

## A catalogue of the observations of the mutual phenomena of the Galilean satellites of Jupiter made in 1985 during the PHEMU85 campaign

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**Abstract.** — In this paper, all the usable light curves obtained during the PHEMU85 campaign of observations of the mutual phenomena of the Galilean satellites are presented. These observations will provide accurate astrometric positions of major interest for dynamical studies of the motion of the Galilean satellites. The aim of this work is to give observational data directly usable for theoretical studies. We made 166 observations of 64 mutual events from 28 sites. The corresponding data are given in the present paper and compared with the theoretical predictions. The accuracy of each observation has been determined. For each observation, information is given about the telescope, the receptor, the site and the observational conditions.

**Key words:** mutual phenomena — Galilean satellites of Jupiter.

### 1. Introduction.

For the favorable occurrence of mutual phenomena of the Galilean satellites in 1985, a special effort has been made in order to observe as many as possible events. A campaign of observations has been coordinated among about 28 sites in Europe and South America. Several techniques were used for these observations. A few observations were made visually by amateur astronomers. They are presented in this paper only for the qualitative information that they provide

for comparison with the other light curves. The whole set of observations is composed of 166 lightcurves of 64 events.

### 2. The mutual events.

Once every six years, the Earth and the Sun cross the equatorial plane of Jupiter (the jovian declinations of the Earth and the Sun become zero). Since the Galilean satellites have their orbital planes very close to the jovian equator, mutual phenomena occur: the satellites occult and eclipse each

other during about six months. The 1985 period was very favorable since it happened during the opposition of Jupiter and the Sun (Fig. 1). However the declination of Jupiter was very negative that was more favorable for the observatories of the southern hemisphere of the Earth.

Since there is no atmosphere around the Galilean satellites, the photometric observation of such phenomena is very accurate for astrometric purposes. The relative positions of the involved satellites may be obtained with an accuracy better than for the other kinds of observations (from 200 km for the best photographic observations to 700 km for the events by Jupiter).

Such an accuracy is necessary for several reasons. First, the orbital motions of the Galilean satellites have to be very well known in order to prepare the missions of the space probes exploring the jovian system. Second, all the theoretical problems related to the motion of the Galilean satellites are not solved. This motion, which is affected by numerous perturbations, is one of the most complex in celestial mechanics. The theoretical data presented in this paper are calculated using ephemerides G-5 (Arlot 1982) based on the work of Lieske (1977, 1980). These ephemerides need improvements. For example, Io is suspected of having a secular acceleration due to energy dissipation (Goldstein & Jacobs 1986, Lieske 1987). Such an effect is very difficult to observe. Only several series of mutual events observations will help to put into evidence such small effects.

Coordinated campaigns of observations are very useful to get large amount of data. All the events occur in a small interval of time; so, numerous observations from several sites are necessary. To get as much events as possible, it is necessary to observe from different longitudes (to get different events) and from several sites (to avoid meteorological problems). In 1979, the conditions were not favorable because of the conjunction of Jupiter with the Sun, so, very few observations were obtained (Arlot *et al.* 1982).

### 3. The PHEMU85 campaign.

Table 1 gives the list of the main sites from where the mutual events were observed with their longitudes, latitudes and altitudes.

The receptors used for the observations are of several kinds:

- photometric receptors,
- two-dimensional receptors,
- photographic technique,
- visual observations.

They were adapted on telescopes (reflectors as well as refractors) the aperture of which has not to be very large, since the magnitude of the Galilean satellites is about 5. A filter was used in most of the cases (it will be specified in the data).

### 3.1. THE PHOTOMETRIC RECEPTORS USED.

These receptors have the best photometric accuracy since they are designed for absolute photometry. In the case of mutual events, only differential photometry is necessary. Anyway, since the elevation of Jupiter above the horizon may be very small, absolute photometry is not possible: the air mass is often too large. The photometers that we used are:

– At Paris Observatory (France), with a 38 cm-refractor, was used an uncooled RCA 4840 photomultiplier (multialkali photocathode) the sensibility of which is from 350 to 750 nm. This material is described by Briot (1987) and will be denoted “PS” in the data tables.

