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# The August Solar Eclipse

On Wednesday 11 August 1999, mainland Britain will experience its first total eclipse of the Sun since 1927. This will be visible from most of Cornwall, parts of Devon, and the Isles of Scilly. The rest of the UK will see, weather permitting, a partial eclipse. Quite apart from the scientific interest in observing the corona, the Sun's outer atmosphere, total eclipses afford a dramatic spectacle. There exists a wide range of estimates of the numbers of likely visitors who will be attracted to the South West, with consequences both for tourism and emergency planning.

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## **Summary of main points**

- On Wednesday 11 August, mainland Britain will experience its first total eclipse of the Sun since 1927, and its last before 2090.
- Apart from being a unique spectacle, a total solar eclipse affords astronomers with an opportunity to study parts of the solar atmosphere generally obscured by the glare of the Sun's disc.
- Though a partial eclipse will be visible from the whole of the UK (and far beyond) the Sun will appear totally obscured in an area limited to much of Cornwall and parts of South Devon.
- It is dangerous to view directly a partial eclipse, however much of the Sun is obscured.
- The possibility of large crowds converging towards Cornwall and Devon to witness the total eclipse is a mixed blessing for the local tourism industry. Some regular visitors to the counties are reportedly staying away in the expectation of road congestion and over-stretched emergency services.
- Considerable preparations have been undertaken by the local authorities and emergency services in respect of the eclipse. The arrangements are discussed in general terms, along with the statutory provisions which underpin them.

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## I Introduction

On Wednesday 29 June 1927, at 6.24am, a deep twilight befell a misty Southport. Over two minutes, a wave of darkness swept a path some 30 miles wide across a mostly cloudy northern England, leaving these shores at Hartlepool. Mainland Britain had just experienced its most recent total eclipse of the Sun.

Millions had gathered in northern England and Wales to witness the Moon pass directly in front of the Sun. Thwarted by clouds, many still caught a glimpse of the crescent Sun, one highlight of a partial eclipse phase lasting two hours in total. Among those fortunate enough to witness the few seconds of totality was the Astronomer Royal, Sir Frank Dyson, leading a team gathered at Giggleswick. He took three photographs, at a cost of £150 to the public purse.<sup>1</sup>

What Sir Frank called “the luck of Giggleswick” also applied, to a lesser degree, to Southport. There, a quarter of a million people watched the eclipse. The following day, the *Times* printed a report from a special correspondent which began:<sup>2</sup>

The eclipse as seen from Southport sands was an unforgettable spectacle. It was seen rather mistily – with the outer parts of the corona and any streamers that there might have been invisible – but clearly enough to show the pink chromosphere, the silvery inner part of the corona, and some of the huge red prominences of hydrogen and other gas, one of them estimated at 50,000 miles in height, which are shot out with stupendous force from the sun.

The emotional, even religious, impact of a total eclipse was captured in an accompanying leader article:<sup>3</sup>

As the marvellous panorama was unfolded there came a great silence. In the west was the kind of leaden sky which comes before a thunderstorm. The air grew chilly. Birds and animals showed by their cries and movements that they, too, felt themselves in the presence of something mysterious and unknown. And then, when the zero hour of totality at last arrived, all that had gone before seemed insignificant in the amazing moments that followed. The sinister yellowish twilight faded away, as though some unseen hand were turning off a gas-jet. The shadow, says our Correspondent, enveloped us. We turned and found the sun black in a sky akin to that of a full moon. The disc was surrounded by a glowing, iridescent, irregular circle of fiery light, from which shot red and yellow flames. These flames of the corona, and the weird, unearthly darkness of the great shadow – quite different from that of the darkest night – combined to present a spectacle far surpassing anything that the imagination had conceived as possible.

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<sup>1</sup> HC Deb 11 July 1927 c 1735

<sup>2</sup> “From the sands at Southport”, *Times*, 30 June 1927

<sup>3</sup> “The luck of the eclipse” [leader article], *Times*, 30 June 1927

Only by the slenderest margin was the vision made possible. For no more than nine minutes, including the twenty-three seconds of totality, was the part of the sky in which hung sun and moon unobscured. But it was enough. For those fleeting moments the eyes of men, women, and children had looked upon a stupendous manifestation of the works of the CREATOR. The “heavens declare the glory of GOD”; and the “firmament showeth His handiwork.”

Only soft refreshing rain greeted nearly a thousand observers gathered at Crystal Palace,<sup>4</sup> far outside the narrow path of totality. They had hoped to glimpse a partial eclipse, but no obvious reduction in light levels was discernible beneath overcast skies. A day before the *Times* anticipated this possibility:<sup>5</sup>

The tragic aspect of the disappointment, if disappointment there is to be, is that the opportunity of watching a total eclipse of the sun – a phenomenon which has not been visible in the British Isles for over two centuries – will not be repeated here till 1999, so that for the vast majority of those now alive this is the one and only chance. This, of course, largely accounts for the extraordinary interest aroused by the event, even outside the district which will be traversed by the great shadow.

Though a total eclipse clipped the northern Shetland Islands on 30 June 1954,<sup>6</sup> mainland Britain will indeed shortly experience its first total solar eclipse since 1927 – on Wednesday 11 August.

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<sup>4</sup> “Rain and cloud in London”, *Times*, 30 June 1927

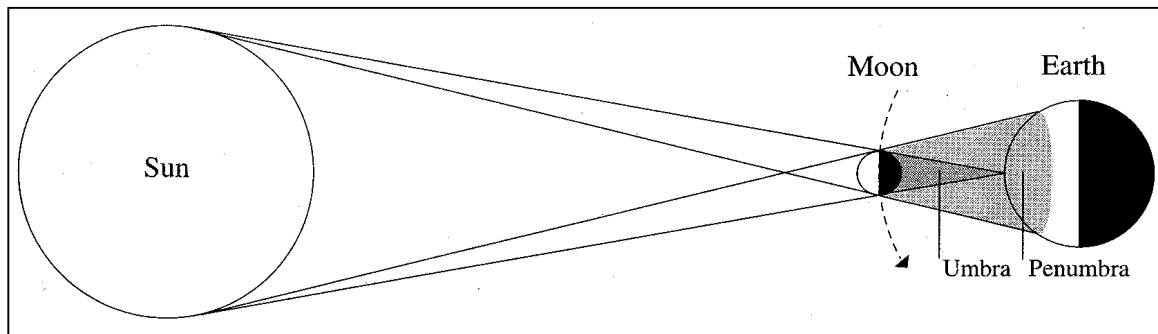
<sup>5</sup> “The Eclipse” [leader article], *Times*, 28 June 1927

<sup>6</sup> “View obscured in Unst”, *Times*, 1 July 1954

## II Solar Eclipses

It takes the Moon some four weeks to complete one orbit around the Earth. At any time, half the Moon's surface is illuminated by light from the Sun, though we only observe a full moon when it passes behind the Earth. At the opposite end of its orbit, when the Moon is new, the sunlit side faces away from the Earth. In between we see the familiar phases of the Moon, a complete cycle taking some 29.5 days to run. While this is happening, the Earth itself orbits the Sun, following an approximately circular path.

By a providential quirk of nature, the Moon and Sun appear to be roughly the same size when viewed from the Earth. Very recently, it has been suggested that a moon large enough to eclipse the Sun was a prerequisite for the evolution of intelligent life, but this hypothesis requires further study.<sup>7</sup> When the Moon passes directly between the Earth and Sun, in precise alignment, then a solar eclipse is observed. A total eclipse is seen only along a relatively narrow band of the Earth's surface in the full shadow (or umbra) of the Moon (see **Figure 1**, below).



**Figure 1: The configuration of the Sun, Moon and Earth during a total eclipse. Though the diagram is not drawn to scale, it demonstrates that only a small area of the Earth's surface lies in the full shadow, or umbra. Observers in the region within the penumbra will see a partial eclipse.**

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At first sight, it might seem reasonable to think that an eclipse of the Sun should occur whenever there is a new moon. Though the Moon passes between the Earth and Sun at this time, it is generally either above or below the plane of the Earth's orbit around the Sun. The fact that the Earth and Moon orbit in different planes greatly reduces the chances of the precise alignment needed for an eclipse, even a partial one. Total solar eclipses are rarer still.

<sup>7</sup> "It all fits...", *New Scientist*, 19 June 1999

An additional factor contributing to this rarity is variation in the Earth-Moon separation due to the slightly non-circular nature of the orbit. This leads to changes in the apparent size of the Moon, which may appear too small to completely blot out the Sun. A precise alignment in such a case would give an annular eclipse; as the name suggests this has the appearance of a circle of sunlight around the Moon's black disc.

