approximately 8 kiloparsec (26000 light years) from the center of the galaxy. While it is well known that the MW is a spiral galaxy with a central bar, the complete detailed structure is not well known. Several spiral arms have been identified, but even the exact number is still controversial. It is interesting to compare the different views, face-on, edge-on and intermediate angles. 3D model can therefore be helpful to better understand how a particular galaxy might look like from a different direction.

In the 3D model it is possible see positions and sizes of the spiral arms, the central bar as well as the approximate regions where galactic dust is located. On the scale of the model, the location of the most famous star forming regions, such as the Orion Nebula are too close to the Sun to be included specifically.

There are four major characteristic features represented:

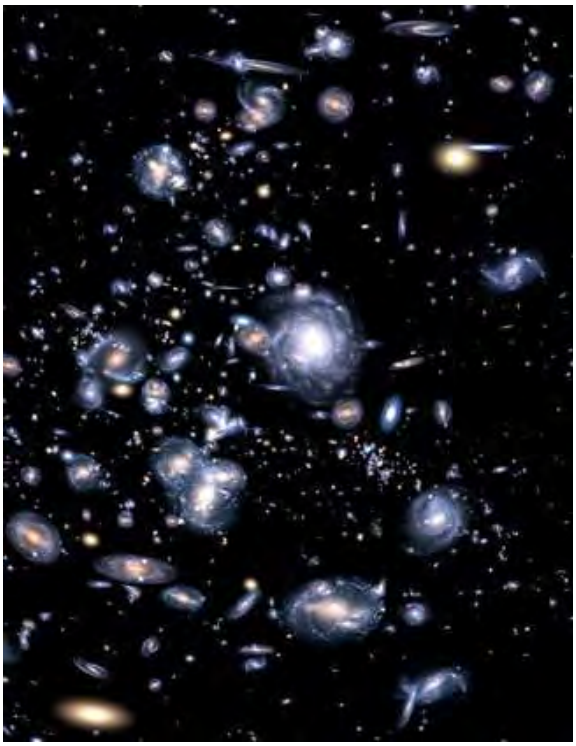
- The stellar spiral arms, as luminous spirals, emerge from the central Bar.
- The central Bar, the light orange region at the center of the galaxy, is mainly constituted of old and cool stars.
- Dust lanes, the regions of microscopic solid particles accumulate along dark filaments and spots, are visible all over the galaxy.
- Star forming regions (HII regions)

MULTI-WAVELENGTH (NON-VISIBLE) SKIES



Digistar includes the following all-sky surveys:

Radio (408MHz, CO, nH), UV, EUV (171Å, 405 Å), X-ray (HEAO, Rosat 0.25keV, 0.75keV, 1.5keV, RASS background 1-4-7), Gamma Ray (Egret 3d, >100MeV, <100MeV, Comptel), IR (IRAS 12 µm, 25 µm, 60 µm, 100 µm, COBE, SFD and SFD dust, WISE), WMAP Seven Year Survey (multiple), IRAS/COBE 100u Gal actic Dust, 2MASS Infrared Stars, Planck Cosmic Microwave Background, Planck Mass Map.

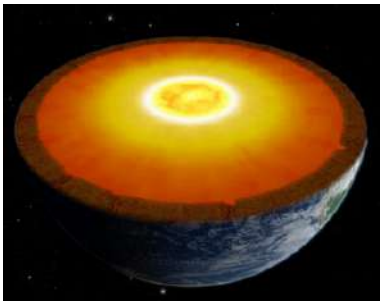


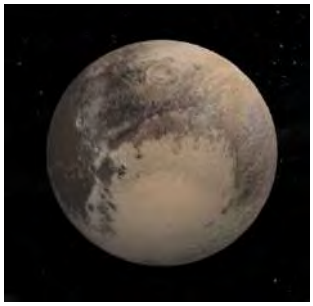
GALAXYS

Additional 3D galaxy models are also provided, including models of various prototypical galaxies. Several millions of galaxies are visible in real time in exact free 3D models.

PLANETS AND OTHER BODIES

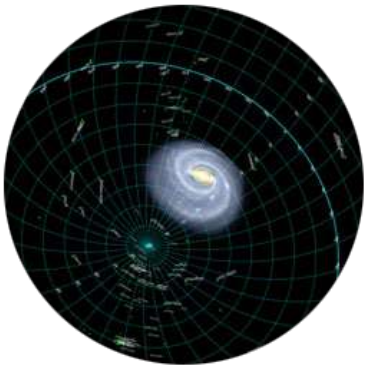
Planetary highest realism, both for color and surface rendition, and for high resolution Earth, Moon and Mars surface maps. Interior of planets is available too.





