

Let's do launch

THE SPACE SHUTTLE first soared into orbit in April

1981 and has since become an instantly recognisable icon of our age. However, only seven launches remain before the fleet is retired.

Scott Snowden suggests you witness this spectacular sight first hand before it's too late



PHOTOS COURTESY: NASA, KSC

This week marks the 40th anniversary of the Apollo 11 moon landing, when Neil Armstrong stepped on to the dusty lunar surface and uttered those immortal words. The Apollo programme was the realisation of John F. Kennedy's vision to take the human race to space. Sadly he didn't live to see the success of his efforts.

Even as Apollo 17, the last manned spacecraft to visit our nearest celestial neighbour in December 1972, was being launched, plans to develop a re-usable orbital transport system – what would eventually become known as the Space Shuttle – were on.

Launched from the same location as the Apollo missions, and even from the same launch pads, the Shuttle represents the wonder of space exploration to a new generation. But time is running out to take in the extraordinary experience of actually witnessing a Shuttle launch. Only

seven missions are scheduled before Discovery, Atlantis and Endeavour are decommissioned. They will be replaced by the Orion programme.

Planning a trip to watch a Shuttle launch from the Kennedy Space Center (KSC) at Cape Canaveral takes more organisation than most holidays. First, you must consult the mission schedule (available on NASA's website). It's important to note that dates for launches can change and almost certainly will. Planning at least a few months in advance is advisable, but within four weeks of launch, the date rarely changes and even if it does, it is not by more than a day or two.

What is of paramount importance is purchasing tickets – this can be done online at the KSC website but they sell very quickly. The most recent launch of *Endeavour* on mission STS-127 on June 13 sold out in about three minutes and only went on sale one month

before launch date. The best way to monitor what's going on is to regularly check both the KSC and NASA websites and sign up to receive news updates by email.

To see absolutely everything at the KSC, like many theme parks in the US, you really need at least two days. Launch day itself – if it's scheduled during the daytime – is largely taken up by securing a good spot, absorbing the atmosphere and patiently waiting for that all-important moment: the lift off.

The KSC will, ultimately, be full. Queues for the rides and attractions will be longer on launch day and not all the scheduled tours around the facility will operate. Those that do will only run in the morning and be shorter than normal as non-essential personnel are strictly kept away from the key facilities and launch pad.

An early start is recommended as the car parks soon fill up. The Center

Atlantis liftoff as seen from the causeway.

Right: The Kennedy Space Center (KSC), showing the mock-up shuttle orbiter and external tank and solid rocket boosters.

Right below: Endeavour lands at the KSC – the primary landing site. The colossal VAB can be seen behind.

Right bottom: The plaque at pad 34, commemorating the death of the Apollo 1 astronauts.



public viewing area, and for the very best view of the launch this is where you want to be. It's a section of road a couple of miles long that has an unobstructed view of launch pad 39A. You'll need to specify 'causeway view' when you buy tickets online for launch day, as for obvious reasons these are the most sought after. They're worth every nickel of the extra \$20 (Dh73).

You can still watch the launch from the Visitor Complex, but the view you've seen on TV where the clouds of smoke bellow out around the sides of the launch pad as the shuttle gently lifts off and leaves the gantry behind, is from the causeway – despite being some seven miles away. If you're not lucky enough to get tickets for this, the best place to watch from is at the bottom of the life-size rocket booster and external tank replica at the northernmost point of the KSC Visitor Complex. From here, there are fewer trees hindering the view.

Gradually, the crowds gather and kill time talking about all things Shuttle. If you obsess about space, you are among friends here. And if you think you know about previous missions, payloads and astronaut profiles, your knowledge will almost certainly be tested.

The activity increases and a frenzied sense of excitement is noticeable at about T-minus three hours as T-shirts and caps bearing the mission patch for this particular launch begin to sell out from the gift shop. If it's hot weather, the sunshades and fold-out easy chairs also sell quickly.

Large speakers placed all around the KSC and causeway broadcast the live communications between mission

opens at 6am for a daytime launch and there is a lot to see and do, even at this early hour. Make sure the big 'visitor's card' you will have received with your ticket is clearly visible in the window of your car as you pass the entrance gate – if you don't have this on launch day, you will be denied entry.