## A. Eclipse prediction

The timing and location of eclipses can be predicted centuries in advance using computer programs which model the orbital mechanics of the Earth, Moon and Sun. In addition to gravitational and tidal effects, the programs need to take into account other factors such as changes in the rotation of both the Earth and Moon about their axes (poles).<sup>8</sup> Precise timings of the various stages of an eclipse, and the locations from which they may be observed, are calculated nearer the event by the Nautical Almanac Office, United States Naval Observatory<sup>9</sup> and given in *The Astronomical Almanac*,<sup>10</sup> a joint publication with HM Nautical Almanac Office.

Data are also provided for lunar eclipses, which occur when the full Moon passes through the Earth's shadow. Since the Earth's atmosphere refracts (bends) sunlight, one can still see a dimly-lit moon, often with a red hue. Lunar eclipses are visible from anywhere the night-time Moon can be seen.

Long before the advent of celestial mechanics, Babylonian and Chinese astrologers<sup>11</sup> noticed that solar and lunar eclipses occurred at predictable intervals. In particular, eclipses with similar characteristics, such as duration and type, tend to occur at eighteen-year intervals – a feature referred to as the Saros cycle. Furthermore, an eclipse year (346.6 days) has two equally spaced eclipse seasons. At least one solar eclipse occurs during each of these, along with lunar eclipses. The solar eclipses may be partial, annular or total; on average, a total eclipse occurs somewhere on Earth every 18 months. The next two total eclipses visible from (parts of) mainland Britain will occur on 11 August 1999 and 23 September 2090.

## B. Science and eclipses

Early work on eclipse prediction and characterisation was the provenance of astrologers, concerned with the compilation of horoscopes and the interpretation of omens. More recently, eclipses have been put to scientific use. High energy radiation from the Sun can interfere with radio communications, and in 1927 the *Times* described a study into the

<sup>8</sup> P. Kenneth Seidelmann (ed), *Explanatory Supplement to the Astronomical Almanac*, 1992

<sup>9</sup> <http://aa.usno.navy.mil/AA/>

<sup>10</sup> Stationary Office, *The Astronomical Almanac for the year 2000*, 1999

<sup>11</sup> Nowadays, astrology (superstition) is quite distinct from astronomy (science).



effect of the eclipse on “wireless waves”.<sup>12</sup> A few years earlier, measurements of the apparent positions of stars near the eclipsed Sun had provided the first verification of Einstein’s General Theory of Relativity. This predicted that the Sun’s gravitational field would bend starlight passing nearby. However, the most obvious scientific interest in total eclipses lies in the opportunity they afford to study the outer reaches of the Sun’s atmosphere: the relatively thin chromosphere and, beyond that, the diffuse and extensive corona. Neither is ordinarily visible in the glare of the blinding photosphere.

Artificial methods exist for circumventing this problem, one of which is spectroscopy. This involves spreading out the light, using a prism or a diffraction grating, and performing observations and measurements on a particular wavelength (colour). Light of one particular red wavelength originates in the chromosphere, allowing direct observations of this region of the solar atmosphere. Historically, spectroscopic methods led to the discovery of helium in the Sun before it was found on Earth. More profoundly, spectroscopy also established that the Sun is a typical star.

Coronagraphs are telescopes containing shielding discs which blot out the Sun’s bright photosphere and, unfortunately, a significant amount of the corona.<sup>13</sup> For this reason, total eclipses remain the best way of studying the inner corona. In addition, space-based coronagraphs are unable to transmit data sufficiently quickly to produce images in rapid succession. The 1999 total eclipse will follow a long path covering the far south west of England, central Europe and beyond. This will allow astronomers to produce a time sequence of images, which may shed light on the nature of the mechanism responsible for heating the corona to 2 million °C, much hotter than the solar surface temperature of 5500°C. With luck, a mass ejection of coronal material will occur somewhere along the path of totality, Bucharest Observatory being high on the astronomical wish list.<sup>14</sup> These mass ejections of plasma (comprising electrically-charged atoms and subatomic particles) can cause geomagnetic storms on Earth, disrupting power transmission and telecommunications networks.

### C. Observing the eclipse

A magnet for itinerant astronomers, solar eclipses also provide a spectacle of wider appeal. **It is dangerous to view directly a partial eclipse, however much of the Sun is obscured.** A safe way to observe a partial eclipse is to view a projection of the Sun’s image. This can most simply be achieved using two pieces cardboard, one of which contains a pinhole. The Sun’s light passes through this, forming an image on the cardboard screen behind. The partial phases of the August 1999 eclipse could thus be monitored, over a period of some 2½ hours, by looking at the projected image. An eclipse safety code, produced by scientists on behalf of the UK Eclipse Co-ordinating

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<sup>12</sup> “Wireless and the eclipse”, *Times*, 1 July 1927

<sup>13</sup> *McGraw-Hill Encyclopedia of Science & Technology* 1997

<sup>14</sup> “Crown of fire”, *New Scientist*, 29 May 1999

Group, has been published on the internet.<sup>15</sup> It contains similar advice to the above, in addition to the following:

You may view the sun directly only through special filters made for safe solar viewing. If you are not certain it is approved and safe or you have any doubts –

**DON'T USE IT.**

**Before using a solar filter:**

1. Read and follow the manufacturer's instructions carefully.
2. Make sure filters carry the "CE" mark approved for direct solar viewing (be alert for forgeries).
3. Check filters carefully for any damage.
4. **DO NOT** use filters if they are scuffed, scratched or have holes in them.
5. **DO** hold the special filter firmly over both eyes **BEFORE** looking up at the sun, and do not remove it until **AFTER** looking away from the sun. The sun should appear quite dim and the sky be completely black - if this is not the case then **DO NOT USE THE FILTER.**

**DO NOT** look at the sun through any optical instrument, e.g. telescope, binoculars or camera (even if you are wearing special filters).

**DO NOT** view the sun through sunglasses, or filters made of photographic film, photographic filters, crossed polarisers, gelatin filters, compact disks, or smoked glass.

**DO** make sure that children are supervised at all times.

Other sensible precautions will take into account the fall in ambient temperature and light levels. The Maritime and Coastguard Agency has issued advice for people planning to view the eclipse from cliff tops or at sea.<sup>16</sup> Gusts of wind (up to 40 knots) have been known to be associated with eclipses, a factor clearly of significance for yachtsmen.<sup>17</sup>

The only time when it is safe to look towards the Sun is during the brief moments of totality, when the Moon completely covers the solar disc. Depending on location, the upcoming total eclipse may last anything from a brief instant up to 2 minutes. In clear skies one should see the faint, white corona stretching two, three or more solar diameters

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<sup>15</sup> <http://www.eclipse.org.uk/safety.htm> , 10 June 1999

<sup>16</sup> Maritime and Coastguard Agency Press Release 106/99, *See the eclipse safely advises the Maritime & Coastguard Agency*, 15 April 1999

<sup>17</sup> "Eclipse warning for yachtsmen", *Daily Telegraph*, 7 June 1999

in all directions.<sup>18</sup> It may be possible to see the chromosphere as a thin pink ring around the Moon's black disc, from which could emerge visible prominences – arcs of hot gas.<sup>19</sup> In the darkened skies, some of the brighter stars and planets will be visible. To the naked eye, the planet Mercury is too close to the Sun to be ordinarily visible in the glare. During totality in August, it will appear as the nearest bright “star” to the west of the Sun. For good measure, the eclipse falls a day before the peak of the Perseid meteor shower, so there is a chance of seeing a “shooting star” as well.

