



Applications on the iPad

Here's our quick run-down of the applications your iPad came pre-loaded with.

App name	Use for...	Requires WiFi?
3D Sun	Lets you explore the Sun in different spectra by zooming in and out and rotating to give different perspectives. There is an image and video gallery from the Solar Dynamics Observatory. Links are available to news items regarding the sun and up-to-date current conditions of the sun with alerts for new sunspots, solar flares, and auroras. Great for using to complement, or in place of, the solar telescope activities, and describe 'solar weather'. Don't forget to visit the iSun Trek website (http://www.suntrek.org/blog/), and follow their Facebook feed for bite-sized, accessible updates about the sun.	✓
Angry Birds Space	This game follows the premise of its prequel, "Angry Birds", where birds are flung via sling shot at pigs, which have stolen their eggs. Other than 'realistic physics' or gravity and so forth, there was nothing particularly educational in it. However, enter NASA who worked with the developers of the game to produce this app. Game developers have incorporated concepts of human space exploration into the new game. From the weightlessness of space to the gravity wells of nearby planets, players use physics as they explore the various levels of the game set both on planets and in microgravity. Not really something you can use for short sessions, but maybe something to consider when you have people for a while? Or to display as describing the physics of sending probes to other planets, and encourage the audience to download the app which is available as an apple <i>and</i> android app.	✗
Arianespace	Contains information about Arianespace and the three launchers. There are also images, videos, and links to news articles. Good source for information regarding the three launchers and Arianespace.	✗
AstroApp	Contains a database of all Space Shuttle Crew astronauts and missions. Information for each astronaut includes photo and bio. Information for each mission includes which astronauts flew in what particular mission. You can also put a picture of yourself into an astronaut suit and share online.	✗



Best ISS 3D	Lets you explore the ISS in an interactive 3D format. You can zoom in and out and rotate the screen to focus in on the section of the ISS you wish to explore. You can also view the ISS from an astronaut's point of view when they are on a space walk. There is also a gallery of images and videos of the ISS.	x
Cassini HD	Highlights images returned by the Cassini probe. The gallery is organised by views of Saturn, its rings, and the most prominent moons. Images can be saved as favourites with the icon in the top right corner. A menu and a drop-down list of images can be accessed in the top left corner.	x
Comet Quest	A game in which the player must first complete 4 training missions: 'deploying the lander', 'recording discoveries', 'avoiding hazards', and 'transmitting data to Earth'. You then apply each of the skills as you go on ESA's Rosetta mission to study comets. The app has a 'learn more' section where you can get information about comets and the Rosetta mission which studies comets.	x
ESA App	Europe-specific news about space activities, pictures and videos. Best for keeping up to date with projects and activities, and for inspiration. 'Latest videos' is worth a look.	✓
ESA Bulletin	Allows you to download an electronic copy of the ESA Bulletin to browse through. Useful to get bite sized information on updates from ESA. Good for finding inspiration of topics or images, ways of referring to various projects/missions/experiments, etc.	x
ESA cryosat HD	Contains information regarding ESA's CryoSat ice mission and an image gallery of photos from the mission. There are also videos and links to current news items from the mission. You can explore a 3D model of the satellite, payload and platform. There is even an option to track the current location of the CryoSat satellite.	
ESA due	The 'Data User Element' app is an aggregation of information on various projects that have been carried out based on earth observations. Some of these have the purpose of engaging the public, but for the most part is relevant to industry. Nevertheless the detailed information on the projects can provide examples of real-world applications of earth observation technologies, some providing links which you may find of inspiration in producing an activity or show on the subject.	x
ESA oshi	This is an online showcase of Herschel images and animations. It includes a weblink to more information for each image and animation.	✓
ESA wis	This app tracks in real-time the position of a satellite selected from the menu list and predicts where and when it will be visible from your actual position. The tracking display mode shows a 3D model of the earth with the satellite orbit path and current position. The prediction display mode displays the satellite pass across the sky as seen from your location during a selected visibility time interval.	✓
ESO Top 100	View the top 100 images from ESO in either full screen or index form. Images can be saved to photos for quick access later.	x