Reaching early in the day is perfect because it gives you ample time to saunter around the complex and take everything in, or even gently stroll through the impressive Rocket Garden. Set out here are life-size replicas of the *Redstone*, *Atlas* and *Titan* rockets that first put NASA astronauts in space. You can also climb aboard the *Mercury*, *Gemini* and *Apollo* capsules and get an idea of the cramped quarters the astronaut pioneers had to endure.

Another of the many attractions at the KSC is the Shuttle Launch Experience, which simulates being strapped to 6.8 million lbs of thrust

and propelled into orbit. The best time to enjoy this is while you wait for the actual launch. The experience begins with an entertaining and engaging video explanation into the science of lifting the 2,029,203 kg combined weight of the orbiter, rocket boosters and external tank off the launch pad and into the skies, after which you begin to appreciate how much effort is required from so many people for each launch.

Once you're strapped in, the ride begins and if you're not already overawed by the anticipation of the real shuttle blast off, participating in a simulated launch is guaranteed to send tingles down your spine.

As zero hour draws near, the number of people at the KSC seems to increase exponentially as does the length of queues for everything, including food and drinks. Packed coaches leave the Visitor Complex for the 'causeway'

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Above: The G-force simulator at the Astronaut Hall of Fame.

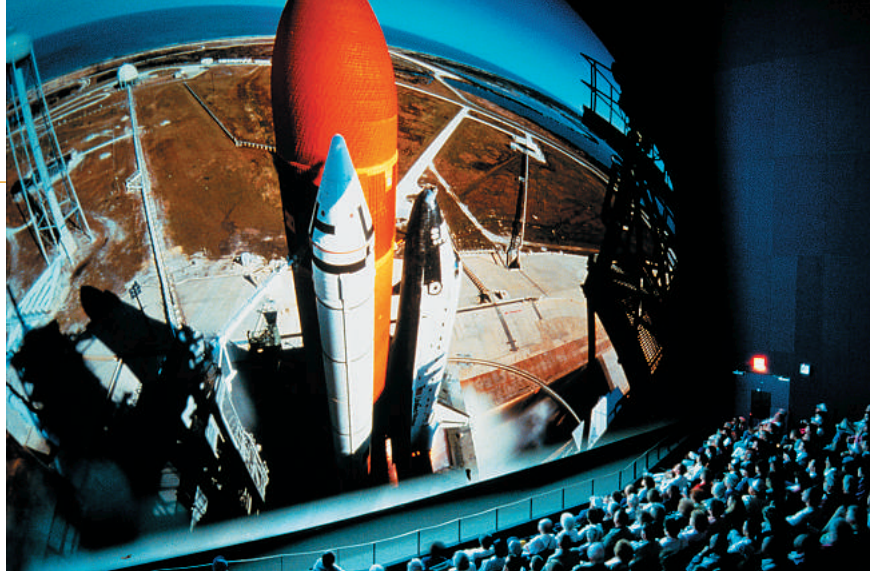
Above right: The IMAX cinema at the Kennedy Space Center

Right: The Shuttle Launch Experience ride at the Kennedy Space Center.

Far right: You can enjoy lunch while talking to a real astronaut on launch day, if you book this early enough.

Right below: You can watch and listen to astronauts talking about their experiences at the KSC.

Far right below: The actual Apollo 14 Command Module on show at the Astronaut Hall of Fame.



PHOTOS COURTESY: NASA, KSC



control and the astronauts on board, keeping you up to date with everything going on.

A wave of realisation washes over you every now and again as you remember that you're witnessing a staggering feat of engineering and bravery as seven men and women sit on top of a liquid oxygen-filled fuel tank waiting to rocket through the sky – the extraordinary result of hundreds of people working together for the same ultimate objective.

As the speakers announce T-minus nine minutes, the launch countdown begins and the crowds cheer. Anyone not on their feet will now be. Mission control reports that everything is 'go'. Significant-sounding phrases like, "Retract orbiter access arm," and "Terminate LOX replenish," heighten the sense of absolute commitment.

"T-minus two minutes. Close visors."

"T-minus one minute. Perform SRB FWD MDM lockout."

"Thirty seconds. Go for auto sequence."

"Twenty seconds. Activate sound suppression water."