#### D. Timing and location

A variety of publications has provided timetables for the August 1999 eclipse as viewed from several towns in the UK, Europe and beyond. The table below gives a sample.<sup>20</sup>

Location	Partial eclipse begins (hour: min: sec)	Totality begins (hour: min: sec)	Totality ends (hour: min: sec)	Partial eclipse ends (hour: min: sec)
Hugh Town, Isles of Scilly	09:55:41	11:09:34	11:11:21	12:30:24
Penzance	09:56:37	11:10:35	11:12:40	12:31:38
Falmouth	09:57:06	11:11:15	11:13:21	12:32:25
Plymouth	09:58:14	11:12:50	11:14:32	12:33:51
Torquay	09:58:59	11:14:03	11:15:15	12:34:55
St. Anne, Alderney	09:59:37	11:15:15	11:17:02	12:37:12

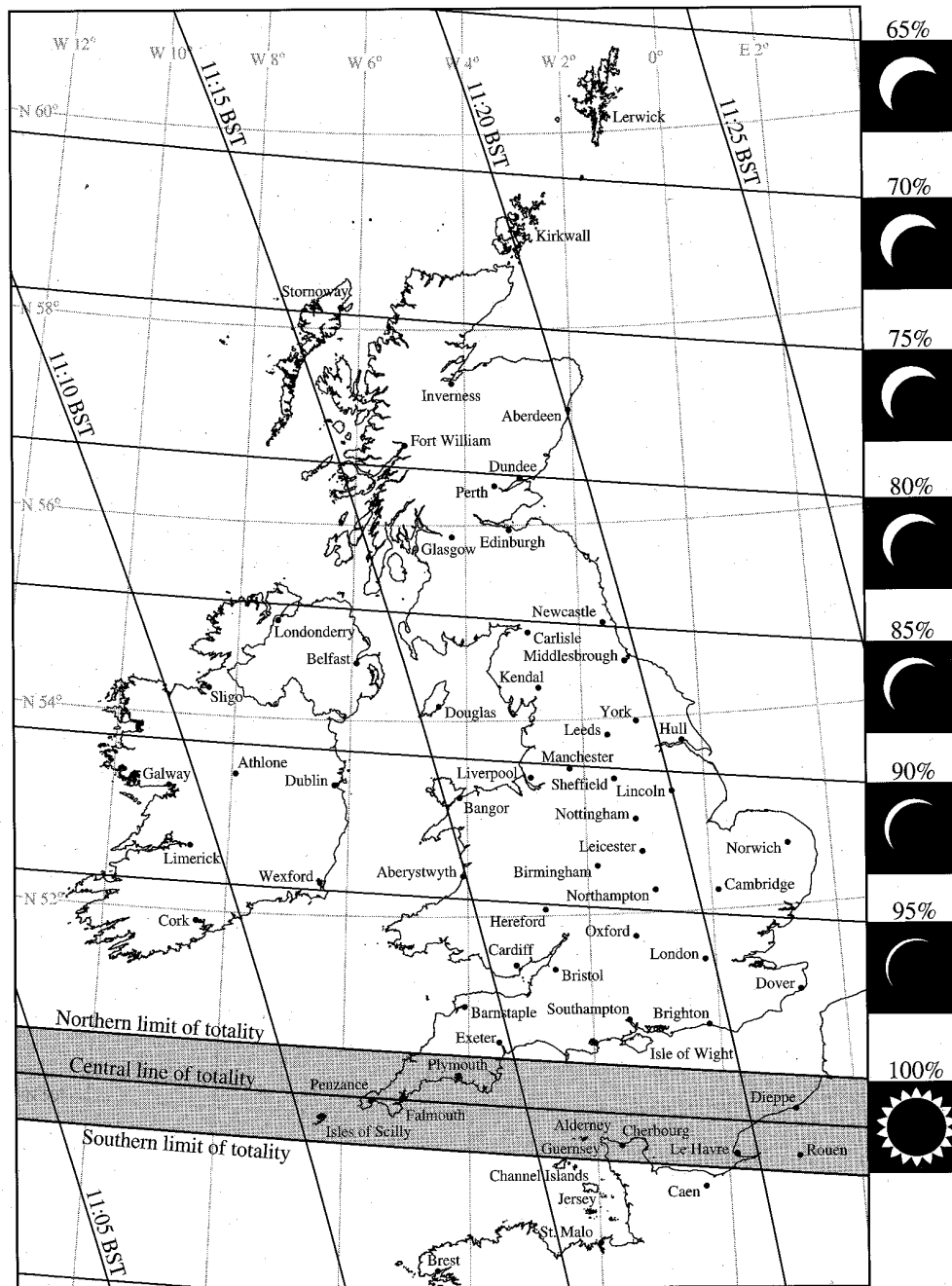
**Table 1: The time (British Summer Time) of the eclipse in six places that will experience totality.**

To obtain approximate timings of the eclipse for other locations, the map (**Figure 2**) on the next page can be used. Only those areas falling within the shaded path will experience a total eclipse, the duration of which increases the nearer one is to the central line of totality. Observers just inside the eclipse's path, near the northern or southern limits of totality, will see a total eclipse lasting only a few seconds. Elsewhere, only a partial eclipse will occur. For example, in Newcastle upon Tyne almost 85% of the Sun's disc will be obscured at maximum eclipse, enough to give rise to a noticeable fall in light levels. This maximum eclipse will occur shortly after 11.19am, judging from the near-vertical solid lines giving the time.

<sup>18</sup> Philip S Harrington, *Eclipse!*, 1997, p k49

<sup>19</sup> Steve Bell, *The RGO Guide to the 1999 Total Eclipse of the Sun*, 1997

<sup>20</sup> *ibid.*



**Figure 2: The extent (nearly horizontal lines) and timing (nearly vertical lines) of the maximum eclipse as seen from the British Isles. A total eclipse will occur only at locations within the shaded area. Times are given in British Summer Time; corrections to local time will be needed for French locations. Lines of latitude and longitude are faintly visible.**

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Guernsey, just south of the path of totality, will miss out on a total eclipse but observers in St Peter Port should see (through proper solar filters) a good display of “Bailey’s beads”. These result from the last rays of sunlight passing between mountains on the Moon’s surface giving the nearly eclipsed Sun the appearance of a string of bright beads. The last such bead just before and after totality, visible north of the island, gives the famous “diamond ring”.

The various sights can all be experienced within the path of totality. Of course, whether one actually sees anything depends on how clear the skies are. Weather forecasts can be consulted nearer the time of the eclipse, though meteorological records from previous years provide a useful pointer. Taking Plymouth as an example, there is a 5.7% chance that the skies will be completely clear on the day, and a 19.0% chance of them being overcast. The probability of broken clouds is 49.9%, and that of scattered clouds is 25.0%.<sup>21</sup> Another estimate is that the probability of seeing the eclipse in south-west England stands at 45%.<sup>22</sup>

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<sup>21</sup> Philip S Harrington, *Eclipse!*, 1997, p 135

<sup>22</sup> Pam Hine, *Total Eclipse of the Sun in Cornwall and South Devon*, 1998, p 22

### III Emergency Planning

#### A. Cornwall and Devon

No-one knows how many people will travel to Cornwall and Devon to see the total eclipse. However, it is widely accepted that thousands, if not millions, of additional visitors will come to the counties during this time. Gage Williams, the County Planning Co-ordinator for the eclipse in Cornwall, has produced a document entitled *Implications of the Eclipse on 11 August 99*.<sup>23</sup> This includes an estimate of the likely number of additional visitors to Cornwall, based on the capacity of the three main roads into the county. Assuming that traffic flowed steadily over a two-week period around the time of the eclipse, then up to 1.5 million additional people could visit Cornwall. This would be on top of 300,000 tourists and visiting friends and relatives who would ordinarily be present. Though this figure is probably an overestimate (traffic levels tend to be low in the early hours of the morning), it does not take into account people travelling by other methods or willing to spend more than 2 weeks in the county. In addition, many visitors are likely to opt for South Devon instead. Some estimates place the total number of additional visitors to the West Country as high as 4 million or more.<sup>24</sup>

It should be emphasised that such estimates are highly uncertain. Many things have changed since 3 million people reportedly travelled, mostly by rail, to see the eclipse in 1927.<sup>25</sup> The wider range of transport options will tend towards increasing the number of “eclipse tourists”, while at the same time offering some the chance of seeking continental Europe as a vantage point. Extensive coverage of the eclipse on TV and the internet may keep many at home. Some might await a weather report nearer the date, before deciding what to do; this strategy runs the risk of witnessing no more than a partial eclipse from the vantage point of a traffic jam.

