The British Interplanetary Society and its origins in Manchester and Liverpool

Figure 1 Founder Members of the MIS (L to R) Broadbent, Burgess, Cusack, Cummins.
Photo – Burgess Family

Seventy Six years after it was founded, a brass plaque was unveiled at Clayton Vale, East Manchester to commemorate the Manchester Interplanetary Society (MIS). No doubt motivated by Philip Cleator who founded the British Interplanetary Society (BIS) in nearby Liverpool just three years earlier, the MIS founder Eric Burgess had strong connections with the Manchester Astronomical Society and later with the Salford Astronomical Society, too. Eric Burgess played a central role in re-forming the British Interplanetary Society and was the BIS's first post war chairman.

During the late 1970s I joined the Salford Astronomical Society just outside Manchester. It had a telescope with an 18" diameter mirror. It was the largest telescope I had ever used. Three decades on, it still remains the largest telescope I have ever used. Perhaps I should get out more.

It also had an intriguing back story of which I only recently became aware. During the 1950s this telescope had been based at Jodrell Bank to allow the radio astronomers to observe optically the radio sources they would investigate with the huge radio dish that was then still under construction. During the early 70s with the assistance of Professor Zdenek Kopal from the Department of Astronomy of the University of Manchester, the 18" telescope along with the dome was re-sited to Salford under the curatorship of the then recently formed Salford Astronomical Society.

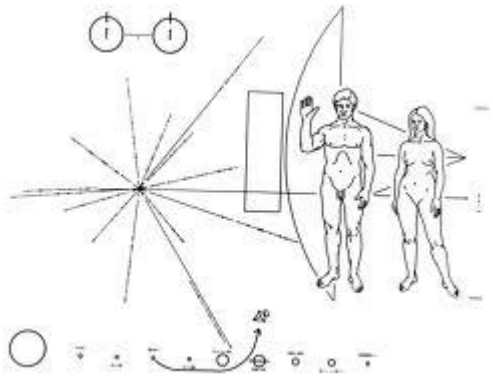

Figure 2 Pioneer Plaque - Photo NASA

It was only a couple of years ago that I came across a remarkable albeit tenuous connection between this telescope and mankind's first exploration of the solar system. Kevin Kilburn from Manchester Astronomical Society had published an article in 2007 called *Manchester's first Rocket Man*. In it he described how the Manchester based Eric Burgess who in 1936 had founded the Manchester Interplanetary Society (MIS) had moved to Macclesfield, close to Jodrell Bank, following his marriage and during the 1950s began to use this 18" telescope. In his book, **Satellites and Spaceflight**, published in January 1957, Burgess includes pictures taken with this 18" reflector he credits as "Jodrell Bank, University of Manchester" and the 8" refractor as "Godlee Observatory". Both telescopes are still in active use today.

In 1956, Burgess moved permanently to USA and worked as a science writer for NASA, high-tech companies and authored many popular books on space travel and interplanetary exploration. Over dinner in November 1971 with Carl Sagan, Burgess proposed that a message from humanity should accompany Pioneer 10 destined for Jupiter in the following spring. Pioneer 10 would be the first

man-made object to achieve solar system escape velocity and head into interstellar space. A plaque was designed by Carl Sagan and Frank Drake and successfully incorporated into the mission in a very short time. Although Burgess was informed about the plaque prior to launch, the image of a naked man and woman was so controversial in 1970's conservative America that NASA insisted on a news embargo until after launch.

One of many scifi fanzine of the time, the cover of Fantast 1939 edition shares a resemblance with the pioneer plaque. The cover depicts a naked man and women against the backdrop of the cosmos. It was drawn by MIS member Harry Turner and circulated widely including the USA at the time. It is inevitable that Eric Burgess would have seen it to too. Was it an inspiration for the pioneer plaque half a century later? The text in the bottom left corner, from the celebrated the 12th century poet Omar Khayyam reads,