– At CERGA (Observatory at Calern near Grasse, France) with a 150 cm-reflector, was used the photometer TELOC at 450 nm, described by Froeschle *et al.* (1988) and denoted “PO” in the data tables.

– At Bordeaux Observatory (France), with a 62 cm-reflector, was used a Peltier cooled Quantacon C31034 described by Dourneau (1987) and denoted “PBO” in the data tables.

– At OHP (France), with a 80 cm-reflector was used the cooled photomultiplier Lallemand “Antoinette” described by Arlot *et al.* (1989b) and denoted “PA” in the data tables.

– At Mont Chiran Observatory (France), with a 1 m-reflector, was used the photometer PAM2 described by Arlot *et al.* (1989b) and denoted “PAM” in the data tables.

– At Granada Observatory (Spain), with a 60 cm-reflector, was used a photoelectric photometer denoted “PG” in the data tables.

– At Teramo Observatory (Italy), with either a 40 cm-refractor or a 50 cm-reflector, were used an EMI 6256A or a 6256SA described by Burchi & Di Paolantonio (1987) and denoted “PT1” and “PT2” in the data tables.

– At Catania Observatory (Italy), with a 91 cm-reflector ( $f/16$ ), were used a EMI 6256A and a EMI 9789Q described by D’Ambrosio & Blanco (1987) and denoted “PC1” and “PC2” in the data tables.

– At GEA (Grup d’Estudis Astronòmics) several telescopes were used whose apertures are from 20 to 41 cm. Two types of photometers were used: either a photodiode photometer OPTEC-SSP3 denoted “PP” in the data tables or a photomultiplier HPO (1P21) denoted “PM” in the data tables. The telescopes were used either in the Pyrenean mountains or in the vicinity of Barcelona (Spain). The description of the material is given by Gomez-Forrellad (1987).

– At the European Southern Observatory (La Silla, Chile), with either a 50 cm-or a 1 m-reflector, two photometers were used: either a EMI 6256(S-13) or a Quantacon RCA-31036 (Ga-As) denoted “PE1” and “PE2” in the data tables. The description is given by Gouffes *et al.* (1987).

– At Brasopolis Observatory (Brazil), with a 60 cm-reflector, two photometers were used: either a cooled RCA

C31034A or an uncooled EMI 9789Q denoted "PB" in the data tables. The description is given by Barroso *et al.* (1987).

– At Meudon Observatory (near Paris, France), with a 60 cm-reflector, a photoelectric photometer was used, denoted "PR" in the data tables.

– At Jungfrau Observatory (Switzerland), with a 76 cm-telescope, was used a cooled photomultiplier photometer denoted "PJ" in the data tables.

– Some amateur astronomers used also photometers. At Zoetermeer (The Netherlands), a DOAA model SSP photodiode photometer was used (denoted "PP" in the data tables), at Covo, near Bergamo (Italy) a photoelectric photometer was used (denoted "PH" in the data tables).

The data tables give also the nature of the filter used as well as the observational conditions for each event.

### 3.2. THE TWO-DIMENSIONAL RECEPTORS USED.

Some telescopes were not equipped with a photometer but were available for mutual events observations. So, we used two-dimensional receptors which allowed us to record simultaneously the satellites, the sky background and, mainly during the eclipses, a reference object. Our receptors were either a Silicium Intensified Target Vidicon (Nocticon), or a RCA Vidicon (Ultricon). The time constant of these receptors is 0.02 second. The frames were digitized and the flux calculated for several windows allowing to get the reduced flux of the occulted or eclipsed satellites. The Nocticon devices of Pic du Midi and Meudon Observatories, mounted on 1 m-reflectors, are denoted "N" in the data tables. The RCA Ultricon device, sometimes mounted on the 1 m-reflector of Pic-du-Midi Observatory, is denoted "R" in the data tables. A video camera denoted "C" was also mounted by CALA amateur astronomers group on the 60 cm-reflector. The digitizing technique is described by Arlot *et al.* (1989a).

### 3.3. THE PHOTOGRAPHIC TECHNIQUE.

In order to increase the possible observations of mutual events, the photographic techniques may be used. A photographic film is exposed several times during the event and analyzed with a micro densitometer (Colas 1986). They are denoted "PHI" and "PHT" in the data tables.