There is evidence that some regular visitors to Cornwall, on whom the tourist industry relies, have been put off by media coverage of the eclipse.<sup>26</sup> This has included examples of over-priced accommodation, and alarmist speculation about crowds overwhelming the capacity of the county to cope. Food shortages, inadequate water and sewerage facilities, money shortages in banks have all featured in such reports. Certainly, it seems inevitable that both Cornwall and Devon will see a major influx of visitors. One report<sup>27</sup> talks of “at least 100,000 astronomers” heading for the south-west, and another comments on the eclipse being the most important event for pagans this decade, the prevalence of stone circles and monuments being a factor.<sup>28</sup> Astronomers and pagans, and those attracted to

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<sup>23</sup> <http://www.chycor.co.uk/general/solar-eclipse/coordinator/logistics.htm>, 10 May 1999

<sup>24</sup> “Police will warn of eclipse on the M25”, *Daily Telegraph*, 17 June 1999

<sup>25</sup> “This time next year...”, *The Mail on Sunday*, 9 August 1998

<sup>26</sup> “Land of the sinking sun”, *Guardian*, 20 April 1999

<sup>27</sup> “This time next year...”, *The Mail on Sunday*, 9 August 1998

<sup>28</sup> “Hard day’s night”, *Guardian*, 23 February 1999

the music and other festivals being specially organised,<sup>29</sup> are unlikely to be deterred from coming. The results of a national eclipse survey, sponsored by Cornish Weekly Newspapers, have confirmed that holidaymakers are booking later than normal, and that a “significant rush for accommodation” is likely with the approach of the school holidays. Projecting the results of the most recent survey of 2,000 over 16s indicates that Cornwall could see 800,000 visitors and Devon 400,000.<sup>30</sup> An earlier survey by the Cornwall Tourist Board, in March, showed that substantial accommodation was still available in the county. Ken Hughes, Chairman of the County Council’s Economic Development and Tourism Committee has said:<sup>31</sup>

Some visitors may have picked up on unhelpful press speculation about water, power, healthcare or traffic problems, but one by one the agencies responsible have reassured people that Cornwall is gearing up to cope, and cope well, with the eclipse influx. We can promise every visitor who books and travels well in advance a uniquely memorable experience, and the tourism industry our support in meeting the challenge.

On 16 February 1999, a report of the Chief Executive to the Policy Committee of Devon County Council laid out a set of principles to guide plans for dealing with the eclipse. One principle was to refrain from marketing or promoting the eclipse as a means of ensuring an excellent tourist season without compromising the county’s resources. Importantly, the County Council would plan for “likely or foreseeable emergencies, disasters and contingencies, in consultation with all relevant bodies”.<sup>32</sup>

A sample of the advice being offered to visitors has been provided by the Cornwall Tourist Board:

**Do’s**

Do allow plenty of time for your journey and travel early.

Do bring essential toiletries, water, or drinks and packaged food.

Do expect delays and traffic disruption, please be patient.

Do keep abreast of radio traffic information for local updates.

Use Park and Ride facilities wherever possible.

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<sup>29</sup> [http://www.eclipse.org.uk/eclipse\\_events.htm](http://www.eclipse.org.uk/eclipse_events.htm), 18 June 1999

<sup>30</sup> <http://www.cornwall.gov.uk/>, 17 June 1999

<sup>31</sup> *ibid*, 11 March 1999

<sup>32</sup> Report No. CX/99/17, <http://www.devon-cc.gov.uk/>, 16 February 1999

### **Don'ts**

Don't set off without a firm confirmation of accommodation.

Don't travel on the day of the eclipse.

Don't observe the eclipse without following the recommended safety precautions.

The Devon and Cornwall Eclipse Co-ordinating Group has been closely involved in planning for August's event. The Group is led by the police and includes other emergency services, local authorities, the military and others. Working groups have been established in the areas of media strategy, traffic management and emergency planning. Mindful of the upcoming millennium,<sup>33</sup> the Home Office journal, *Civil Protection*, commented that the "emergency planning world's eyes will be on Cornwall and Devon in August".<sup>34</sup>

## **B. General procedures**

Two years ago, the Parliamentary Under-Secretary of State at the Home Office (George Howarth) gave a speech to the annual conference of the Emergency Planning Society. He alluded to preparations in Cornwall for the 1999 eclipse, with particular regard to the handling of large numbers of people.<sup>35</sup> A chief executive's report to Devon County Council has made the following observation:<sup>36</sup>

The potential for major emergencies during the eclipse period is high. The extra number of visitors coupled with the normal strain of the summer season could lead to major traffic accidents, large fires, incidents at sea, crowding of exposed headlands etc. It is therefore fundamental that the County Council prepares in the best possible way for these events.

In England and Wales, the Emergency Planning Division of the Home Office has responsibilities for civil protection planning, offering guidance and support to local authorities, the police and voluntary organisations.<sup>37</sup> In Scotland, responsibility lies with the Scottish Office (the Scottish Executive after 1 July 1999). At local level, the initial response would ordinarily come from the police who would assume an overall co-ordination role, thus facilitating the work of the other emergency services. Local authorities, and their emergency planning officers, have a support role and take the lead on maintaining essential services, and restoring the community and the environment. The

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<sup>33</sup> House of Commons Library Research Paper 98/72, *The Millennium Bug*, 30 June 1998

<sup>34</sup> "Eclipse provides Millennium dry-run", *Civil Protection*, Summer 1999

<sup>35</sup> <http://www.homeoffice.gov.uk/epd/speech11.htm>, 25 June 1997

<sup>36</sup> Report No. CX/99/17, <http://www.devon-cc.gov.uk/>, 16 February 1999

<sup>37</sup> Foreign and Commonwealth Office, *Britain's Emergency Services*, July 1995



issue of emergency planning was dealt with, in general terms, by the DETR Minister (Nick Raynsford), replying to an adjournment debate,<sup>38</sup> *1999 Eclipse Cornwall*:

My right hon. Friend the Home Secretary, who is responsible for emergency planning in England and Wales, expects local authority emergency planners to deal with issues arising from major incidents or emergencies according to the principles of integrated emergency management. That is an all-hazards approach to emergency planning, which encourages local emergency planners to plan with all the agencies that are likely to be involved in a major incident response. The chief characteristics of plans developed according to the principles of integrated emergency management are that they should be non-specific and flexible, and that they should work well regardless of an incident's cause. They are therefore ideal to handle an incident such as the eclipse.

Regulations made under the Civil Defence Act 1948 require local civil protection authorities to make, keep under review and revise emergency plans for their areas and to carry out exercises based on them.

Local authorities are also required to provide training in the use of their emergency plans. Grant is made available to those local authorities with the statutory duty, and the Central and Local Government Group (CLGG) of the Home Office Emergency Planning Division is responsible for the allocation and monitoring of that grant.<sup>39</sup>

A written answer in January provided further background on government assistance.<sup>40</sup>

Ms Atherton: To ask the Secretary of State for the Home Department what assistance the Government will offer to Cornwall in dealing with problems arising from the total eclipse of the sun on 11 August 1999.

Mr. George Howarth: The Home Office is responsible for emergency planning in England and Wales and makes an annual grant to county level local authorities to make plans for emergencies. This grant complements the local authority's own commitment.

Under Integrated Emergency Management arrangements, local emergency planners develop non-specific and flexible plans designed to produce a multi-agency response to the effects of an incident irrespective of the cause. This approach is ideal for an incident such as the Eclipse which is not an unforeseen emergency, but is an event for which there has been sufficient time for local services to plan. There are arrangements to seek mutual aid, if required, from services in other areas and ultimately from the military.

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<sup>38</sup> HC Deb 25 November 1998 cc166-74W

<sup>39</sup> <http://www.homeoffice.gov.uk/epd/clg.htm>, 23 June 1999

<sup>40</sup> HC Deb 11 January 1999 cc84-5W

My officials have been involved in discussions with those responsible for planning the response to the Eclipse, including the Chief Executive of Cornwall County Council and the Chief Constable of Devon and Cornwall Constabulary and will continue to watch developments closely offering assistance where possible.

The CLGG is also concerned with the co-ordination of national emergency planning legislation and policy and the dissemination of best practice guidelines at a national level. In so far as the latter is concerned, key publications include *The Exercise Planners' Guide* and *Dealing with Disaster*.<sup>41</sup>

The third edition of *Dealing with Disaster* was published in 1997, and serves as a framework for the more detailed plans prepared by the emergency services and local authorities. This makes clear the role of the police in co-ordinating activities at the scene of a major incident, one definition of which is given as “any emergency that requires the implementation of special arrangements by one or more of the emergency services, the NHS or the local authority for ... the involvement either directly or indirectly of large numbers of people”. On the specific role of local authorities, the document states:

In the immediate aftermath of a disaster the principal concerns of local authorities are to provide support for the emergency services, continue normal support and care for the local and wider community, use resources to mitigate the effects of the emergency and co-ordinate the response by organisations other than the emergency services. As time goes on, and the emphasis switches to recovery, the local authority will take a leading role to facilitate the rehabilitation of the community and restoration of the environment. Even a relatively small disaster may overwhelm the resources of the local authority in whose area it occurs. Against this possibility plans need to be made which will, in appropriate circumstances, trigger arrangements for mutual aid from neighbouring authorities, delivering cross boundary assistance if required. Arrangements may range from simple agreements to offer whatever assistance is available in the event of an incident, to more formal arrangements for the shared use of resources which could include vehicles, equipment and people. (Payment arrangements may need to be included in any agreement.) Emergency financial assistance may be available for affected local authorities under the Bellwin Scheme, details of which are promulgated annually to local authorities by letter from the Department of Environment, Transport and the Regions.