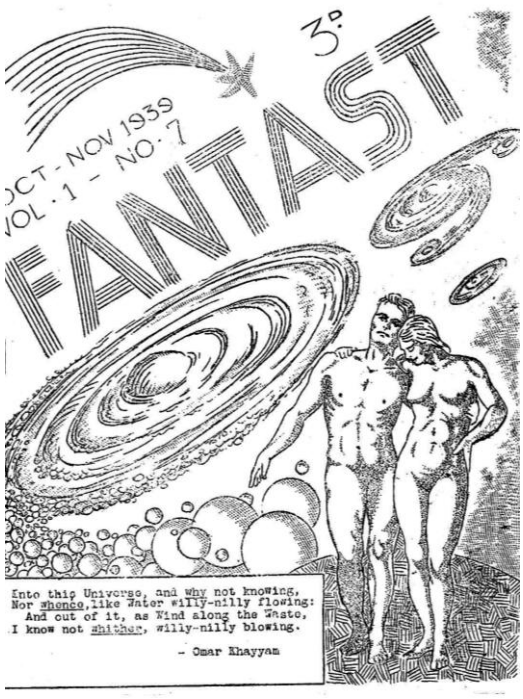

Figure 3 Cover of scifi magazine Fantast from 1939 by Harry Turner. Photo Philip Turner.

Into this Universe, and Why not knowing
Nor Whence, like Water willy-nilly flowing;
And out of it, as Wind along the Waste,
I know not Whither, willy-nilly blowing

Liverpool has an uncanny track record in giving rise to enduring national scientific organisations including the British Astronomical Association in 1890 and the British Interplanetary Society in 1933. Although neither remain based in Liverpool today both flourish as central authoritative hubs in their respective fields, nationally and internationally to the present day. The late 1920s and early 1930s was a time when rocket science came of age. The key breakthrough was the use of liquid fuel as a propellant first in USA in 1926, Germany in 1931 and in the Soviet Union in 1933. Dedicated amateurs established rocket societies around the world.

The British Interplanetary Society founded by Philip Cleator had its inaugural meeting in the shadow of the Liver building on Dale Street in Liverpool on Friday 13th October 1933. Cleator travelled extensively at his own expense and at times at substantial personal risk making contacts with rocket pioneers including a trip to Germany meeting the founder members of the Verein fur Raumschiff-fahrt (VfR) after Hitler had come to power. Cleator hosted VfR founder member Willy Ley at his home in Wallasey on the way to the USA in his quest to escape Nazism. For the next dozen years Cleator lead and guided the BIS until it was reformed as BIS Limited with its HQ in London after the war.

Eric Burgess had joined the Manchester Astronomical Society in 1935 and a year later founded the Manchester Interplanetary Society (MIS), initially using his own home address of 683 Ashton New Road in East Manchester as the HQ. In the August 1937 edition of the MIS's publication, the bi-monthly journal The Astronaut announced that the HQ would be moving to Lonsdale Place in Victoria Park. This was the home of the Sci-Fi writer and artist Harry Turner (1920 - 2009) who served as the MIS journal editor at a time when he was also the chairman and secretary of the Northern Branch of the Science Fiction Association (SFA). In a letter, hand delivered by Arthur C Clarke for the first SFA meeting, in Harry's attic, they were welcomed with the words "*You could not*

belong to a more dignified or distinguished association connected with Science-fiction, were you to go to the utmost ends of this little speck of cosmic dust we call Earth".

Perhaps it was from moving between this hothouse of science and science-fiction communities, ignoring or maybe subconsciously repudiating the distinction between the two that the young members of the MIS set themselves the reckless, bold ambition of spaceflight that many of them would contribute to and live to see in their lifetime.

Figure 4 Brass Plaque at Clayton Vale. The site used by the MIS for their rocket tests. Photo - Gurbir Singh

Harry produced illustrations for the numerous national Sci-Fi publications that Arthur Clarke wrote for. In his 1993 book, "**By Space Obsessed**" Clarke writes about the legal obstacle facing the nascent rocket scientist in pre-war UK. In a chapter entitled "**Memoires of an Armchair Astronaut (Retired)**" he writes "*The actual building and launching of rockets was frowned upon, for it would only result in police proceedings under the 1875 Explosives Act, as a group of experimenters in the north country had already proved*".

March 27th 2012 marked the seventy-fifth anniversary of the incident that Clarke referred to. On that date in 1937 the MIS planned to test launch thirteen rockets, all designed and made by its members included Malcolm Wade, Stanley Davis and Malcolm Wade. The launch site, Clayton Vale in East Manchester, is now a small picturesque park with the river Medlock running through its length. At the time it was more of a slag heap for the nearby coal mine and local industry. Following five largely unsuccessful lunch attempts the sixth rocket constructed from aluminium exploded injuring three, one requiring hospital attention. The event was heavily featured in local and national press.