GRIDS AND GUIDES

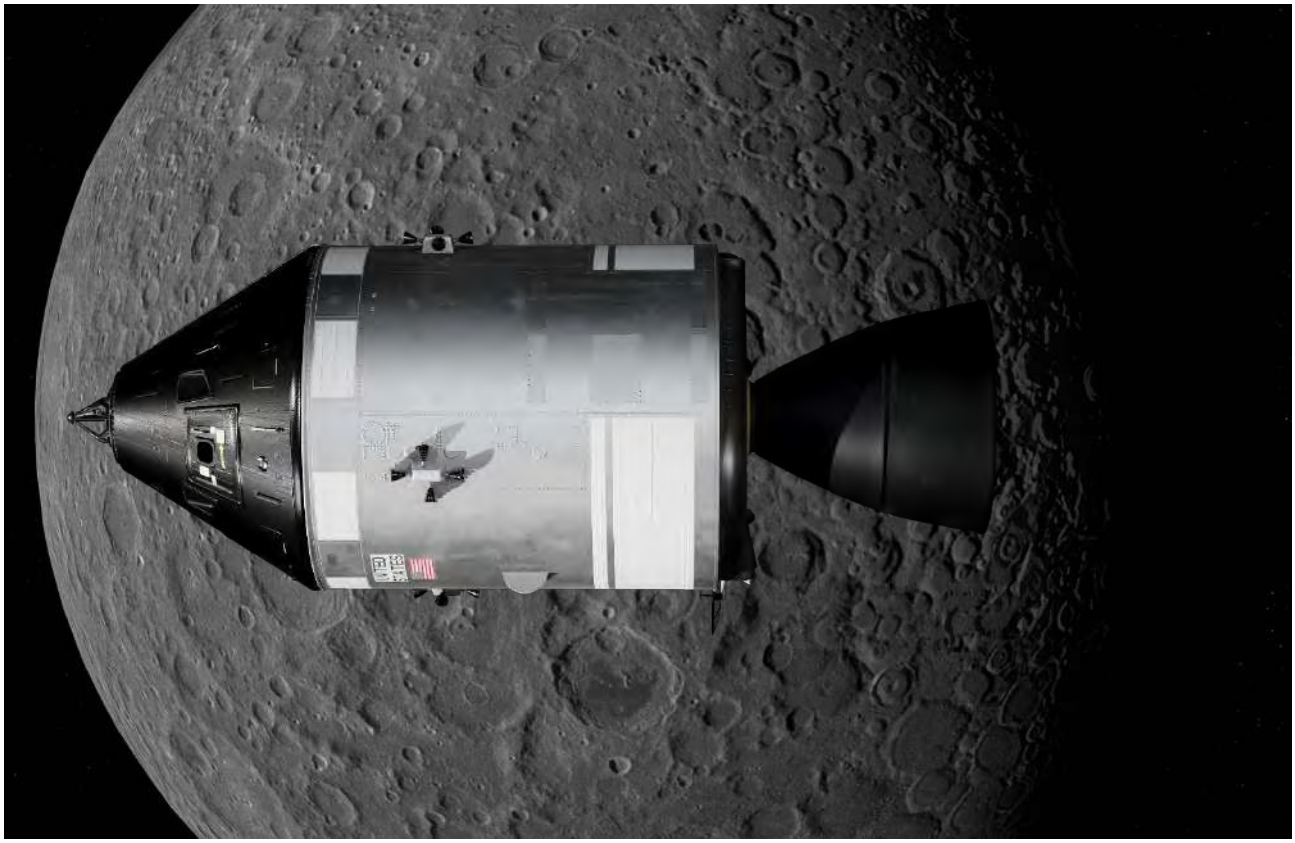
Digistar Lite includes several built-in grid and guide objects. A partial list follows: Celestial and Galactic spheres and coordinates, Ecliptic, planetary graticules, meridian, equator, tropics, lat and long, pole lines, meridian and cardinal points, azimuth and elevation, grid planes, precession circles, arrows, pointers, cursors, reticules, crosshairs and many others .



ECLIPSES, TRANSITS, SATELLITES, ISS, SPACECRAFTS, 3D model

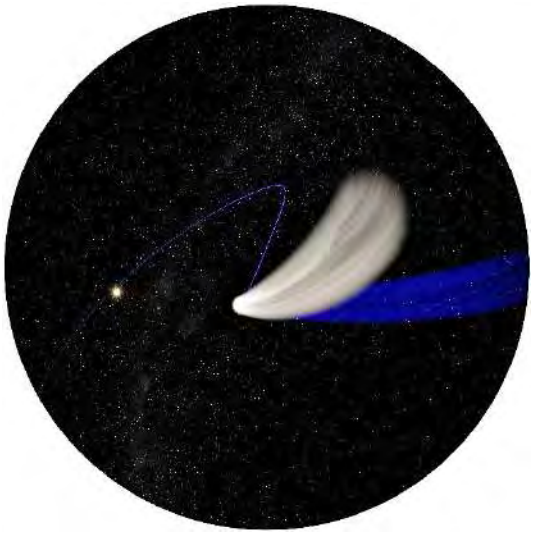
Digistar accurately simulates both lunar and solar eclipses for all solar system bodies. Eclipses are visible from any astronomical object, whether in first-person or viewed from a distance. Eclipse shadows correctly intersect planetary ring systems where present. Just as in nature, it is possible to observe multiple eclipses simultaneously.

Digistar can also show meteor shower, earth satellites in real time, asteroids with real time proper motion and spacecrafts just as quick examples.

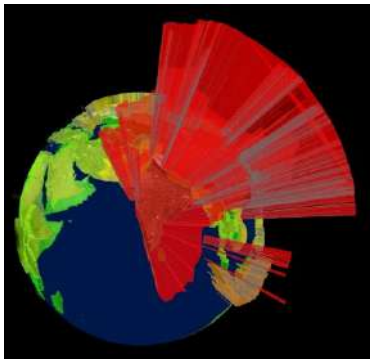


COMETS

Comets are automatically and realistically visualized with both ion and dust tails that assume their correct orientations with regard to the Sun.
Digistar comets offer a high degree of customization, allowing adjustments for the size, color, brightness, glow size, and texture of a comet's coma, dust tail, and ion tail. The length of a comet's tail adjusts automatically based on its distance from the Sun, making a comet's position at perihelion easily observable.



ASTRONOMY VISUALIZATION METADATA (AVM) and KML (KEYHOLE MARKUP LANGUAGE) SUPPORT



Digistar provides support for images tagged with AVM data. AVM data can be directly transferred to any "astroImage" object within Digistar 6, and the imagery will be automatically placed in the sky and properly scaled according to the AVM specification. Currently users can obtain AVM-tagged imagery from the Hubble, Chandra and Spitzer space telescopes.

Digistar's support for Keyhole Markup Language allows for visualization of data on the dome.