The Bellwin Scheme, named after the former Department of the Environment Minister Lord Bellwin, provides for reimbursement to local authorities for emergency expenditure incurred.<sup>42</sup>

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<sup>41</sup> Home Office, *Dealing with Disaster*, 1997

<sup>42</sup> DETR press notice 504, *Government help for flood hit area*, 21 May 1999

## C. Statutory powers

The successful management of large numbers of people, and the prevention of emergency situations arising, clearly relies predominantly on goodwill and common sense. What follows is a brief account of the statutory provisions governing police powers, the public order provisions designed to enable the police to deal with public processions, public assemblies and other events which pose a potential or actual threat to public order, and the statutory provisions governing the introduction of emergency powers. Relevance to the particular circumstances of the eclipse will vary. The amendment or extension of any of these statutory powers would require primary legislation.

In addition, the police have general powers to regulate road traffic and a driver must comply with directions given (section 35, *Road Traffic Act 1988*). Traffic wardens enjoy similar powers by virtue of regulations referred to in the *Road Traffic Regulation Act 1984*. A constable or other person authorised by the chief officer of police may also erect traffic signs to give effect to local regulations made by the traffic authorities;<sup>43</sup> the Highways Agency acting for the Secretary of State in the case of trunk roads, and local authorities for other roads.

### 1. General police powers

General police powers to stop and search people and vehicles, to enter and search property and to arrest and detain people suspected of having committed, or of being about to commit criminal offences, are set out in the *Police and Criminal Evidence Act 1984*. More specific statutory powers of arrest and powers enabling the police and others to enter and search property in certain circumstances are provided for in other legislation. Richard Stone's book *Entry, Search and Seizure*,<sup>44</sup> which is a useful and detailed guide to these powers, is available in the House of Commons Library.

A source of information on police powers of stop and search without arrest and powers of arrest is *Police Powers: A Practitioner's Guide* by Howard Levenson, Fiona Fairweather and Ed Cape.<sup>45</sup> This includes a discussion of the powers of the police and ordinary citizens to arrest people for breach of the peace.<sup>46</sup> It also includes a summary of the additional police powers under section 60 of the *Criminal Justice and Public Order Act 1994*.<sup>47</sup> A further source is the latest version of the *Code of Practice for the exercise by police officers of statutory powers of stop and search* issued by the Home Secretary under the *Police and Criminal Evidence Act 1984*.

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<sup>43</sup> Lord Hailsham of St. Marylebone, *Halsbury's Laws of England*, 1981

<sup>44</sup> Richard Stone, *Entry, Search and Seizure* (third edition 1997)

<sup>45</sup> Howard Levenson, Fiona Fairweather and Ed Cape, *Police Powers: A Practitioner's Guide*<sup>45</sup> (Legal Action Group Third Edition 1996 pp 17-27 & 111-146

<sup>46</sup> *ibid*, pp 119-20

<sup>47</sup> *ibid*, pp 40-44

Section 60 of the *Criminal Justice and Public Order Act 1994* permits a senior police officer who reasonably believes that incidents involving serious violence may take place in any locality in his area to issue an authorisation enabling police constables to stop and search people and vehicles for offensive weapons and dangerous weapons at any place within that area for up to 24 hours, without the constables needing to satisfy the "reasonable suspicion" requirement that applies to the exercise of their general powers under the *Police and Criminal Evidence Act 1984*. The *Prevention of Terrorism (Additional Powers) Act 1996* inserted a section 13B into the *Prevention of Terrorism (Temporary Provisions) Act 1989* which enables senior police officers to give similar authorisations where it appears to them to be expedient to do so in order to prevent acts of terrorism. This power does not apply, however, where the acts of terrorism are connected solely with the affairs of the United Kingdom or any part of it other than Northern Ireland.

## 2. Public order

### a. Notice requirements

Section 11 of the *Public Order Act 1986* requires the organisers of public processions to give the local police written notice of any proposal to hold a public procession intended to demonstrate support for, or opposition to, the views or actions of any person or body of persons, to publicise a cause or campaign, or to mark or commemorate an event, unless it is not reasonably practicable to give any advance notice of the procession. This provision does not apply to funeral processions or processions commonly or customarily held in the area concerned. The notice must be delivered by hand or by registered post to a police station in the police area in which the procession is to start,<sup>48</sup> at least 6 clear days before the date on which the procession is to be held.

The organisers of a procession (but not the participants) can be fined up to £1,000 if the notice requirement is not satisfied, or if the date, starting time or route of the procession differs from the date, starting time or route set out in the notice, although a number of defences are provided in Sections 11(8) and (9). It is a defence for a person accused of this offence to prove that he did not know of, and neither suspected nor had reason to suspect, the failure to satisfy these requirements. To the extent that an alleged offence turns on a difference of date, time or route, it is also a defence for the accused to prove that the difference arose from circumstances beyond his control or from something done with the agreement of a police officer or by his direction.

Commentators note that requiring organisers of proposed processions in England and Wales to give notice to the police is not the same as requiring them to obtain express permission to hold processions, as the authorities to whom they have to give notice do not have express powers to refuse permission to hold the procession, as is the case in some

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<sup>48</sup> or, where the procession is to start in Scotland and cross into England, in the first police area in England on the proposed route

other jurisdictions. Once the notice is given the onus passes to the police to determine whether conditions should be imposed or further steps taken to prohibit the procession. If the police do not impose conditions or take steps to prohibit the procession, an organiser who has complied with the notice provision may go ahead without further formality, subject only to the particulars concerning the date, time and route specified in the notice and to the general criminal law, including the law relating to public order and obstruction.<sup>49</sup>

**b. *Imposing conditions on processions***

Section 12 of the 1986 Act, which extends to England and Wales and Scotland, gives senior police officers the power to impose conditions on public processions where they reasonably believe that the processions will result in serious public disorder, serious damage to property or serious disruption to the life of the community, or where they believe the organisers' purpose is to intimidate others.

A person who organises a public procession and knowingly fails to comply with a condition imposed under Section 12 commits an offence punishable by up to three months imprisonment and a £2,500 fine, as does a person who incites another person to take part in a public procession and knowingly fail to comply with such a condition. A person who takes part in a public procession and knowingly fails to comply with a condition imposed under Section 12 commits an offence punishable by a fine of up to £1,000. A defence is available to organisers and participants accused of these offences where the failure to comply with a condition arises from circumstances beyond their control.

**c. *Prohibiting public processions***

If a chief officer of police in England and Wales reasonably believes that particular local circumstances mean that the powers granted to him under Section 12 of the *Public Order Act 1986* to impose conditions on public processions will be insufficient, he may apply to the local council under Section 13 of the 1986 Act for an order prohibiting any or all public processions in the area for up to three months. A council must obtain the consent of the Home Secretary before making such an order. The Metropolitan Police Commissioner and the Commissioner of Police for the City of London may make such orders themselves, with the consent of the Home Secretary.

Under section 11 of the *Public Order Act 1986* advance notice of any proposals to hold a public procession must be given by the organisers of the procession.

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<sup>49</sup> See *Offences against Public Order* – ATH Smith 1987 para 8-04 p.133 and *The Laws of Scotland Stair Memorial Encyclopaedia* Vol. 14 para 570

**d. Imposing conditions on public assemblies**

Section 14 of the *Public Order Act 1986* provides that:

- (1) If the senior police officer, having regard to the time or place at which and the circumstances in which any public assembly is being held or is intended to be held, reasonably believes that:
  - a) it may result in serious public disorder, serious damage to property or serious disruption to the life of the community, or
  - b) the purpose of the persons organising it is the intimidation of others with a view to compelling them not to do an act they have a right to do, or to do an act they have a right not to do,

he may give direction imposing on the persons organising or taking part in the assembly such conditions as to the place at which the assembly may be (or continue to be) held, its maximum duration, or the maximum number of persons who may constitute it, as appear to him necessary to prevent such disorder, damage or intimidation.

The direction must be given in writing.