At this point, the sound suppression system on the launch pad begins to quickly flood huge sections of the platform with 300,000 gallons of water to stop any potential damage to the



orbiter caused by awesome amounts of acoustic energy and rocket exhaust reflected from the flame trench.

"Ten, nine, eight, seven..."

The engines erupt at T-minus 6.6 seconds. The main orbiter engines ignite in sequential order and the water from the sound suppression system instantly boils into bellowing clouds of steam.

"...five, four, three, two, one."

At T-minus zero seconds, the solid rocket boosters ignite and about a second later, the combined 'stack' of the orbiter, external tank and boosters slowly lifts off the pad, then accelerate upwards. This is all visible from the causeway, albeit in the distance. But since most of the KSC's 50 square kilometres site is a nature reserve, with over 7,500 different species of wildlife, not including 7,300 different species of birds, there are quite a few trees. It's not until about five seconds after launch that the



shuttle bursts into view from the Visitor Complex, riding a bright white and yellow plume of fire. But of course, you will be able to hear it before you see it.

Depending on cloud cover, you may or may not be able to see the solid rocket booster cutoff and separation. This happens roughly two minutes after liftoff, about 30 miles up.

All too soon, the launch is over and only a gently drifting column of white smoke remains. As the crowds also slowly dissipate, it's worth thinking about wandering over to the IMAX cinema. It will take a few hours for the congestion and car park confusion to clear and this is a pleasant way to pass the time. It has been a long day, after all, and you are coming back tomorrow. More than likely one of the specially-made-for-IMAX films like *Walking on the Moon 3D* presented by Tom Hanks or *Space Station 3D* narrated by Tom Cruise are on show. The tickets price is included in general admission.

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OTHER ATTRACTIONS

There's plenty to see and do in the Orlando area. For starters, there's the EPCOT centre, Universal Studios (including the Islands of Adventure park) SeaWorld (and the Aquatica waterpark) and of course the Walt Disney World resort.

The theme of space is never too far away in and around the Orlando area and EPCOT is no exception. The Mission: SPACE ride is meant to simulate astronaut training for the first manned mission to Mars aboard the fictional X-2 Deep Space Shuttle in 2036. Riders are 'trainees' at the fictional International Space Training Center (ISTC), where they are arranged into crews of four before watching an introductory video featuring actor Gary Sinise.

There are plenty of rides, as well. A standard one-day, two-park ticket covering Universal Studios and the Islands of Adventure park will cost around \$100 (Dh370) with parking an additional

\$17 (Dh62). Entry to EPCOT for a day will cost you \$80 (Dh294) with \$12 (Dh44) for parking.

But there's still even more on offer in Orlando than just emptying the contents of your stomach and your wallet. There are over 20 golf courses that are within the local vicinity and if outdoor activities offer some interest, you've got to pay a visit to Dick's Sporting Goods on New Haven Avenue – part of the Melbourne Square shopping mall. This has to be the planet's biggest sporting equipment shop and sells everything from golf clubs and camping gear to kayaks.

Just up the road in Cocoa Beach there's the famous Ron Jon's surf shop, open 24 hours, just like the beach, and there's Longboard House on Fifth Ave. that sells every kind of surfboard you can imagine.

Depending on the time of year, your visit could include an ice hockey, American football, basketball or baseball game. Tampa is home for most of the nearest teams,



PHOTOS COURTESY: SCOTT SNOWDEN



but Orlando has an NBA basketball team, Magic, that's on the rise at the moment.

And there's Melbourne's historic Old Town; a quaint area that still retains its original 1900s look and feel. Here you will find all the art shops, museums, cafés and restaurants you could ever need.



Top: The Universal Studios globe.

Left: You will have to share the beach with the resident turtles at certain times of year. There are organised times to watch them nest.

Above: The Hulk roller-coaster ride at Universal Studios.

To really make the most of what the KSC has to offer, make the second day you visit the one after the launch. Again, for obvious security reasons, almost all of the scheduled tours will not have quite as much access preceding a launch as they will after. The original ticket you buy to gain entry to the Visitor Complex, including launch, is valid for two days.