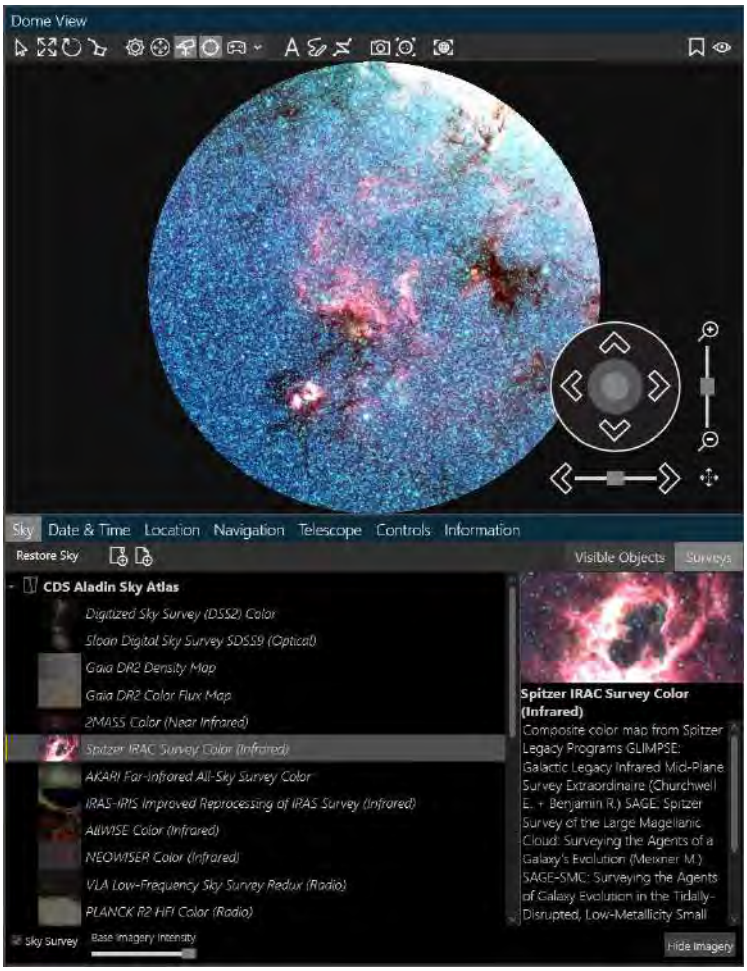
INTERACTIVE DOME VIEW

The interactive Dome View is a premiere feature of the User Interface. The Dome View is normally seen as a window within the UI but it may also be undocked and resized or displayed full screen. It offers direct interactive control of nearly anything displayed on the dome.

Simply point, click and drag resources from the Digistar Library or from Windows Explorer directly onto the Dome View. Pick an object in the Dome View to access object controls and information, or simply adjust its position.

Zoom and move through the scene. Fly along the surface of a planet. Capture the current image out to disk. You can even draw on the dome!

These controls and more are all accessible from the Dome View toolbar.



ASTRONOMICAL LESSONS PROVIDED

STARRY NIGHT LESSONS

Digistar 6 also provides support for Starry Night Lessons:

- Elementary Education
- Middle School Education
- High School Education
- Higher Education (coming soon)

While the Starry Night software is not included within Digistar 6, for those who have the Starry Night Lessons, we have created Digistar 6 Control Panel pages and scripts for fulldome real-time astronomy sequences that support each of the lessons. This allows teachers and students to follow along with the lessons in Digistar 6.

In some cases, curriculum examples have been extended and enhanced using Digistar 6's advanced capabilities to provide a richer, more engaging student experience.

To learn more about Starry Night Lessons, please visit:
http://www.starrynighteducation.com
Starry Night Curriculum and Starry Night Education are products developed and provided by Simulation Curriculum Corporation.

Digistar 6 Screen

PASS

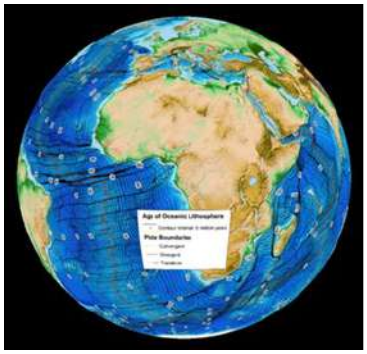
Developed by the Lawrence Hall of Science, University of California, the **Planetarium Activities for Successful Success™** curricula is an extremely valuable resources to make your live, interactive lessons easier and more effective. These lessons are developed and maintained by the Lawrence Hall of Science, the public science museum and research center for K-12 education at the University of California, Berkeley.

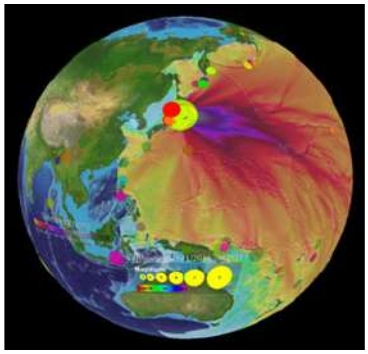
DIGISTAR USER GROUP OBJECTS (DUG)

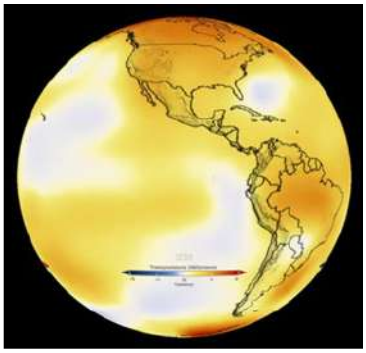
Skypoint offers **free registration for 1 year** at the time of Digistar Lite purchase, giving you the access to the extensive international community of Digistar Users. DUG is a source for collaborations, scripts sharing and a place where you can interact with other experienced users to improve your planetarium projects.