Organisers of public assemblies who knowingly fail to comply with conditions imposed under this section commit an offence punishable by up to three months' imprisonment and a £2,500 fine, although it is a defence for them to prove that the failure arose from circumstances beyond their control. Participants who knowingly fail to comply with the conditions commit an offence punishable by a fine of up to £1,000, although once again they have a defence if they can prove that the failure arose from circumstances beyond their control. A person who incites a participant to commit this offence may be punished by up to three months' imprisonment and a £2,500 fine. A constable in uniform may arrest without warrant any person he reasonably suspects of committing any of these offences.

**e. Prohibiting public assemblies**

Section 70 of the *Criminal Justice and Public Order Act 1994* inserted a Section 14A into the *Public Order Act 1986*, providing chief officers of police with a power to apply to the district council for a ban prohibiting assemblies for up to four days in an area with a 5 mile radius of a specified centre. The power to apply for a ban may be exercised in the following circumstances:

- 14A.(1) If at any time the chief officer of police reasonably believes that an assembly is intended to be held in any district at a place on land to which the public has no right of access or only a limited right of access and that the assembly-
  - (a) is likely to be held without the permission of the occupier of the land or to conduct itself in such a way as to exceed the limits of any permission of his or the limits of the public's right of access, and

- (b) may result-
- (i) in serious disruption to the life of the community, or
  - (ii) where the land, or a building or monument on it, is of historical, architectural, archaeological or scientific importance, in significant damage to the land, building or monument,
- he may apply to the council of the district for an order prohibiting for a specified period the holding of all trespassory assemblies in the district or a part of it, as specified.

An order made under this provision by a district council in England and Wales requires the consent of the Home Secretary. It may be revoked or varied by a subsequent order made in the same way.

It is an offence punishable by up to 3 months imprisonment and a £2,500 fine for a person to organise an assembly which he knows is prohibited or to incite another person to take part in a prohibited assembly. Taking part in a prohibited assembly is an offence punishable by a £1,000 fine.<sup>50</sup> A person committing an offence under this Section may be arrested without warrant.

Section 71 of the *Criminal Justice and Public Order Act 1994* added a new Section 14C to the *Public Order Act 1986*, giving the police powers to stop people who they believe are proceeding towards prohibited assemblies and to direct them not to carry on. A person who fails to comply with such a direction commits an offence punishable by a £1,000 fine and may be arrested without warrant.

***f. Powers to remove trespassers on land***

Section 61 of the *Criminal Justice and Public Order Act 1994* replaced Section 39 of the *Public Order Act 1986*, which had given the police powers they had not often used to direct trespassers to leave land and arrest those trespassers who had committed an offence by not complying with the direction. Under Section 61 of the 1994 Act, if the senior police officer present at the scene reasonably believes:

- i) that two or more persons are trespassing on land and are present there with the common purpose of residing there for any period;
- ii) that reasonable steps have been taken by or on behalf of the occupier to ask them to leave and

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<sup>50</sup> Section 14B *Public Order Act 1986*, inserted by Section 70, *Criminal Justice and Public Order Act 1994*

- a) that any of those persons has caused damage to the land or to property on the land or used threatening, abusive or insulting words or behaviour towards the occupier, a member of his family or an agent of his, or
- b) that those persons have between them six or more vehicles on the land,

he may direct any or all of those persons to leave the land and to remove their vehicles or property from it. Where the officer reasonably believes that the persons involved were not originally trespassers but have become trespassers he must reasonably believe that the conditions set out above were satisfied after they became trespassers before he can exercise the power to direct them to leave. A number of different and potentially complex sets of facts must therefore be established by the chief police officer present before a direction can be given.

A person who knows that a direction has been given which applies to him commits an offence punishable by up to three months' imprisonment and a £2,500 fine if he fails to leave the land as soon as is reasonably practicable, or having left again enters the land as a trespasser within three months of the direction being given. Such a person may be arrested without warrant.

It is a defence for a person charged with this offence to show that he was not trespassing on the land, or that he had reasonable excuse for not leaving the land as soon as was reasonably practicable, or for re-entering it as a trespasser. The Section applies to common land as well as private land and in the case of common land to which the public has access "occupier" means the local authority as well as any commoner.

Section 62 of the 1994 Act gives the police powers to seize and remove vehicles belonging to, in the possession or under the control of people to whom a direction under Section 61 has been given, if they fail to remove them or re-enter the land as trespassers with them during the three-month period following the issuing of a direction, and have no reasonable excuse for their actions. The Home Secretary is able, under Section 67(3) of the 1994 Act, to make regulations providing for the retention, safe-keeping, disposal and destruction in prescribed circumstances of vehicles seized under Section 62 and may also prescribe charges for their removal, retention, disposal and destruction. The vehicles may be retained until the charges are paid.

#### ***g. Raves***

Sections 63-66 of the *Criminal Justice and Public Order Act 1994* created new police powers to stop or prevent raves, i.e. unlicensed open air gatherings at which loud music is played during the night. Section 63(1)-(2) of the Act provides that:

- (1) This section applies to a gathering on land in the open air of 100 or more persons (whether or not trespassers) at which amplified music is played during the night (with or without intermissions) and is such as, by reason of its loudness and duration and the time at which it is played, is likely to cause serious distress to the inhabitants of the locality; and for this purpose



- a) such a gathering continues during intermissions in the music and, here the gathering extends over several days, throughout the period during which amplified music is played at night (with or without intermissions); and
  - b) "music" includes sounds wholly or predominantly characterised by the emission of a succession of repetitive beats.
- (2) If, as respects any land in the open air, a police officer of at least the rank of superintendent reasonably believes that-
- a) two or more persons are making preparations for the holding there of a gathering to which this section applies,
  - b) ten or more persons are waiting for such a gathering to begin there, or
  - c) ten or more persons are attending such a gathering which is in progress,

he may give a direction that those persons and any other persons who come to prepare or wait for or to attend the gathering are to leave the land and remove any vehicles or other property which they have with them on the land.

The direction may be communicated to the people concerned by any constable at the scene and people are to be treated as having had a direction communicated to them if reasonable steps have been taken to bring it to their attention. The direction does not apply to "exempted persons", who are the occupier of the land, any member of his family and any employee or agent of his and any person whose home is situated on the land.

A person who knows that a direction has been given which applies to him and fails to leave the land as soon as reasonably practicable, or having left re-enters the land within a period of 7 days of the direction being given, commits an offence punishable by up to 3 months' imprisonment and a £2,500 fine and may be arrested by a constable in uniform without a warrant. It is a defence for a person to show that he had a reasonable excuse for failing to leave the land as soon as reasonably practicable or for re-entering the land.

Section 63 does not apply to gatherings licensed by an entertainments license in England and Wales.

Section 64 of the 1994 Act gives the police powers to enter land in relation to which a direction may be given under section 63, in order to exercise powers under that section or to seize and remove any vehicle or sound equipment where a direction under section 63 has not been complied with. Police constables exercising powers under this section may enter land without a warrant. Section 67 of the 1994 Act enables the Home Secretary to make regulations providing for the retention and safe-keeping of vehicles or their disposal and destruction in prescribed circumstances. Section 67 also gives the police powers to retain sound equipment seized under section 64, which may be retained until the conclusion of proceedings against the person from whom it was seized. Section 66 gives the courts powers to order the forfeiture of sound equipment seized under section 64(4) from a person convicted of an offence under section 63 of the 1994 Act.

Section 65 of the 1994 Act gives police constables powers to stop people proceeding to raves. It provides that if a constable in uniform reasonably believes that a person is on his way to a gathering in respect of which a direction given under section 63 is in force, he may stop that person and direct him not to proceed in the direction of the gathering. The power may only be exercised within 5 miles of the boundary of the site of the gathering. It does not apply to "exempted persons", i.e. the occupier of the land in respect of which the gathering has been given, any member of his family and any employee or agent of his and any person whose home is situated on the land.

A person who knowingly fails to comply with a police constable's direction under section 65 commits an offence punishable by a fine of up to £1,000. A police constable may arrest without warrant anyone he reasonably suspects of committing the offence.

#### ***h. Powers to remove unauthorised campers***

Section 77 of the *Criminal Justice and Public Order Act 1994* gives local authorities the power to direct people who are residing in a vehicle or vehicles within that authority's area on land forming part of a highway, any other unoccupied land, or on occupied land without the consent of the occupier, to leave the land and remove their vehicles and any other property they have with them on the land.

Section 77(2) provides that:

(2) Notice of a direction under subsection (i) must be served on the persons to whom the direction applies, but it shall be sufficient for this purpose for the direction to specify the land and (except where the direction applies to only one person) to be addressed to all occupants of the vehicles on the land, without naming them.