### 3.4. THE VISUAL OBSERVATIONS.

We give also visual light curves (denoted "V" in the data tables) interesting for comparison with the other type of observation. They were obtained in most case using the Argelander method (cf. Dumont & Figer 1973). The magnitude scale is arbitrary and only the date of the minimum of the light curve is available from these data. Most of the time, the time accuracy is better than one second of time. Observers come from the amateur groups: AFOEV (Associa-

tion Française des Observateurs d'Etoiles Variables), GEA (Grup d'Estudis Astronòmics), GEOS (Groupe Européen d'Observation Stellaire).

### 4. The reduction of the light curves.

Only relative photometry was made since the air mass was very large most of the time. The sky background was carefully recorded several times, especially during twilight in order to be eliminated. When possible, the flux of a reference object was recorded (a star or, most of the time, another satellite that is acceptable because of the short duration of the events). This made possible the reduction of observations even when thin clouds or haze were present.

The determination of the data of the minimum of light and of the value of the magnitude drop was obtained from a fit of the light curve with a simple polynomial. The errors on these determinations are also given.

### 5. The catalogue. Discussion of the data.

#### 5.1. THE DATA.

At the end of this paper, the data are given. For each observed event, we present the light curves recorded and we give the determined date of the minimum of light and the magnitude drop. We give also the calculated corresponding data using three ephemerides and two algorithms. Both ephemerides are issued from Lieske's work (1977): G-5 ephemerides are fitted on photographic observations made from 1891 to 1978 (Arlot 1982), E-3 ephemerides are fitted on observations of several kinds mostly eclipses by Jupiter made from 1652 to 1983 (Lieske 1987) and E-2 ephemerides are fitted on recent photographic data and old eclipses (Lieske 1980). Two algorithms were used (denoted (1) and (2) in the catalogue): both take into account the penumbral effect during the mutual eclipses but the first one supposes that both involved satellites are uniform disks and the second one takes into account the phase defect and uses the Hapke's law (Hapke 1986) of diffusion of light to describe the apparent disks of the satellites (Thuillot & Morando 1990).

For each event and each site of observation, we give also:

- the  $(C - O)$  of the observation;
- the type of telescope used in column "Inst." (denoted "T" for a reflector and "L" for a refractor);
- the aperture of the telescope in centimeters;
- the type of receptor in column "Recept." (cf. Sect. 4);
- the elevation of Jupiter and the Sun upon horizon in the next two columns;
- the apparent distance from the involved satellites to the center of Jupiter in Jovian radii;
- the observational conditions in column "Obs. cond.": [1] means very good conditions; [2] means acceptable and [3] very difficult conditions;

- the eventual filter used in column “Filter”;
- the time-sampling of the light curve in seconds of time.

These light curves are available on magnetic tape or through electronic network for whom is interested. Please contact us for that.

## 5.2. DISCUSSION.

We do not intend in this paper to make a complete analysis of the data. These data may be analyzed as well for astrometric purpose as for planetologic interpretation. However, it is interesting to compare the different predictions and also the difference between the mid-event defined as the closest approach of the two satellites (case (1)) and as the minimum of light (case (2)).

Because of the very different time constants used for each observation, the quality of each light curve may be appreciated either with the value of the errors on the determined parameters (time of the minimum of light and magnitude drop) or with the aspect of the lightcurve itself. One must notice some bad determinations of the magnitude drops: this comes from the difficult conditions in which the corresponding observations have been made (small elevation above the horizon, twilight, vicinity of Jupiter or bad meteorological conditions). It also may come from the fact that two satellites were present in the diaphragm. So, the two sets of data, time of the minimum of light and value of the magnitude drop, should not be mixed in a single positional ( $O - C$ ). In a first step, the observed time of the minimum of light is more reliable for theoretical studies.

Let us emphasize the importance of a good model in order to fit the lightcurves, as well for a better determination of the time of the minimum of light as for a more realistic magnitude drop. More, such a model may allow the determination of the observed beginning and end for each event. The prediction (2), based on such a model, shows effectively better calculated parameters compared with the observed ones.

## 6. Conclusion.

The data reported in this paper show the interest of a cam-

paign of observations during the mutual events occurrence. Several types of material may be useful to get as much results as possible.