If your system also includes the Digistar Cloud, you will have also the access to the DUG Library which is an extensive resource of Digistar content in which users can share videos, audio, models, images, or other great content with the Digistar community composed of more than 100 fixed and mobile planetariums.
In the DUG Library there are more than 10,000 models/scripts/shows. Here's a partial listing of some of the non-astronomical science content immediately available for Digistar users to download and display:

- Human body models
- Dinosaurs
- Doppler effect demonstration scripts/models
- Electromagnetic spectrum
- Energy states (photons, electrons, neutrons, protons, etc.)
- Morphing 3D fractals, interactive Mandelbrot set, Klein bottle, Lorenz attractor, mobius strip, nautilus shell
- Large selection of military and civil aircraft models
- Buckyball structures
- Animated 2d and 3d Sierpinski figures
- A full suite of 3D carnival rides
- Cosmic ray showers (COSMUS)
- Earth plate boundaries
- Real time Earthquake data display
- Fulldome timelapse video from Arches National Park and Canyonlands NP
- Science Center of Iowa's complete weather show
- An enormous fulldome image library with allsky pictures from around the world (hundreds of allskys).
- Surface visualizations of the Spirit Mars rover landing site (Gusev Crater)



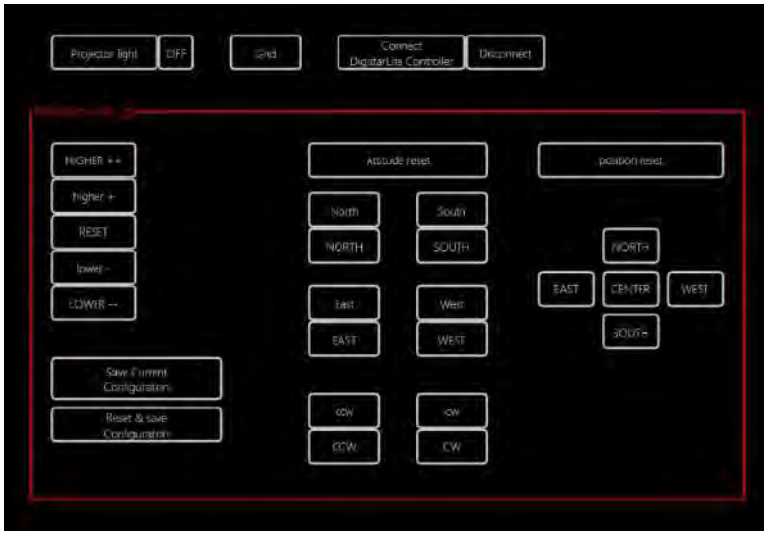




EASILY ADJUST THE LEVELLING, HEIGHT AND HEADING

One of the most time-consuming operations for a portable planetarium is to level the projection to match the dome horizon perfectly. Our competitors simply do not have a solution for this, and just use the manual or motorized adjustments available on the projectors.
Neither manual adjustment nor motorized adjustment are sufficient.

These methods can level the projector but they can't raise or lower the projection to match the desired dome height (in case of ring domes or fixed domes) or simply put the projection above the visitor's head.



Digistar Lite is supplied with a full digital control for the levelling and the height: just put the projector in the center of the dome and adjust it roughly using the projector's included level adjustment. Then use the dedicated Digistar Lite Control Panel to adjust the levelling (X-Y axis) and the height (Z axis) efficiently and smoothly!

The control page includes an altitude-azimuth grid which is very useful for the levelling and adjust the heading.

With the heading controls you can set the south projection position where you want in the dome, to be exactly in front of your audience, without physically moving the projector like our competitors do.

DIGISTAR LITE *DRAWING ON THE DOME*

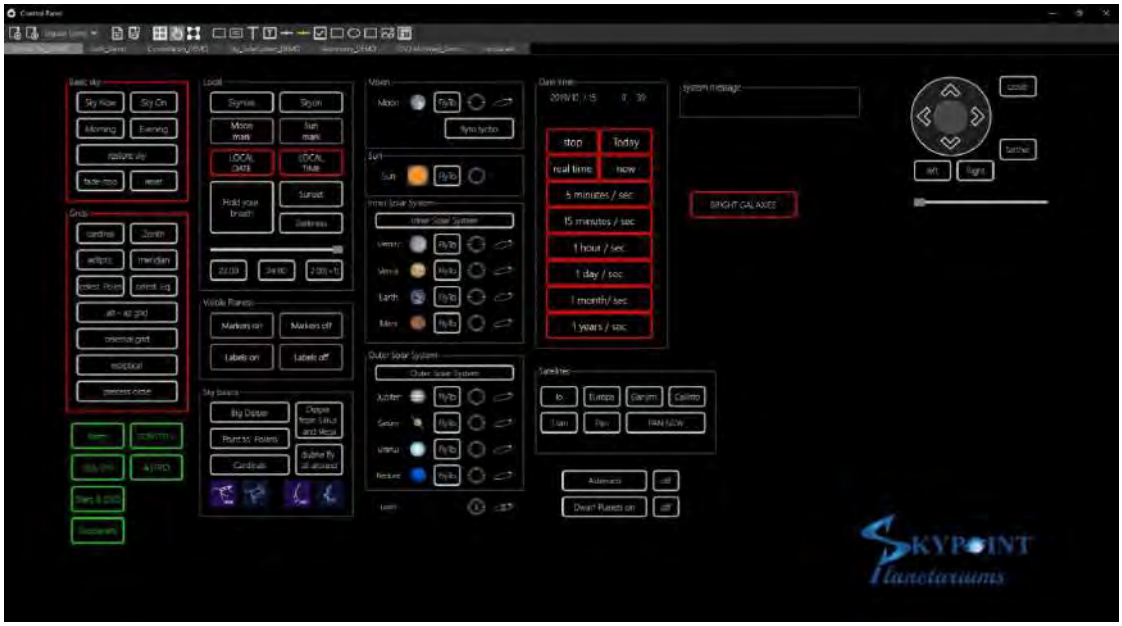
Software provided with the Digistar Lite allows users to draw on the Interactive Dome View with their finger. The operator of the Planetarium can draw on the dome any type of line connecting stars or marks (changing color and size), in real time.