In addition to specifying 'causeway viewing' as you plan and purchase your tickets weeks in advance, you can make reservations on the additional scheduled tours. Each costs about \$60 (Dh220) and there are two to choose from ('Then & Now' and 'Up Close') not including the Standard Tour that comes as part of the basic ticket package. These are quite extensive and only usually run once a day, so consequently you'll only have time to fit in one of these.

The Up Close tour is not as up close the day before a launch for perfectly understandable security reasons and the best of the Standard Tour is included at the end of Then & Now,

so this makes the most of the time available. It's a captivating, historic journey around the older areas of the facility and gives an insightful guide through the early Mercury missions and Gemini and Apollo, right up to the modern day.

Along the way you can stand on the very spot, next to a life-size replica of the Mercury-Redstone 3 rocket, where Freedom 7 was launched from putting the first American – Alan Shepard – into space.

You will also visit launch pad 34, the site of the tragic Apollo 1 fire. The coach taking visitors will pass the mind-bogglingly massive Vehicle Assembly Building, where the 'stack' of the shuttle orbiter, rocket boosters and external fuel tank are put together on the titanic, caterpillar-tracked transporter. The tour also goes extremely close to pad 39A, where the shuttle will have launched from the previous day.

It eventually concludes by stopping at the Saturn V Center, where you can gaze in awe at a full-size replica of the

rocket that took men to the moon, plus mock-ups of the Command and Lunar Module.

Upon return to the KSC, and after a coffee break, make tracks to the Astronaut Hall of Fame (price included with general admission).

This is short drive, six miles west of the Visitor Complex across the Indian River over the NASA Parkway bridge. It's a nice finish to a two-day tour of the Kennedy Space Center as here you can slowly meander through displays dedicated to those who have devoted themselves to flying higher, further and faster than anyone else.

There's also a wealth of activities to indulge in, from science experiments to a centrifuge-based simulation ride.

This loosely resembles a somewhat smaller, scaled-down version of one of those memorable machines that swing you around to measure G-force tolerance. It pulls up to about 4 Gs, but only for a short time.

Getting there

There are a number of different ways

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to ultimately reach Orlando, but it's at least two flights with a connection in one major US city. Emirates flies to a few US cities, as does Etihad, so it is possible to then connect with Delta, United or American Airlines on to Orlando.

Cheaper flights can be found flying via Europe: Lufthansa for example, flies to Orlando with a change at Frankfurt, from Abu Dhabi and Dubai.

The quickest and probably the easiest way to get there is to fly Delta from Dubai to Atlanta, stay with Delta and then connect to Orlando.

Once you've landed at Orlando airport, you'll need to hire a car, so an internationally valid driver's licence is required. Prices will obviously vary depending on what kind of vehicle you want, but there's not a great deal of difference between car rental companies Virgin, Dollar, Avis, Thrifty and LXM.

— Scott Snowden is a travel writer based in Abu Dhabi



Staying there

One of the nicest areas along what is known as the Space Coast is a small, sleepy town called Melbourne – not to be confused with its Australian namesake. Not only is it right on the coast but it's reasonably close to Orlando (90 minutes drive) and the Kennedy Space Center (45 minutes drive away).

The Crowne Plaza on the A1A highway in Melbourne proudly boasts one of the best views in the area. It's not a five-star establishment but the location is breathtaking and the facilities are more than satisfactory. It's just

15 minutes drive from the legendary Cocoa beach – a surfing hotspot and where the early Mercury 7 astronauts used to hang out. Be sure to book a room that looks out over the beach so when the sun rises each morning, you can enjoy the stunning scenery. The beach itself is breathtaking and stretches to the horizon in either direction. There's plenty of space for everyone and groups can happily gather at weekends with a barbecue or perhaps play Caribbean-style music on steel drums.

The room rates at this hotel begin at \$149 (Dh547).

There's a large wooden decked terrace that extends from the restaurant to the beach, so you can enjoy breakfast as the sun rises or dinner in the evening. There is a lively, active atmosphere here, with live bands often playing jazz or even some good, old-fashioned rock 'n roll in the early evening and there's always a gathering of fans in front of one of the many big screens if the local basketball, ice hockey, baseball or American football teams are playing.

There are other hotels along this stretch, most notably a Hilton, Holiday Inn and Radisson hotel. The room rates here start from a little more and they are very pleasant indeed, they just don't seem to have quite the same atmosphere and energy.

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