

# ASTRONOMY IN THE UK



Faced with spending two months in England, I decided to try to explore some of the sky that is forever inaccessible from our southerly latitude here in Macarthur, NSW.

The first thing I noticed is that from Sydney, we have access to a much larger proportion of the entire sky than observers in England. At 34° S, we can (theoretically) see all the sky from 90° South as far as declination 56° North. In England, at a latitude of 52° N, one could only see from 90° North as far as declination 38° South, leaving a very much larger area of the sky unseen. Some might say the better areas. The converse of this is that a greater proportion of the sky is circumpolar in England, with all objects between declination 90° N and 52° N theoretically visible all the year round, making the sky much easier to familiarise oneself with.

There are eighty-eight constellations in the entire celestial sphere and it caught me by surprise to find out that there are only two of them that are fully below the theoretical horizon from Macarthur. These are Ursa Minor (southernmost boundary 65°N) and Cepheus (55°N). Camelopardalis (53°N), Cassiopeia (52°N) and Draco (48°N) are three more constellations that are technically almost invisible from Macarthur and realistically they are. Approximately half of the constellation of Ursa Major is invisible in Macarthur, as are very small parts of Lynx, Cygnus, Lacerta, Perseus and Auriga. So, an MAS observer visiting the Northern hemisphere needs to concentrate on the constellations of Ursa Minor, Cepheus, Camelopardalis, Cassiopeia and Ursa Major, because the rest are visible from Macarthur. There are seven Messier objects in Ursa Major, two in Cassiopeia, one in Draco and none in Ursa Minor or Camelopardalis. Therefore, if you are seeking Messier objects, there are only three constellations to worry about and they will be visible for much of the year.

Below is a list of the fourteen northernmost Messier objects, (four of which are technically just visible from Macarthur and five of which are right on the horizon, so a trip North would enable them to be seen at the right time of year):

69°N	Ursa Major	M81	NGC 3031	Spiral Galaxy	Mag 6.9
69°N	Ursa Major	M82	NGC 3034	Cigar Galaxy	Mag 8.4
61°N	Cassiopeia	M52	NGC 7654	Open Cluster	Mag 7.3
60°N	Cassiopeia	M103	NGC 581	Open Cluster	Mag 7.4
58°N	Ursa Major	M40	~	Double Star	Mag 8.4
55°N	Ursa Major	M108	NGC 3556	Spiral Galaxy	Mag10.1
55°N	Draco	M102	NGC 5866	Edge On Galaxy	Mag 10.0
55°N	Ursa Major	M97	NGC 3587	Owl Nebula	Mag 9.9
54°N	Ursa Major	M101	NGC 5457	Pin Wheel Galaxy	Mag 7.7
53°N	Ursa Major	M109	NGC 3992	Spiral Galaxy	Mag 9.8
51°N	Perseus	M76	NGC 650	Little Dumbell	Mag 10.1
48°N	Cygnus	M39	NGC 7092	Open Cluster	Mag 4.6
47°N	Canes Venatici	M51	NGC 5194	Whirlpool Galaxy	Mag 8.4
47°N	Canes Venatici	M106	NGC 4258	Spiral Galaxy	Mag 8.3

Not all of these objects will be visible through binoculars but concentrating on just Ursa Major, Cassiopeia and Draco greatly simplifies the objectives for anyone visiting the northern hemisphere from MAS and wanting to star-hop to Messier objects. However, this does not take into account the other governing factors, which are: weather; light pollution; localised light source glare; jet trails; and very late summer sunsets.

England is renowned for it's cloudy weather. When it is not cloudy the sky will often be hazy, permitting views of bright objects such as Jupiter and the International Space Station - but little else. Lichfield is under many air corridors, as demonstrated by this day-time image, in which about nine jet trails are visible, with others apparently dissipating:



Light pollution in the UK is much worse than in Macarthur. Naked eye astronomy is not what it was when I was a young man living in North London in the 1960's. At that time I learned the northern constellations very easily as I walked home from the tube station each night - but now it is difficult to pick out Polaris and the Little Dipper.

So how did I go? Well, with the use of binoculars instead of my 'goto' Meade 8" LX-90, backyard astronomy was a somewhat difficult experience but despite these difficulties at least I was able to observe M52 and M103 in Cassiopeia. Ursa Major was fairly easily picked out but my binoculars could not pick out any of the seven Messier objects it contains. 😞

Maybe this article will be of some value to any others visiting the UK in the future from 'Dow Nunder'. Despite the difficulties, I still recommend taking your binoculars and giving it a go.

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