We have to notice that, unfortunately, several observations produced useless lightcurves. To avoid such accident in the next campaigns, the observers must remember that:

- the datation in UTC is essential. We have to be sure of the scale of time within at least half-a-second.
- in order to use observations made in difficult conditions (thin clouds, ...) the recording of a reference object and of the sky background simultaneously with the eclipsed or occulted satellites is absolutely necessary. Many light curves are of good quality only because such recordings were made, and some have been rejected because of their absence.

After the PHEMU85 campaign, we look forward to the new results of 1991. Another set of observations, added to the present one, will be of high interest for dynamical studies.

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TABLE 1. Main sites of observation.

| Main observatories          | Longitude<br>h m s | Latitude<br>(°) (') (") | elevation<br>meters |
|-----------------------------|--------------------|-------------------------|---------------------|
| Barcelona (GEA), Spain      | -0 8 39.7          | +41 23 54               | 19                  |
| Bordeaux, France            | +0 2 6.6           | +44 50 7                | 73                  |
| Brasopolis, Brasil          | +3 2 16.0          | -22 31 6                | 2000                |
| Cases-Noves (GEA), Spain    | -0 6 21.4          | +41 27 49               | 505                 |
| Catania, Italy              | -0 59 55.0         | +37 41 30               | 1725                |
| Calern (CERGA-OCA), France  | -0 27 42.4         | +43 44 56               | 269                 |
| Covo, Italy                 | -0 39 05.0         | +45 29 50.3             | 400                 |
| Granada, Spain              | +0 13 28.0         | +37 3 0                 | 3000                |
| Jungfrau, Swizerland        | -0 31 56.4         | +46 32 53               | 3576                |
| La Silla (ESO), Chile       | +4 42 55.1         | -29 15 26               | 2200                |
| Massa, Italy                | -0 40 32.5         | +44 01 04               | 150                 |
| Meudon, France              | -0 8 55.5          | +48 48 18               | 162                 |
| Mollet (GEA), Spain         | -0 8 50.0          | +41 32 22               | 70                  |
| Mont-Chiran, France         | -0 25 16.0         | +43 52 6                | 1905                |
| OHP, France                 | -0 22 52.0         | +43 55 46               | 651                 |
| Paris, France               | -0 9 20.9          | +48 50 11               | 67                  |
| Pic-du-Midi, France         | -0 0 34.2          | +42 56 12               | 2861                |
| Sampor (GEA), Spain         | -0 7 17.3          | +42 22 12               | 1070                |
| Teramo, Italy               | -0 54 56.0         | +42 39 30               | 398                 |
| Zoetermeer, The Netherlands | -0 17 55.1         | +52 04 11.6             | 5                   |

TABLE 2. Receptors used for the observations.

| Code as given in the tables | Description                                     |
|-----------------------------|-------------------------------------------------|
| N                           | SIT Vidicon (camera Nocticon)                   |
| PA                          | photomultiplier "Antoinette" Lallemand at OHP   |
| PAM                         | photometer PAM2 at Mont Chiran                  |
| PB                          | RCA C31034 A or EMI 9789 Q at Brasopolis        |
| PBO                         | Quantacon at Bordeaux                           |
| PC1                         | EMI 9789Q A at Catania                          |
| PC2                         | EMI 6256 S at Catania                           |
| PE1                         | EMI 6256 (Si3) at ESO                           |
| PE2                         | Quantacon RCA 31036 (Ga-As) at ESO              |
| PG                          | photometer at Granada                           |
| PH                          | photomultiplier 1P21 uncooled                   |
| PHI                         | photographic film Ilford                        |
| PHT                         | photographic film TRI-X                         |
| PJ                          | cooled photomultiplier at Jungfrau              |
| PM                          | photomultiplier 1P21 uncooled of GEA            |
| PO                          | photometer TELOC at CERGA                       |
| PP                          | photodiode photometer                           |
| PR                          | photometer at Meudon 60cm-telescope             |
| PS                          | RCA C 31043 A (S20R cathode) at Paris           |
| PT1                         | EMI 6256 A (direct current) at Teramo           |
| PT2                         | EMI 6256 SA (photon counting) at Teramo         |
| R                           | Vidicon RCA (camera Ultricon)                   |
| C                           | CALA video camera at Pic-du-Midi 60cm-telescope |
| V                           | visual observation                              |

