

# Oil Market Report: July 2019

50 years ago this month, Neil Armstrong and Buzz Aldrin became the first men to set foot on the moon, exactly 20 years before Lancastrian inventor Wallace and his faithful beagle Gromit, made the exact same trip in their first adventure "A Grand Day Out". So as we now head at full throttle into the holiday season, we thought we would have a look at the fuel, energy and leisure implications of holidaying in space. After all, both bearded wonder Richard Branson and Elon "pedo guy" Musk think that space travel is the future, so what about a few days of intergalactic R&R...?

Those of us who are about to jet off on a conventional holiday are probably aware that aeroplanes consume a great deal of fuel. On a short-hop to mainland Europe, a passenger jet will use somewhere in the region of 24,000 - 26,000 litres of kerosene. For a long-haul flight (say Heathrow to New York), that figure is trebled, whilst for super long-haul journeys (involving a stop-over), overall fuel consumption will be in excess of 125,000 litres. That certainly seems a lot of fuel, but compared to space travel, it's peanuts! On take-off, a double rocket boosted space craft will consume around 9,750 litres of fuel per second (typically a mix between kerosene, hydrogen and liquid oxygen). Travelling at speeds in excess of 6,000mph, reaching space takes about 2-3 minutes, which means by the time the craft has left the earth's atmosphere and jettisons its boosters, circa 1.6m litres of fuel will have been used. At this point, the spaceship will have reached cruising altitude, so passengers will be able "kick-back, relax and enjoy the flight", which on a moon trip means another 75 hours and a further 2m litres of fuel (at least the fuel burned in space will not contribute to global greenhouse gas emissions).

So far, so energy intensive - this holiday could be expensive! But wait, here's some good news on the energy front. Once holiday-makers have arrived, powering their cosmogenic holiday chalets should be relatively straight-forward - such is the strength and proximity of the sun's rays. In fact, if we take the International Space Station (ISS) as the model for our galactic vacation cabins, then hundreds of thousands of solar battery cells will provide ample energy 24 hours per day and at zero cost. Nice!

On arrival at a bog-standard lunar caravan park (with sea - of tranquillity - view), the majority of space holidaymakers will almost certainly want a lie down to recover from an unusual form of jetlag. Firstly, the journey into space will likely have generated intense g-force sensations, but in addition, the experience of zero-gravity typically generates 3-4 days of motion sickness for 50% of space travellers. This almost certainly means that cool lagers by the pool will have to wait or even be done away with entirely. For whilst the temperature on the moon (as high as 127 deg C in the sun) does lend itself to ice-cold tinnies, the reality is that atmospheric pressure considerations make carbonated drinks a major safety hazard. So it's going to have to be water only and on the ISS, most drinking water actually comes from recycled sweat, breath and urine. That's a very difficult sell in any holiday brochure...

What about food? Clearly visitors to the moon will have no problem sampling cheese (just look at Wallace & Gromit's experience), but beyond that, local cuisine in space will be confined to whatever can be brought up from earth. There is some good news for meat eaters though, as all food needs to be high in protein to avoid body and muscle wastage. So fire up the barbecue boys (in an air-vacuumed kitchen area please), because it's Steak Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday!

Finally the highlight of any space holiday will surely be the day trips. Top of everybody's list will be the 28,000 mile trip around the earth, but the hire craft required for this voyage will need to travel at a minimum of 17,000 mph. This is because as everyone knows, anything less than that will mean a failure to outpace gravity and a plummeting back down to earth. Which would almost certainly mean a bad TripAdvisor review and probably some form of refund for customers. Nonetheless, as long as requisite speeds can be maintained, then this trip should be extremely memorable. Not only will views back to earth be spectacular, but a full orbit will take 90 minutes - so on a leisurely afternoon or evening cruise, punters can expect to see at least 3 sunsets - beautiful!

All in all then, quite a few things to consider before you book your first interstellar holiday. But if you are still keen and have a cool \$10m to spare, then log on to <https://www.orionspan.com/> and register yourself for a 12 day trip to space. Portland won't be joining you, as summer holidays for the foreseeable future will continue to be in Scotland. It is rarely said about that part of the world, but the climate is better and even with the narrow roads, logistics is a doddle when compared to an inter-galactic trip. But whether you are aiming for a terrestrial or an extra-terrestrial vacation - we hope you all enjoy your holidays!