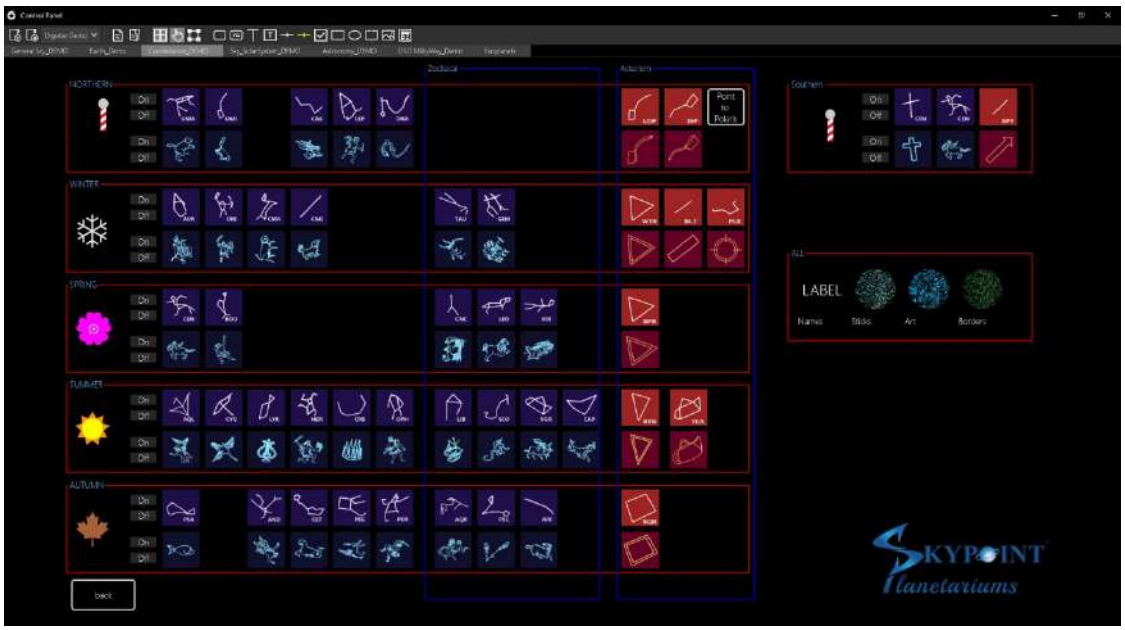
MULTILANGUAGE

Digistar is fully Unicode compliant, allowing on-dome, real-time text to be displayed in virtually any language or character set. The language used for object labels is a preference setting. Digistar already includes labels for the most common languages. Creating label files for new languages is a relatively simple task. English, Italian, Spanish, French, German, and many others are already available.

CUSTOMIZED CONTROL PANELS

Digistar Lite includes four special control panels to facilitate the use in a mobile dome, with all major, most used content, objects and commands ready to use. The User can easily modify and adapt these control panels to their special needs.



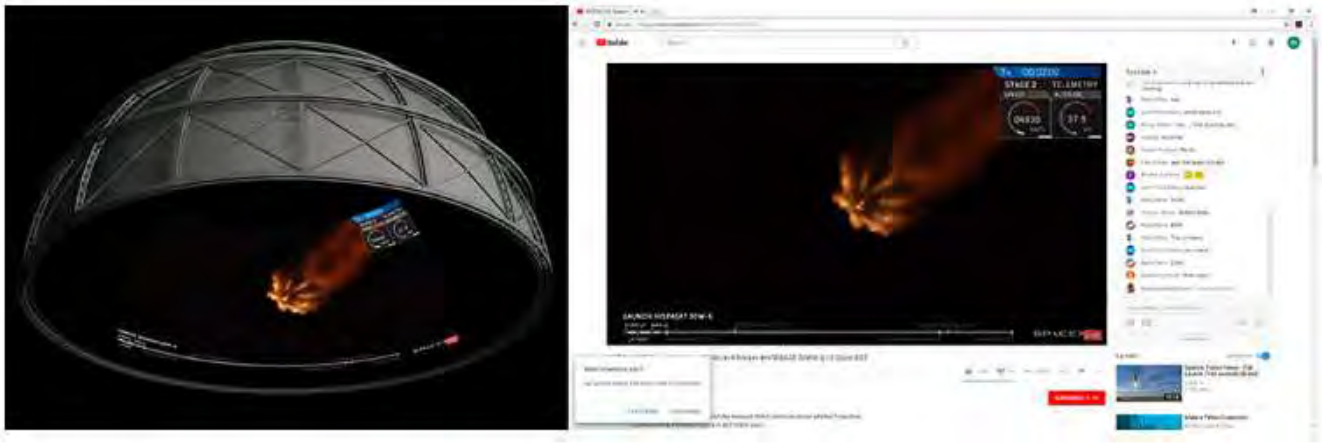


DESKTOP STREAMING (FOR FIXED VERSION ONLY)

This built-in feature allows streaming of any content on your computer to the dome in a window of any size and shape.

This allows anything from PowerPoint, YouTube or any Windows application to be live streamed onto the dome in HD (presentations, files, graphics, video, Console game, Hollywood Movie, drawings…)

Content can be displayed on the dome in any shape, including rectangular, spherical, and fulldome; or you can define your own. In addition, almost any NDI network stream may be displayed in Digistar.



Desktop Streaming from the main PC desktop directly to the dome.

DIGISTAR LITE OPTIONAL SOFTWARE UPGRADES

SHOW BUILDER

Show Builder is a visual production tool designed to allow users who are not familiar with scripting in Digistar to create real-time shows for the dome. Using Show Builder, the user creates a scene on the dome, takes a snapshot, then modifies the scene, taking snapshot after snapshot.

These snapshots assemble side-by-side on a visual timeline or "storyboard." Users can easily adjust snapshot durations and transition times using the time duration controls below the snapshots. When played, scenes transition gracefully. The user may also add a script or fulldome video to the storyboard by dragging the item from the library to the desired position on the timeline. Show Builder projects may be exported as scripts for sharing or use in the Digistar Library. Users can edit, modify, delete, or add scenes at any time.