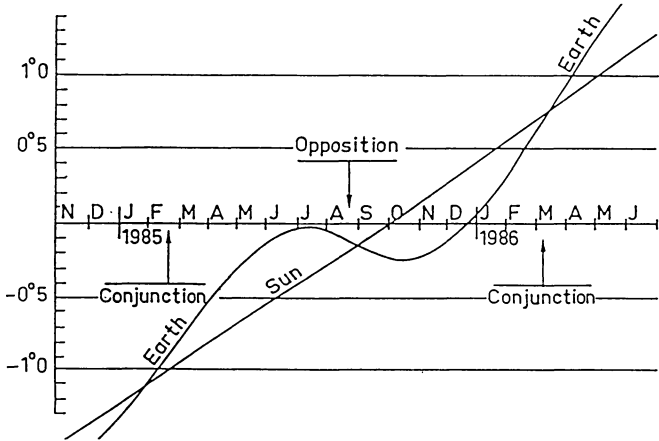


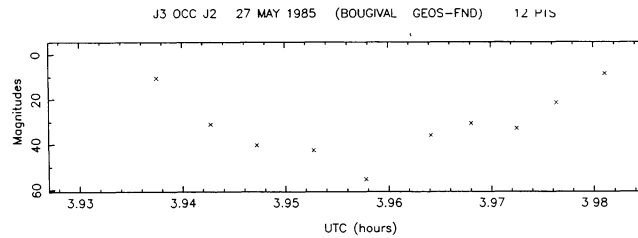
FIGURE 1. Jovicentric declinations of the Earth and the Sun during the 1985 occurrence.

| PREDICTION | begins           | maxi.            | ends           | Magn.<br>drop |
|------------|------------------|------------------|----------------|---------------|
| E-2 (1)    | h m s<br>3 55 40 | h m s<br>3 57 54 | h m s<br>4 0 8 | 0.048         |
| E-3 (1)    | 3 55 45          | 3 57 58          | 4 0 11         | 0.048         |
| (1)        | 3 55 43          | 3 57 52          | 4 0 2          | 0.043         |
| G-5<br>(2) | 3 55 41          | 3 57 46          | 4 0 1          | 0.073         |

MAY 27, 1985

J3 Occults J2 (partial)

| OBSERVATIONS:          |       |    |      |   | (C-O)        | Inst. | Apert. | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|------------------------|-------|----|------|---|--------------|-------|--------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|                        |       |    |      |   | G-5<br>(sec) |       |        |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| BOUGIVAL<br>GEOS - FND | h m s |    |      |   |              |       |        |         |             |            | 7.2                          |               |        |                         |
|                        | 3     | 57 | 51   | - | +1           | T     | 11     | V       | +24         | -1         |                              | [3]           | -      | 19.                     |
|                        |       |    | ± 30 |   |              |       |        |         |             |            |                              |               |        |                         |

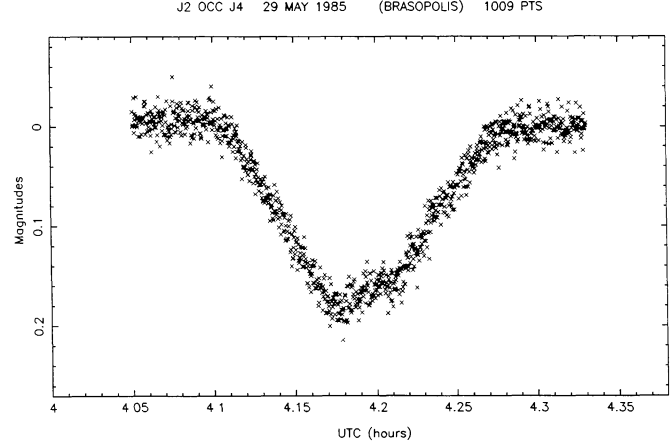
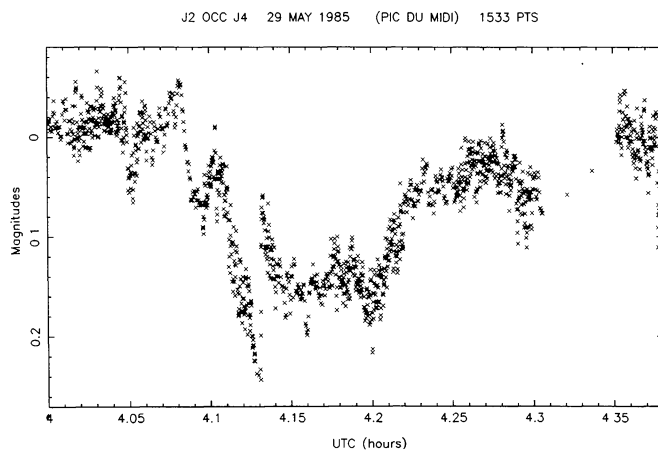