A person who knows that a direction has been given which applies to him and who fails to leave the land or remove any vehicle or other property which is subject to the direction as soon as is practicable, or who re-enters the land with a vehicle within three months of the direction being given commits an offence punishable by a £1,000 fine. It is, however, a defence for a person to show that his failure to leave or to remove the vehicle or other property as soon as practicable or his re-entry with a vehicle was due to illness, mechanical breakdown or "other immediate emergency".<sup>51</sup>

Where a direction has been given under Section 77 of the 1994 Act and a local authority has complained to a local magistrates court that vehicles in which they are residing remain on the land concerned in contravention of the direction, Section 78 gives the magistrates' court the power, if it is satisfied that this is indeed the case, to make an order requiring the removal of any vehicle or other property which is so present on the land and any person residing in it. The court may issue a summons requiring the people to whom it is directed to appear before

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<sup>51</sup> Section 77(5) *Criminal Justice and Public Order Act 1994*

the court to answer the complaint and this may be directed to the occupant of a particular vehicle on the land, or to all occupants of all vehicles on the land, without naming them.

Section 79(2)-(4) of the 1994 Act makes the following provisions for the service of notice of a direction to leave or a summons to appear before a court to answer a complaint about a failure to leave following the issuing of a direction:

(2) Where it is impracticable to serve a relevant document on a person named in it, the document shall be treated as duly served on him if a copy of it is fixed in a prominent place to the vehicle concerned; and where a relevant document is directed to the unnamed occupants of vehicles, it shall be treated as duly served on those occupants if a copy of it is fixed in a prominent place to every vehicle on the land in question at the time when service is thus effected.

(3) A local authority shall take such steps as may be reasonably practicable to secure that a copy of any relevant document is displayed on the land in question (otherwise than by being fixed to a vehicle) in a manner designed to ensure that it is likely to be seen by any person camping on the land.

(4) Notice of any relevant document shall be given by the local authority to the owner of the land in question and to any occupier of that land unless, after reasonable inquiries, the authority is unable to ascertain the name and address of the owner or occupier; and the owner of any such land and any occupier of such land shall be entitled to appear and to be heard in the proceedings.

An order issued by a magistrates' court under Section 78 may authorise a local authority to take the following steps to ensure compliance:

(2) An order under this section may authorise the local authority to take such steps as are reasonably necessary to ensure that the order is complied with and, in particular, may authorise the authority, by its officers and servants-

(a) to enter upon the land specified in the order; and

(b) to take, in relation to any vehicle or property to be removed in pursuance of the order, such steps for securing entry and rendering it suitable for removal as may be so specified.

Wilful obstruction of a person exercising a power conferred by an order under Section 78 is an offence punishable by a £1,000 fine.

*i. Operation of the public order provisions of the Public Order Act 1986 and the Criminal Justice and Public Order Act 1994*

The use by the police of their powers under the 1986 and 1994 Acts is a matter for the discretion of the local police officers concerned. The police are under no obligation to take action and if the exercise of their powers requires them to make on-the-spot assessments of potentially complex subjects such as the ownership of land (as a prerequisite of judging

whether or not a person is a "trespasser") or to use force against large numbers of people, including women and children, they may well decide that an alternative means of resolving the matter is preferable to the risk of alienating the local community. Commentators have referred to the demonstrations against the live export of animals, which occurred after the enactment of the 1994 Act, as examples of the difficulties faced by the police in dealing with public order situations where they cannot be sure that there will be public support for a display of force. The new provisions in the 1994 Act do not themselves provide assistance in resolving these dilemmas, which arise from consideration of the principle of "policing by consent" on which policing in Britain has tended to be based.

### 3. Emergency powers

The Government's emergency powers are provided in the *Emergency Powers Act 1920*. This legislation allows the Government to declare a state of emergency if events have occurred or are about to occur which are interfering, or will interfere with, "the supply and distribution of food, water, fuel or light, or with the means of locomotion, to deprive the community or any substantial portion of the community, of the essentials of life" (Section 1).

*Halsbury's Statutes*<sup>52</sup> makes the following comments about these powers to deal with civil emergencies:

The Emergency Powers Act 1920 confers powers exercisable on occasions of emergency arising from civil disturbance. It empowers Her Majesty to declare that a state of emergency exists where it appears that there have occurred, or are about to occur, events of such nature as to be calculated, by interfering with the supply and distribution of food, water, fuel or light, or with the means of locomotion, to deprive the community, or any substantial portion of the community, of the essentials of life. Where a proclamation of emergency is made and is in force, s.2 of that Act empowers the making of regulations by Orders in Council for securing the essentials of life and for imposing penalties on persons contravening the regulations. Proclamations under the Act are limited in duration to one month, and regulations thereunder to seven days unless continued by resolutions of both Houses of Parliament. The powers under the Act have been used sparingly to limit the effect on the community of strikes.

On 19 January 1999 the Home Office minister, George Howarth, gave the following Written Answer to a Question from Mr McNamara about UK law concerning States of Emergency<sup>53</sup>:

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<sup>52</sup> Fourth edition Vol 48 p 929

<sup>53</sup> HC Deb 19 January 1999 Vol 323 c 408W

**Mr. McNamara:** To ask the Secretary of State for the Home Department which department of Government have responsibility for keeping the UK State of Emergency regulations under review; when the last review was made; if he will undertake his own departmental review of the regulations; and if this matter has been included in the general review of international obligations announced on 3 July 1997.

**Mr. George Howarth:** The Home Office has overall responsibility for any emergency regulations that might be made under the powers contained in the Emergency Powers Act 1920. However, as the Act covers a wide range of subjects, a number of other Departments might also be involved if regulations were needed.

A review of the potential requirements was carried out in 1995. A fresh review involving departments generally, which includes considering Millennium related issues, is in progress. Until a situation requiring the use of emergency powers arose, any link with international obligations would be hypothetical.

David Bonner's book *Emergency Powers in Peacetime*,<sup>54</sup> published in 1985, contains useful information about the use which has been made of the 1920 Act, although some of the other statutes to which it refers have been repealed or amended since the book was published.

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<sup>54</sup> David Bonner, *Emergency Powers in Peacetime* (1985) pp 211-270

## IV Parliamentary Interest

In November 1998, the Member for Truro and St. Austell (Matthew Taylor) secured an adjournment debate, *1999 Eclipse (Cornwall)*.<sup>55</sup> Mr Taylor began by discussing the rarity of solar eclipses, and the large number of people expected to visit Cornwall:

I admit that I do not know how many people will come to see the eclipse. The trouble is that no one knows, not even the Minister. However, we know that it is a once-in-a-lifetime experience...

...How many people will come, and can we cope? Some 500,000 people live in the county. The number of people expected during the eclipse period will far outreach the capacity of the county's infrastructure, which is able to cope with about 900,000 without special measures. That is only 150,000 more than the usual August holiday population, so anything in excess of 150,000 visitors for the eclipse will cause problems. However, we expect far more than that.

It is estimated that 1.2 million visitors can get into the county by road, provided that they spread out their travel over a realistic period rather than arrive immediately before and leave immediately after the eclipse. Travel about 10 days before and 10 days after the eclipse would be realistic. That would bring the population up to about 1.7 million, rather than the 900,000 that the existing infrastructure could cope with.

It is almost impossible to estimate how many people will arrive by train, on cruise liners--many people have already booked berths--by yacht and by air on the many special flights into Newquay that are being arranged. That is likely to bring a further 100,000 visitors.

By that stage, main roads will be jammed, as already happens on summer weekends in many parts of the county when hundreds of thousands travel to temporary camp sites. Sewerage and mains water provision for those sites is a serious problem.

Many estimates far exceed those figures. The general prediction is in excess of 2 million visitors, and some estimates have been as high as 4 million. When we met the chief constable, he said, "That can't be allowed. We can't take more than 2 million." I asked him how we can prevent them coming, once they are in their cars and on their way, let alone stuck in a traffic jam, but there is no obvious answer.

At one point, Anthony Steen (Totnes) intervened to suggest the option of visiting the southern part of his constituency to see the total eclipse. Another Member (Adrian Sanders) highlighted the dangers associated with looking towards the Sun.