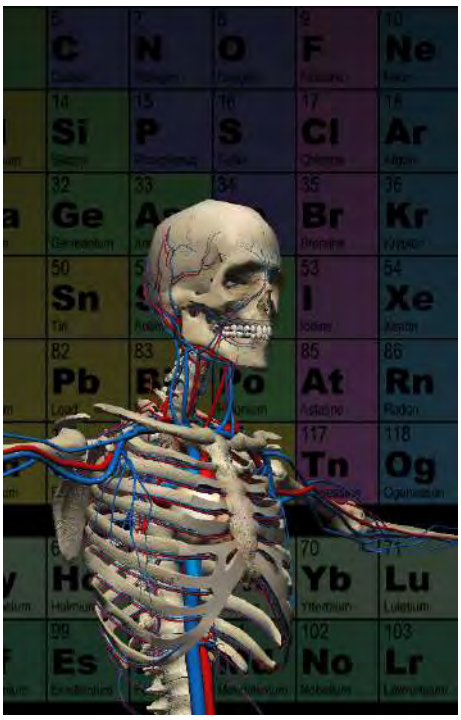
HI-RES PLANETARY SURFACES

Digistar's new terrain feature automatically transitions planet models to high-detail terrain models when nearing the surface of the Earth, the Moon, and Mars, without textures paging or tiling onto the model. In addition, any number of high-detail texture images can be downloaded from within the UI and displayed for virtually any named location on Earth.

A View Terrain location button navigates you to the selected location. Our high-resolution terrain elevation and photographic texture maps for the Moon and Mars come from the very best sources available, to provide the most up-to-date information. Fly over the Alps or over the city planetarium. Orbit around the Moon to simulate views seen by the first Apollo astronauts.

Detail levels on the Moon, Earth and Mars


Advanced Atmospheric and Terrain
visualization with Digistar 7



STEAM
SCIENCE, TECHNOLOGY, ENGINEERING, ARTS, AND MATHEMATICS LIBRARY

STEAM

STEAM stands for science, chemistry, technology, engineering, art, biology and mathematics. The new Digistar STEAM library contains a growing collection of content with a suite of control panel pages for interactively exploring the scenarios in detail.

Access also several sets of 3D, high-quality models of the Human Body, Parts of the Human Body, Biology, Viruses and Bacteria, and more, including a set of Hominids skulls.

STEAM now also includes real time Weather and Climatology.

The entire Digistar STEAM content library includes:

Art

- Color Angles
- Color Wheel
- Rotation Angles
- Spirograph

Biology

- Blood Type Inheritance
- Contrast Illusion
- Corrective lenses
- Jointed Skeleton
- Human Anatomy
- Human Brain
- Phyllotaxis
- Wheel Illusion

Chemistry

- Boyle's Law Experiment
- Dalton's Law
- Molecule Explorer
- Periodic Table
- Stoichiometry Analogy

Earth Science

- Atmospheric Pressure
- CAPE
- Cloud Water
- Dark Sky Weather
- EPIC
- Latitude and Longitude
- Ocean Surface Current
- Precipitable Water
- Relative Humidity
- Temperature
- USGS Earthquake
- Weather Underground
- Wind

Engineering

- Artillery
- Balance Beam
- Balance Lever
- Critical Angle Box
- Four Stroke Engine
- Lissajous Robot

Mathematics

- 2D Vector Addition
- Audio Frequency Graph
- Connect Four
- Decimals As Fraction
- Function Graphing
- Fundamental Law of Fractions
- Interactive Unit Circle
- Multiplication
- Pie Chart
- Pie Fractions
- Sine-Cosine Wave

Physics

- Atwood's Machine
- Elevator Weight
- Interactive Pendulum
- Lens Simulation
- Magnetic Field Simulator
- Michelson-Morley Experiment
- Mirror Simulation
- Prism Refraction
- Period and Frequency
- Space-Time Grid
- Total Internal Reflection