| PREDICTION | begins          | maxi.            | ends             | Magn.<br>drop |
|------------|-----------------|------------------|------------------|---------------|
| E-2 (1)    | h m s<br>4 5 49 | h m s<br>4 11 19 | h m s<br>4 16 52 | 0.566         |
| E-3 (1)    | 4 5 57          | 4 11 27          | 4 17 0           | 0.566         |
| (1)        | 4 6 4           | 4 11 33          | 4 17 5           | 0.566         |
| G-5<br>(2) | 4 6 1           | 4 10 42          | 4 17 1           | 0.158         |

MAY 29, 1985

J2 Occults J4 (annular)

| OBSERVATIONS: |   |    |      |        | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|---------------|---|----|------|--------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|               |   |    |      |        |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| PIC DU MIDI   | h | m  | s    |        | +91                   | T     | 105            | R       | +30         | - 4        | 8.8                          | [3]           | -      | 1.0                     |
|               |   |    | ± 53 | ±0.044 |                       |       |                |         |             |            |                              |               |        |                         |
| BRASOPOLIS    | 4 | 10 | 49   | 0.180  | +44                   | T     | 60             | PB      | +36         | -75        |                              | [1]           | V      | 1.0                     |
|               |   |    | ± 15 | ±0.012 |                       |       |                |         |             |            |                              |               |        |                         |



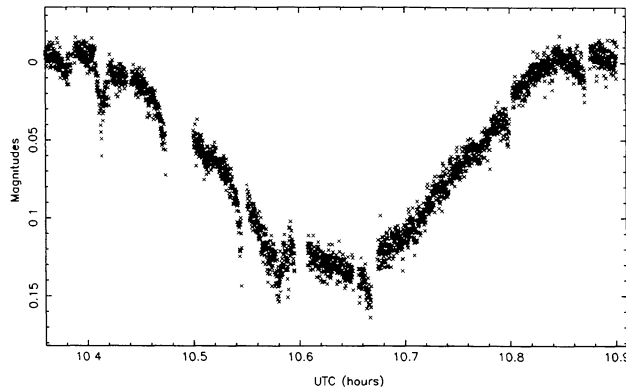
| PREDICTION | begins   | maxi.    | ends     | Magn.<br>drop |
|------------|----------|----------|----------|---------------|
|            | h m s    | h m s    | h m s    |               |
| E-2 (1)    | 10 24 10 | 10 37 34 | 10 51 13 | 0.292         |
| E-3 (1)    | 10 24 20 | 10 37 45 | 10 51 23 | 0.292         |
| (1)        | 10 23 36 | 10 37 5  | 10 50 48 | 0.304         |
| G-5 (2)    | 10 23 27 | 10 37 49 | 10 50 45 | 0.121         |

MAY 30, 1985

J2 Occults J4 (partial)

| OBSERVATIONS:   |                           |  |  |  | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |     |
|-----------------|---------------------------|--|--|--|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|-----|
|                 |                           |  |  |  |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |     |
| LA SILLA<br>ESO | h m s<br>10 37 59<br>± 42 |  |  |  | 0.135<br>±0.009       | -54   | T              | 50      | PE1         | +72        | -14                          | 8.8           | [1]    | V                       | 0.8 |