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<sup>55</sup> HC Deb 25 November 1998 cc 166-174

Mr Taylor went on to highlight two additional issues: the capacity of South West Water to handle the additional demand for water and sewerage services, and the impact road congestion would have on the mobility of ambulances and the emergency services in general. He noted that the police and other emergency services had already cancelled all leave from 30 July until 22 August. On the subject of the additional costs associated with the eclipse, he commented:

Without extra help, our ambulance, police and other services will struggle to cope. Central Government will benefit from extra revenue generated by the eclipse, and businesses in the counties will certainly benefit, but emergency and other public services will bear a cost with no extra return...

...I stress that we need not just financial but practical support. I do not expect the Minister to promise huge sums today--I have participated in too many Adjournment debates to expect that--but I hope that the debate will help to focus Ministers' attention on a problem that has not received the national attention that it deserves, perhaps because an even bigger event, the millennium, will take place later in the same year. The Jubilee line extension may or may not be ready for the dome, but it is certain that no new roads will be built to cater for the eclipse in Cornwall...

...I do not know whether the Minister fancies the job, but what we need is a Minister for the eclipse.

In reply, the Parliamentary Under-Secretary of State for the Environment, Transport and the Regions (Nick Raynsford) declined to take on the latter role, judging that Devon and Cornwall would be able respond appropriately:

It is fundamental to arrangements for dealing with an emergency that the first response should be at local level. If the scale of an incident overwhelms local resources, the first recourse is usually to mutual-aid arrangements with services in adjacent areas, and the second to military aid. The eclipse is not an unforeseen emergency, as the hon. Member for Truro and St. Austell recognised; it is not a sudden danger requiring immediate action. An eclipse is an event for which there has been sufficient time for local services to plan and, accordingly, to seek assistance under mutual-aid arrangements if that is required.

The Minister noted that Devon and Cornwall constabulary had estimated the additional cost of policing the eclipse to be in the region of £600,000 – less than 1 per cent. of the force's current budget. He went on to detail what he saw as relatively favourable funding provisions for policing in the counties.

I have covered the subject of police funding, and shall move on to the other services for which the eclipse will have implications, as the hon. Member for Truro and St. Austell rightly emphasised. Emergency planning in the water industry is one of the other main areas affected. In June, under the provisions of section 208 of the Water Industry Act 1991, the Department issued the Security and Emergency Measures (Water and Sewerage Undertakers) Direction 1998. It

requires all water and sewerage companies in England, including South West Water, to make contingency plans, based on the integrated emergency planning concept, to cater for all types of emergency, irrespective of the cause.

Mr Raynsford not only doubted that the police would qualify for a special grant, but also that the local authorities would meet the requirements of the Bellwin scheme.

On resources, I know that there have been calls for the Government to use available measures--under what is known as the Bellwin scheme--to help local authorities cope financially with emergencies. The scheme is designed to prevent an undue financial burden falling on council tax payers of an authority that is affected by an emergency or disaster that threatens life or property. An incident for which assistance is sought must involve clearly exceptional conditions by local standards, and damage to local authority infrastructure for communities must be exceptional, too. In the past, the scheme has generally been activated following events such as freak storms or floods--most recently, severe flooding across the midlands over Easter.

On the face of it, expenditure that authorities might incur as a result of the eclipse seems likely to be outside the scheme's criteria. However, we would of course consider any case that an authority might make for the activation of the scheme. If some of the worst prognoses of the hon. Member for Truro and St. Austell turned out--unfortunately--to be true and there were very serious problems, the authority would unquestionably be in a position to seek assistance under the Bellwin scheme. I hope that that will not be so. I hope that, with sufficient forward planning, the risk can be minimised. However, I would not rule out altogether the need for such assistance in the event of a serious breakdown of normal administrative arrangements.

Ending on a positive note, the Minister noted the “wonderful opportunity” for the tourism industries of Devon and Cornwall.

The impact of the eclipse on tourism was a focus of Richard Spring’s contribution to the Whitsun adjournment debate.<sup>56</sup> He was particularly concerned about the impact negative publicity was having:

Unfortunately, there has been ridiculous and damaging hysteria connected with the eclipse and its effect on tourism, with lurid tales of traffic gridlock, food shortages and overcrowding. In the Adjournment debate secured by the hon. Member for Truro and St. Austell (Mr. Taylor) on 25 November 1998, that was all graphically described. Talk of tourists being fleeced, hordes of journalists and amateur astronomers arriving, and water purification and distribution problems have led to press comment that has been deeply damaging to the crucial tourist industry in the county and for the entire United Kingdom in the run-up to the millennium celebration.

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<sup>56</sup> HC Deb 26 May 1999 cc 288-290



Bookings for hotels and self-catering accommodation were all substantially down on last year, tourists would not be “fleeced” and “extensive and comprehensive” arrangements had been put in place to minimise any problems that might arise.

In conclusion, it is about time that a positive message was sent out about Cornwall and the eclipse. It would be good if all hon. Members from Cornwall could help the tourist industry there by projecting a positive image and message, as I have tried to do this morning. That would be welcome to their constituents and the entire country. The message needs to be heard loud and clear.

In addition to debates, Members have tabled parliamentary questions, notably on safe viewing of the eclipse.<sup>57</sup> In reply to a series of points raised by Alan Duncan, the Health Minister John Denham wrote:<sup>58</sup>

The Royal College of Ophthalmologists, the College of Optometrists and the Royal National Institute for the Blind were among the first bodies to advise us of the need for guidance on viewing the eclipse. We agreed to help them with the production and distribution of a leaflet, "Observing Solar Eclipses--Taking care of your sight", which is published on 23 June for distribution to tourist information centres, libraries, optical practices and other places to which the public have ready access.

In summary, the leaflet warns that looking directly at the sun is very dangerous. The radiation could permanently damage the eye. The safest way to view the eclipse is indirectly with, for example, a pinhole projection viewer. If people ignore this advice and decide to use a solar filter or a pair of eclipse spectacles, they do so at their own risk. They would be well advised to buy the device from a reputable outlet and ensure that it had a CE mark to show it had been approved under the Personal Protective Equipment Directive and also ensure that it came with full instructions for use, that it fitted closely to the face and that the lenses were not scratched or damaged. Even with covers for the eyepiece, binoculars and telescopes are dangerous because they can still expose the eye to excessive radiation.

We have arranged with the Department for Education and Employment for a summary of the advice to be included in the July edition of the "Spectrum" journal, which is sent to all heads of schools and chairs of governors. A summarised version of the leaflet has already been made available to all general practitioners and hospital doctors.

The College of Optometrists will publish the leaflet on their web site: [www.College-optometrists.org](http://www.College-optometrists.org) and see that reference to it is included in the main Internet indexes.

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<sup>57</sup> HC Deb 23 June 1999 c 384W

<sup>58</sup> HC Deb 21 June 1999 cc 291-2W

We recognise that the media have a key role in educating the public on the risks to sight from the sun and we are collaborating on a series of news items in the period up to 11 August.

Seventy two years ago, parliamentary interest was largely confined to the question of Members' opportunity to view the eclipse.<sup>59</sup>

Mr. PETHICK-LAWRENCE asked the Prime Minister whether he is proposing to afford any facilities by arrangement of the business of this House so as to enable Members of Parliament to view the total eclipse of the sun in the early hours of Wednesday, 29<sup>th</sup> June?

The PRIME MINISTER (Mr. Baldwin): The question of the relative importance between matters terrestrial and celestial must be arranged through the usual channels.

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<sup>59</sup> HC Deb 4 May 1927 c 1618

## V Further Reading

Unsurprisingly, the August 1999 solar eclipse has spawned a large number of publications. A comprehensive guide to the eclipse from a UK perspective, with precise timings of the total and partial eclipses for a variety of locations, appears in *The RGO Guide to the 1999 Total Eclipse of the Sun* (Steve Bell, Royal Greenwich Observatory 1997). Philip S. Harrington's book, *Eclipse!* (John Wiley & Sons, 1997) provides a good explanation of how eclipses arise, information on safe ways to view them, as well as details of all solar (and lunar) eclipses during the period 1998-2017.

A huge amount of astronomical material is available on the internet, including the UK Eclipse Group website <http://www.eclipse.org.uk/>. This includes links to many other sites dealing with all aspects of the eclipse, such as science and tourism. The Minnesota Astronomical Society has an amusing and educational animation of lunar phases at <http://www.mnastro.org/moonphases/>.

A thorough overview of the emergency planning and tourism issues, with an emphasis on Cornwall, appears in a document prepared by Gage Williams entitled *Implications of the eclipse on 11 Aug 99*; the text is available at <http://www.chycor.co.uk/general/solar-eclipse/coordinator/logistics.htm>.