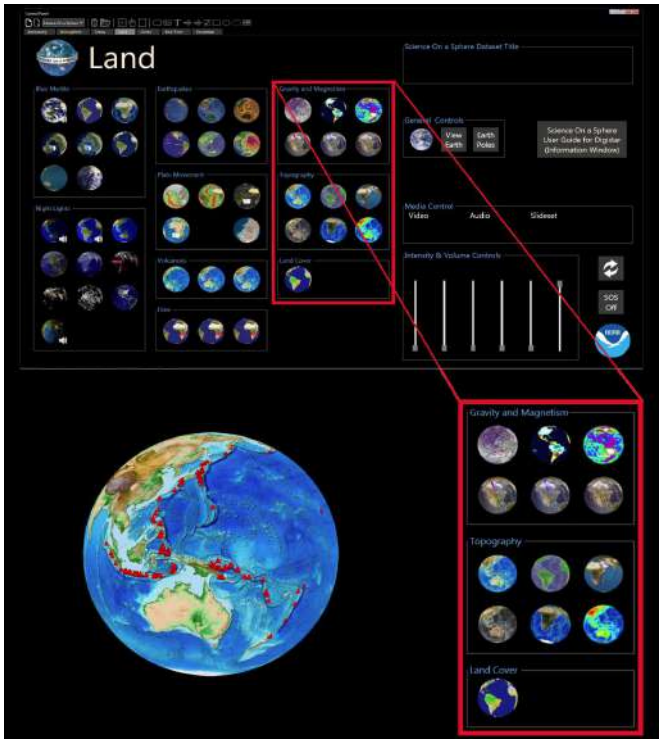
SCIENCE ON A SPHERE, NOAA VIEW, SOLAR DYNAMIC OBSERVATORY

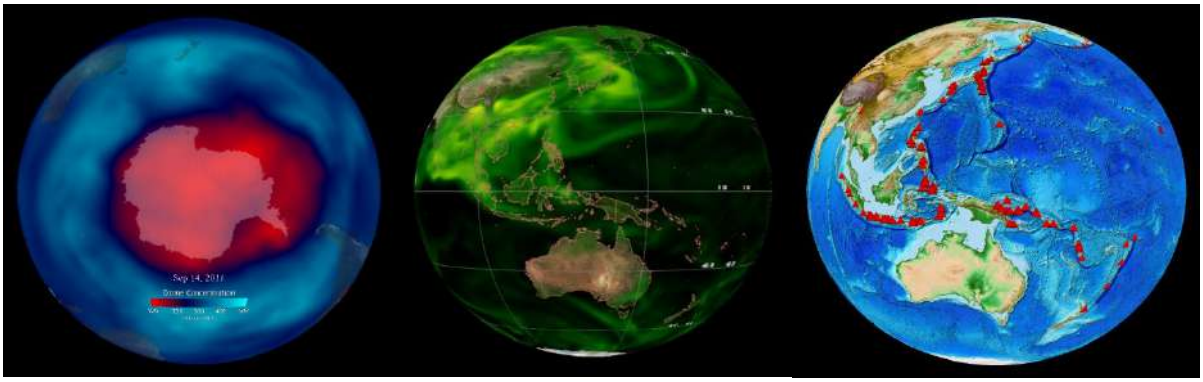
Science on a Sphere® (SoS) is a tool that visualizes large National Oceanic and Atmospheric Administration (NOAA) data sets. Datasets come from a much wider variety of sources: NOAA, NASA, JPL, and many, many other scientific institutions.

NOAA is the Science on a Sphere curator, working with scientists to bring data to SoS, which is then built into Digistar so that the operator may access more than 350 unique data sets for instant viewing on the dome. The SoS datasets are divided into six categories:

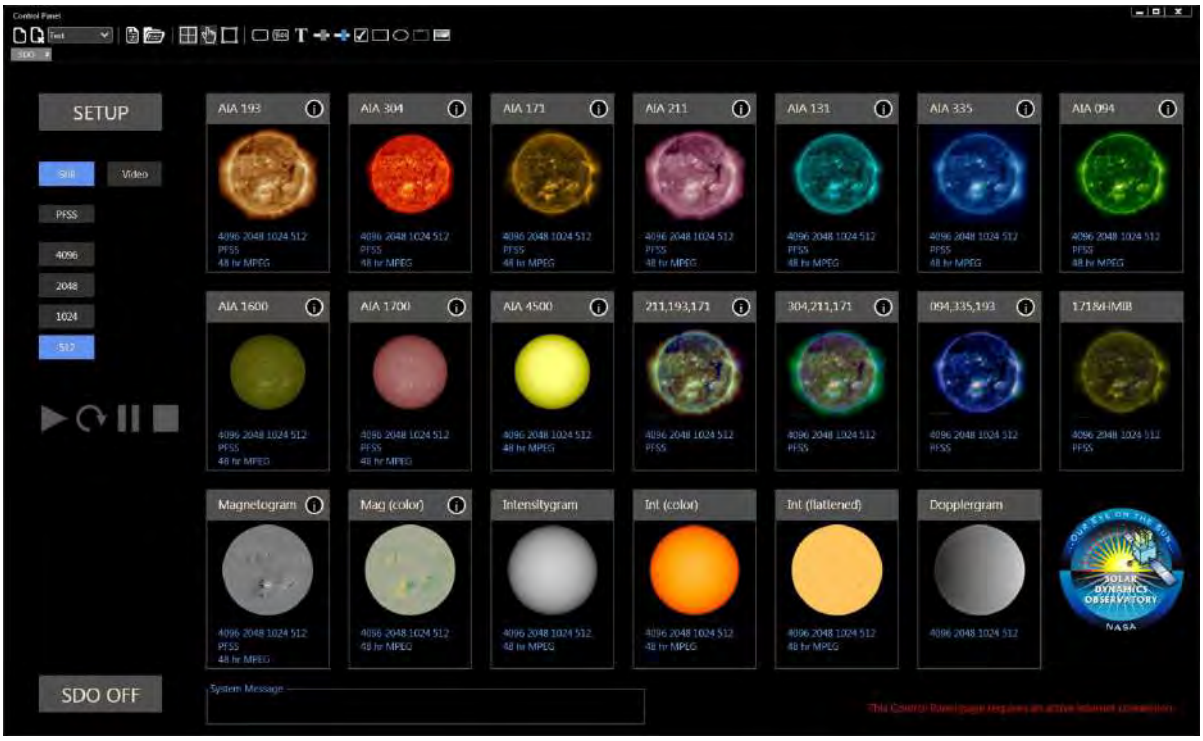
- Astronomy, Atmosphere, Land, Ocean
- Models and Simulations
- Real-time (25+ datasets which are updated daily, and in some cases, hourly)

The set includes the new NOAA View dataset.





Digistar can show the sun in a variety of layers and textures in the Solar Dynamics Observatories (SDO) control panel window. Users can display various textures, images, and videos in several different wavelengths directly to the 3D model of the Sun. The control panel can be connected to the Internet for real-time, dynamic updates.



DIGISTAR CLOUD

Digistar has an optional "always-on" connection to a cloud library where users can share videos, audio, models, images, or other great content with the Digistar community. Digistar users can choose to upload content with the click of a button. Digistar automatically searches the local Digistar system to find all elements needed for a scene, and packages them together into one file for convenient upload to the Digistar Cloud Library.
Content stored in the Cloud displays automatically and users can search by name, tags, content creator, file type, etc., to easily find useful content. Users can download content with a single click. Digistar automatically adds the content to all PCs on the local Digistar system for immediate display on the dome.

DATA2DOME (INCLUDED WITH DIGISTAR CLOUD)

Purchasing the optional Digistar Cloud, the User will be able to access the new Data2Dome library.

Announcement from ESO:
ESO is proud to publicly launch a running version of the cutting-edge Data2Dome project in partnership with Evans & Sutherland and the International Planetarium Society. This exciting new free system for planetariums delivers the complete collection of images and videos from ESO's frontline telescopes at La Silla and Paranal, as well as from ALMA, ESA/Hubble — and through NASA's and IPAC's Astropix project: NASA's Spitzer Space Telescope, Chandra X-Ray Observatory, GALEX, WISE, and NuStar, as well as ESA's Planck and Herschel space telescopes. Data2Dome also delivers stunning fulldome images and videos, 3D models and music, as well as the latest press releases and blogs from all astronomy and space organisations worldwide, all at the click of a mouse — and for free! Data2Dome's AstroCalendar module provides daily feeds of significant astronomical events such as spacecraft launches, planetary alignments, historical anniversaries and more.