J2 OCC J4 30 MAY 1985 (ESO) 2577 PTS



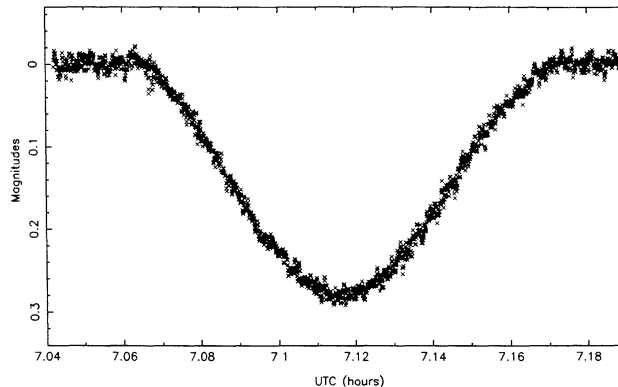
| PREDICTION | begins | maxi.  | ends    | Magn.<br>drop |
|------------|--------|--------|---------|---------------|
|            | h m s  | h m s  | h m s   |               |
| E-2 (1)    | 7 3 41 | 7 7 3  | 7 10 25 | 0.191         |
| E-3 (1)    | 7 3 45 | 7 7 6  | 7 10 28 | 0.189         |
| (1)        | 7 3 41 | 7 7 1  | 7 10 21 | 0.183         |
| G-5 (2)    | 7 3 39 | 7 6 53 | 7 10 20 | 0.355         |

JUNE 3, 1985

J3 Occults J2 (partial)

| OBSERVATIONS:   |             |   |     |        | (C-O)<br>G-5<br>(sec) | Inst.      | Apert.<br>(cm) | Recept. | Elevation |     | Dist.<br>to<br>Jup.<br>in R <sub>j</sub> | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|-----------------|-------------|---|-----|--------|-----------------------|------------|----------------|---------|-----------|-----|------------------------------------------|---------------|--------|-------------------------|
|                 |             |   |     |        | Jup.<br>(°)           | Sun<br>(°) |                |         |           |     |                                          |               |        |                         |
| LA SILLA<br>ESO | h    m    s |   |     |        |                       |            |                |         |           |     | 7.5                                      |               |        |                         |
|                 | 7           | 6 | 59  | 0.279  | +2                    | T          | 50             | PE1     | +57       | -57 |                                          | [1]           | V      | 0.3                     |
|                 |             |   | ± 6 | ±0.011 |                       |            |                |         |           |     |                                          |               |        |                         |

J3 OCC J2 03 JUN 1985 (ESO) 1740 PTS



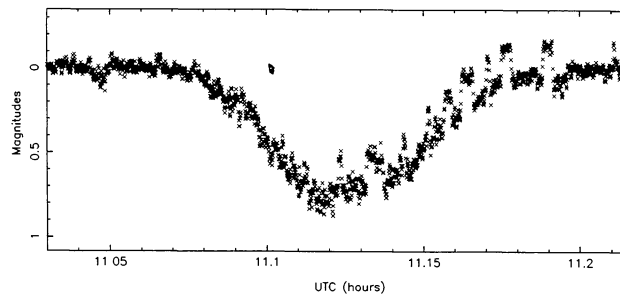
| PREDICTION | begins           | maxi.            | ends             | Magn.<br>drop |
|------------|------------------|------------------|------------------|---------------|
| E-2 (1)    | h m s<br>11 4 18 | h m s<br>11 7 40 | h m s<br>11 11 4 | 0.112         |
| E-3 (1)    | 11 4 18          | 11 7 40          | 11 11 3          | 0.112         |
| (1)        | 11 4 14          | 11 7 37          | 11 11 1          | 0.114         |
| G-5<br>(2) | 11 4 11          | 11 7 28          | 11 11 0          | 0.227         |

JUNE 3, 1985

J3 Occults J1 (partial)

| OBSERVATIONS:   |    |   |            | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|-----------------|----|---|------------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|                 | h  | m | s          |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| LA SILLA<br>ESO | 11 | 7 | 22<br>± 18 | 0.715<br>±0.106       | +15   | T              | 50      | PE1         | +61        | -6                           | 5.5           | [1]    | V 0.4                   |