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Exoplanet	Investigating planets found outside our own solar system. The database can be updated, to browse all exoplanets. Can display information about its size, its sun, how it was detected and shows an animation. You can also view all the known planets in the milky way in a mind-blowing fashion, where you can zoom in, seeing various constellations, see the orbits, where voyager 1 and 2 are, etc. Gives a great way to show the sorts of distances involved (as you have to pan and zoom and zoom and zoom and zoom... You can also create graphs that show correlations between various factors. You can also select a subset of planets to look at, e.g. our solar system. The background information provides explanations of what exoplanets are and how they're detected. 'Exoplanet News' can highlight interesting updates to the database.	x
FLIR Tools	You'll find all the information you need in the 'help' section of the settings menu for any troubles you're having, but importantly it allows you to import and analyse any images you have taken. You can place multiple spots on the image, change the palette, place line, square or circle metering areas, which display the positions of max and min temperature. You can change the temperature range shown by dragging up and down on the key on the right-hand side. Mostly useful for optimising images you have taken, or using to investigate temperatures in more detail. Can be linked to dropbox, you can save your images and share via various other means also.	x
Galaxy Zoo	Lets you review images of galaxies taking by the robotic Sloan Digital Sky Survey Telescope and classify them by answering straight forward questions. Part of a large scientific project to understand how the galaxies formed. Interesting to look through, possibly get audiences involved with, but definitely to encourage those who can, to download the app and get involved in real science themselves. Update unfortunately, last time we searched for this, it was unavailable in the UK app store. Keep your eyes peeled for its return!	✓
Google Earth	Explore the surface of the Earth through satellite images. Contains facts and trivia for many locations around the world as well as images on the bottom of the screen. Can save locations to maps for quick access later.	✓
GoSatWatch	Lets you view the current positions of satellites and the International Space Station over the surface of the Earth. You can speed up time to see where satellites will be at any given time, and more specifically if you look at the 'passes' menu it will let you know when the next few sightings over head will be, based on your location.	✓
GoSkyWatch	Shows the objects of the night sky in their current position in the night sky. Changing the orientation of the iPad (i.e. over your head) will let you see the current position of these objects. You can also change the time/date, location, and visible brightness of objects in the night sky. The magnifying lens on the left top corner will help to locate planets, constellations, and other objects on the screen and gives a few facts about each object.	x
Hubble Top 100	View the top 100 images from Hubble in either full screen or index form. Images can be saved to photos for quick access later.	x



Mars HD	<p>Exploring the surface features of Mars in more detail. Use 'Highlights' to jump to features of interest, has extra information about what they are, historical aspects of observation, trivia, and so forth, plus extra links to find out more on the web. You can switch between different types of highlight including the location of different spacecraft, and you can also turn on the atmosphere. You can switch from earth time to mars craft time. Use 'Guided Tour' in help to browse through the different highlights. To further investigate the terrain you can toggle the sun position marker or switch to terrain view. Excellent way to present what Mars looks like. You can even switch it to red green 3D!</p>	<p>x</p>
Molecules	<p>Allows you to search for molecules (top left corner) and view them as either ball-and-stick or space-filling models. The models can be rotated and oriented in any direction. The app contains a colour key (top right corner) of the atoms in the molecules. You can zoom in or out to get a closer look at the atoms in the model. Good way to present the sorts of outcomes of structural studies, of the sort carried out at STFC's facilities.</p>	<p>x</p>
Moon HD	<p>A virtual guide to Earth's Moon. Exploring the surface features of Moon in more detail. Use 'Terrain features' to jump to features of interest, has extra information about what they are, historical aspects of observation, trivia, and so forth, plus extra links to find out more on the web. You can switch viewpoints from 'above globe' to 'Earth telescope'. You can view where spacecraft have landed on the moon. To further investigate you can place a compass on top to orient yourself between the position of the Sun and Earth relative to the moon. Excellent way to present what the Moon looks like. You can even switch it to red green 3D. You can also switch the Moon's orientation (i.e. north-up, south-up, etc) and its location relative to Earth.</p>	<p>x</p>
NASA App HD	<p>Exploring everything NASA. Includes links to videos, images (which have supporting information) and is well cross-referenced to relevant missions and activities. Has A LOT of written material with information about technology, planets, comets and more, linking to relevant NASA projects (which do include some STFC instruments). Best for reading up on specific missions and browsing a calendar of launches, ie using to find information and inspiration rather than for material to present direct from the app.</p>	<p>✓</p>
NASA Science	<p>Divided into four categories: 'Effects of space weather on Earth's technology', 'changes in Earth's sea ice and ice sheets', 'other habitable planets', and 'was Mars ever a habitat for life?'. Each section explores the science and current space missions that can be used to answer these four questions. Great for looking up information.</p>	<p>x</p>
NASA TV	<p>Links to what is currently being broadcast on NASA TV.</p>	<p>✓</p>
NASA Viz	<p>Highlights new discoveries of our solar system and beyond with visualisations. Stories can be saved for offline viewing and put into a favourite list for quick access later. Images from the stories can be saved by holding down on the image until a menu appears.</p>	<p>✓</p>
NBI Colliderscope	<p>Live visualisations of collisions taking place in LHC – intended as a piece of art. Useful as a visualisation to stimulate discussion – or just to look pretty and be relevant to a show/activity on particle physics.</p>	<p>x</p>
Particle Zoo	<p>Gives very brief information about the characteristics of particles – discovered and theoretical, as well as some other sub-atomic concepts. Basic graphics, and better to use for personal exploration rather than presentation.</p>	<p>x</p>