Astronomy is a dynamic discipline, with spectacular discoveries, images, videos and other data published every single day. Planetariums around the world have always wanted to share these new developments, but it often takes days or weeks to transform the latest news into planetarium content. The vision of the Data2Dome system is to seamlessly integrate astronomy data into planetarium systems in almost real time, allowing planetariums to immerse their visitors in the latest discoveries the day they are announced.
The database is carefully curated to include high-quality material and to save presenters' time.

Every morning, planetarium presenters can access interesting news and fresh datasets, and download them — for free — to use in shows throughout the day. Presenters can report on events as they take place or incorporate a segment of "Last week in astronomy" into their programme.

This streamlined flow of information will transform planetariums into dynamic venues that are always up to speed, bringing the science of astronomy to life under the dome.

Data2Dome is now available to many planetariums worldwide using Evans & Sutherland's Digistar system. If you are a presenter using the Digistar 6 system in your planetarium, open the Data2Dome tab to make use of these free resources right now.

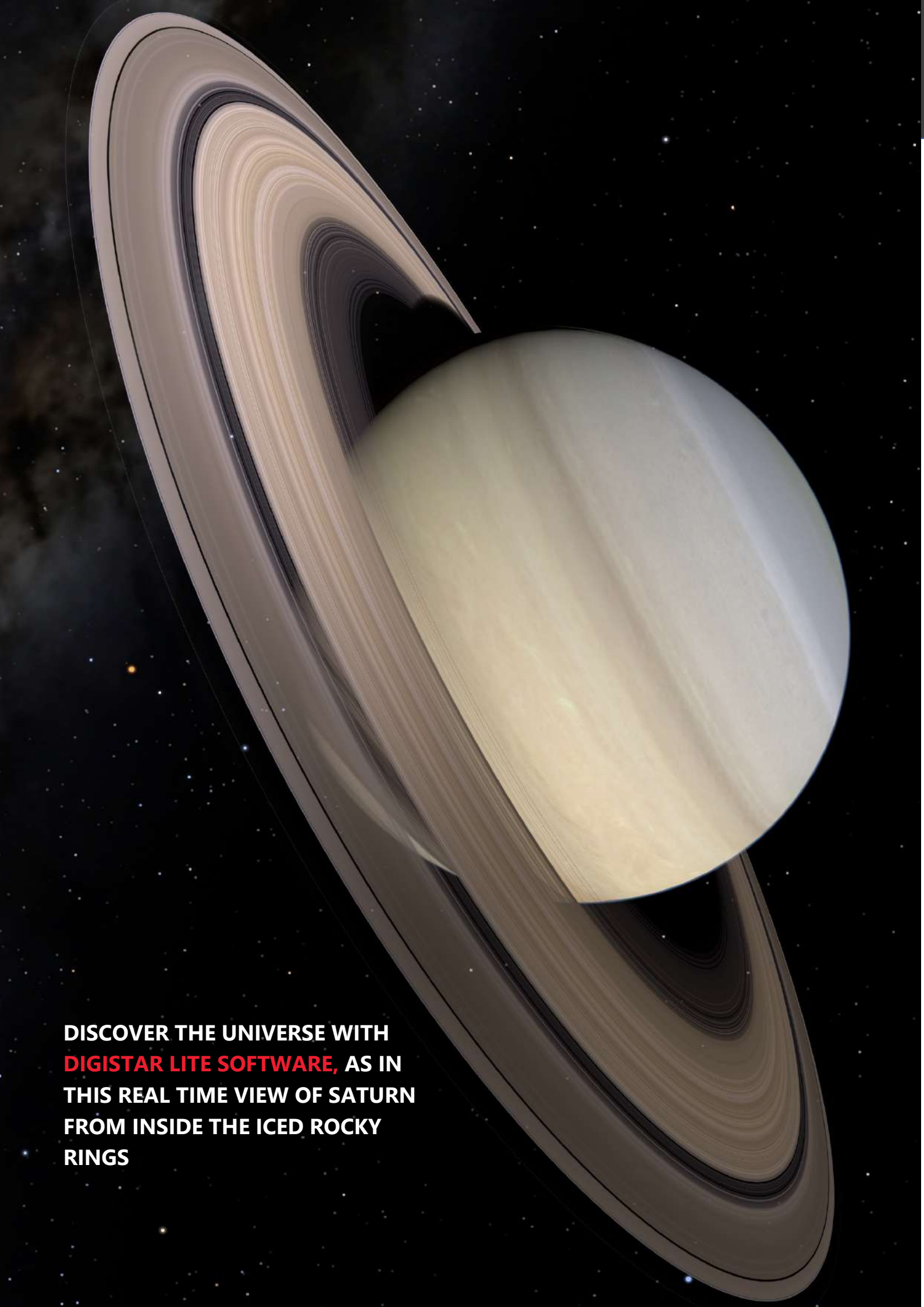
UNITY PLUG-IN

Unity is a leading real-time game engine that allows users to create games in 2D and 3D. E&S has developed a new plugin to use within the Unity3d game engine that will allow the game's audio and video to be streamed into a dome theater.

A single script attached to a scene camera will handle streaming the scene out in a format that can be easily rendered across the dome.

It requires the computer running the Unity application to be on the same local network as the Host and have an NVIDIA graphics card and driver that supports NVENC.

Users are already creating Unity based games and scenes that have been uploaded to the Digistar Cloud Library and are available for immediate download. With the Unity plugin, your guests can do everything from fight aliens to visit Viking hamlets!



DISCOVER THE UNIVERSE WITH DIGISTAR LITE SOFTWARE, AS IN THIS REAL TIME VIEW OF SATURN FROM INSIDE THE ICED ROCKY RINGS