Figure 5 Left to Right Tony Cross Tony Lloyd MP Frank O'Rourke Alistair Scott 14 May 2012. Photo - Gurbir Singh

Most of the active members received a summons to appear at the City Police Court on May 14. The charge against Harry Turner was that he "***unlawfully did manufacture a certain explosive not being allowed by section 4 and 39 of the Explosives Act, 1875***". Harry like most of the members was not eighteen and thus not an adult, so his father Henry is also named on the summons. In the event, Eric Burgess successfully argued that they were not manufacturing explosives but conducting rocket propulsion experiments and the legal proceedings came to an abrupt end.

By the early 1930s, the American Rocket Society in USA, the GIRD group in the Soviet Union and the VfR in Germany had already shown that liquid fuel was the way to go. MIS and groups like it in the UK were constrained by the 1875 Explosive Act which prohibited the use of liquid fuel in the UK. On behalf of the BIS, Philip Cleator had raised the matter with the home office. In a report in the Daily Dispatch of 5th August 1936 he says "*In March I wrote to the inspector of explosives at the Home Office and received a courteous reply that the matter would receive attention. That is the last I heard of it*".

During the 1930s rocketry groups had sprung up across the country including Hastings, the Midlands, Leeds and Paisley. The MIS did not live long, following a "schism" in late 1938 Eric Burgess and Trevor Cusack broke away and founded the Manchester Astronautical Society (MAS). The MIS voluntarily disbanded in the summer of 1939. Most other astronautical societies were either formally dissolved or stopped operating as the war approached. The BIS chose to suspend activities until after the war. For a time, the MAS was the only active astronautics group in the country. In 1941, Eric Burgess made contact with Ken Gatland who had set up the Surrey based Astronautical Development Society. During the war they pooled their resources and jointly published bulletins and a journal before formally uniting as the Combined British Astronautical Societies (CBAS) in 1944.

Figure 6 Stanley Davis.
Photo Ann Sutcliffe (daughter)

For the amateur rocket scientists, the war had brought an abrupt stop. Although they did not know it at the time, the war accelerated the development of rocket science beyond what even they could have imagined. By chance in February 1943, Harry Turner and Arthur Clarke met when both ended up at Yatesbury Radio School in Wiltshire. "*He seemed well-organised, had his typewriter with him and, looking to the future, kept a file of all potential British Interplanetary Society members*" recalled Harry Turner. The war took its toll. Eric Burgess and Trevor Cusack were close friends. They both wanted to serve in the merchant navy together. Eric Burgess' poor eyesight prevented him from joining but Trevor Cusack did and was killed at sea. Stanley Davis returned from Dunkirk but died in the following year from injuries he sustained there.

Surprisingly, the CBAS expanded in the midst of a world war with additional branches in Farnborough, the Midlands and in Eccles in Manchester. As the end of the war approached the BIS stirred once more. On 10th December 1944, a meeting was held at the Wallasey home of its founder Philip Cleator to discuss a proposal of combining BIS and CBAS. Eric Burgess, Arthur Clarke, Philip Cleator and several others now helped re-establish the BIS as a single national organisation to promote spaceflight. Certificate of incorporation was acquired on the final day of 1945 and BIS Limited formally came into being on the following day. The majority of the BIS members in 1946 were members of the CBAS that Eric Burgess and Ken Gatland had established and fostered during the period of the war. Burgess served as the BIS chairman of the first post war session between 1945 and 1946 and was succeeded by Arthur Clarke as president in 1946.

Figure 7 Eric Burgess with his daughter Janis in 2003.
Photo - Janis Arredondo

Arthur Clarke's idea of geostationary satellites through his publication of "Extra Terrestrial Relays" in wireless world is well known, that the design required **manned** space stations is not. Burgess' idea of automated **unmanned** geostationary communication satellites (Comsats), although formally recognised in the "Satellites and Sounding Rockets exhibition" during the opening of the Smithsonian National Air and Space Museum in 1976, has not received the

recognition here in the UK.

Amongst others, history records Robert Goddard, Herman Oberth and Sergei Korolev as the fathers of modern rocketry. Philip Cleator and Eric Burgess were their contemporaries and could have met each other. Unlike theirs, Cleator's and Burgess' work never attracted national attention or financial support from the state. Thus their accomplishments remained limited but in one respect they achieved something that others did not. Rocketry organisations in Germany, America and the Soviet Union were subsumed by their national defence organisations. The British Interplanetary Society they helped to established still exists in the original form they envisaged - innovative, informative and independent.

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