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Planet Finder	In this app, you can choose a planet or constellation from a list on the left and a black crosshair will appear on the screen. If you move the iPad until the crosshair is in the centre of the screen, you will be pointing directly at the object's location in the night sky. Constellations, stars, and satellites are available for additional costs.	x
Portal To The (PTT) Universe	Displays press releases and blogs from the likes of STFC, ESA, ESO, NASA, and direct from astronomy research institutes (simply switch news from news to blogs using the drop down menu in the top right hand corner). All intended to be accessible to non-physicists.	✓
PS @ ATLAS	Take an interactive tour of the ATLAS detector of the LHC by physically moving the iPad to look around as the video plays. Has photos and diagrams to learn more about ATLAS and its components.	x
pUniverseHD	Lets you view the sky from your location, see an animation of a model of the planets orbiting in the solar system, view the sun and planets and see what time they each rise and set in the sky, and see what objects are visible in the night sky and where to look. There is also an interactive diagram of the Sun in relation to other stars, a lunar phase calendar, a location diagram for the moons of Jupiter and Saturn, a list of sighting opportunities for the ISS based on your location, and a view of the ISS's current location. There is a summary sky report for the evening's night sky and a link to up-to-date astronomy news.	x
SatelliteInsight	A game in which the mission is to help the GOES-R satellite collect data using its six instruments. Blocks of six different colours (representing each instrument's data) fall and fill the game's grid. When three or more blocks of the same data are together, they can be tapped on the screen to be collected. Similar to tetris, you can play as long as the grid doesn't overflow with blocks. The GOES-R satellite will gather more weather information and monitor the Sun.	x
SDO (Solar Dynamics Observatory)	View the Sun through different spectra in both images and video. You can also view a magnetic field model of the Sun. Great for using to complement, or in place of, the solar telescope activities, and describe 'solar weather'. Don't forget to visit the iSun Trek website (http://www.suntrek.org/blog/), and follow their Facebook feed for bite-sized, accessible updates about the sun.	✓
Space Images	Contains images of the sun, planets, asteroids, comets, spacecraft, dwarf planets, and the universe. There are also videos and 3D images. Images can be filtered by top rated and latest images. They can also be saved into a favourites folder for quick access. The app also has a search option to look for specific images.	✓
Spacecraft 3D	Allows you to investigate a three-dimensional augmented reality version of NASA spacecraft, like Curiosity. You simply print the marker, and place it down, point the iPad with the app open at the marker, and you can explore the craft. You can zoom in, rotate, switch on animated motions (if available) and take photos of the craft in, on, under or over various things... like under peoples' feet! Also provides basic information about the missions. Useful to project in shows (tap the screen to remove the menu options and go full screen) and also to give to students/families to hold and investigate for themselves.	x
SpacePlace	Has images, videos and articles as well as links to puzzles and activities. Images include astronomy picture of the day.	✓



TED talks	Clips of interesting talks, either to show or learn from. Has to be set up in advance as most talks are too long to be shown in entirety.	✓
The Scale of the Universe	Shows an interactive scale of the universe. You can drag the slider bar to zoom in and out of the graphic. While zooming in, different objects of the Universe are shown based on their scale of size. This is a good visualisation of how large and small things are in relation to each other.	✗
Worlds Apart	Lets you view the planets in the solar system and where they are located relative to each other. Allows you to change the date and time at which you are viewing the solar system and adjust the rate at which you are viewing 'real-time'. Requires full version for some features.	✗
Dropbox	A simple cloud-based storage and sharing tool.	✓
Skype	Communicate easily with peers across the globe, for free! We've found this really useful for being able to show and tell within the project team.	✓
Calculator	Useful for working formulae out on the go, or being able to work for a problem on a projector for a masterclass.	✗
Videolicious	An easy to use video-making tool to put together quick clips using the camera on the iPad, or other compatible files. Simple drag and drop!	✗
QR reader	Does what it says on the tin – point at a QR code to be shown the hidden message! Could be used to produce your own, think trails.	✓
Simple Paint	Want to get a point across by drawing a diagram freehand to a larger audience? Simply hook your iPad up to a projector and use this simple paint app.	✗

Let us know about your favourite apps, what's worked well, what hasn't!

www.exploreyouruniverse.org