J3 OCC J1 03 JUN 1985 (ESO) 1790 PTS



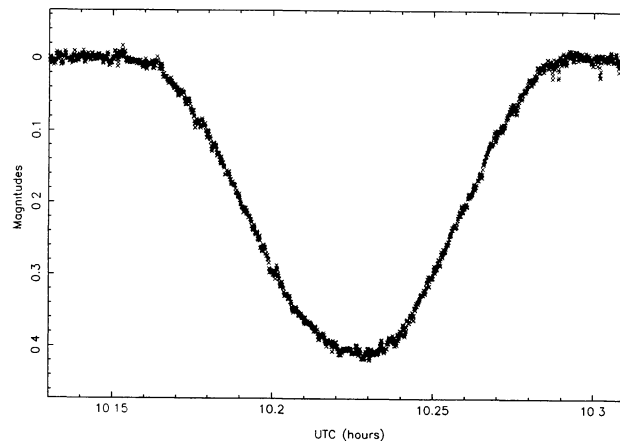
| PREDICTION | begins           | maxi.             | ends              | Magn.<br>drop |
|------------|------------------|-------------------|-------------------|---------------|
| E-2 (1)    | h m s<br>10 9 37 | h m s<br>10 13 33 | h m s<br>10 17 29 | 0.324         |
| E-3 (1)    | 10 9 41          | 10 13 36          | 10 17 33          | 0.323         |
| (1)        | 10 9 36          | 10 13 31          | 10 17 26          | 0.320         |
| G-5<br>(2) | 10 9 33          | 10 13 28          | 10 17 24          | 0.669         |

JUNE 10, 1985

J3 Occults J2 (partial)

| OBSERVATIONS:   |    |    |           | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|-----------------|----|----|-----------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|                 | h  | m  | s         |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| LA SILLA<br>ESO | 10 | 13 | 38<br>± 4 | 0.409<br>±0.007       | -7    | T              | 50      | PE1         | +67        | -18                          | 7.7           | [1]    | V 0.4                   |

J3 OCC J2 10 JUN 1985 (ESO) 1657 PTS

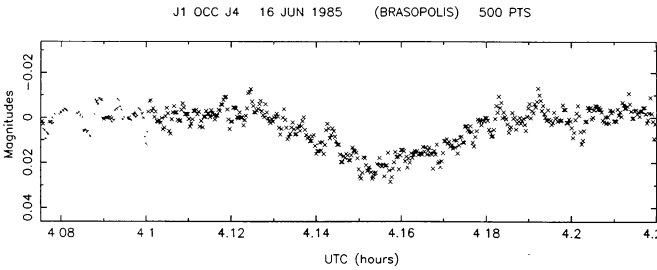


| PREDICTION | begins | maxi.  | ends    | Magn. drop |
|------------|--------|--------|---------|------------|
|            | h m s  | h m s  | h m s   |            |
| E-2 (1)    | 4 7 33 | 4 9 18 | 4 11 1  | 0.034      |
| E-3 (1)    | 4 7 39 | 4 9 21 | 4 11 1  | 0.031      |
| (1)        | 4 7 44 | 4 9 30 | 4 11 15 | 0.034      |
| G-5 (2)    | 4 7 41 | 4 9 24 | 4 11 15 | 0.011      |

JUNE 16, 1985

J1 Occults J4 (partial)

| OBSERVATIONS: |   |   |      | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |     |
|---------------|---|---|------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|-----|
|               |   |   |      |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |     |
| BRASOPOLIS    | h | m | s    |                       |       |                |         |             |            |                              |               |        |                         |     |
|               | 4 | 9 | 25   | 0.020                 | +5    | T              | 60      | PB          | +53        | -75                          | 4.0           | [1]    | V                       | 1.0 |
|               |   |   | ± 14 | ±0.007                |       |                |         |             |            |                              |               |        |                         |     |

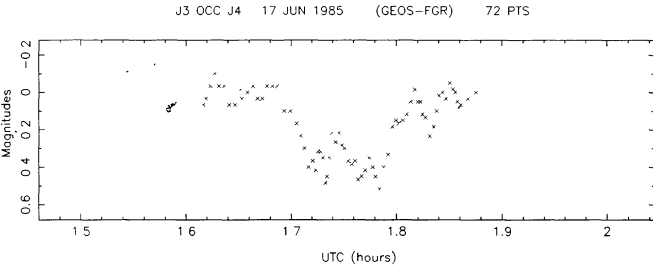
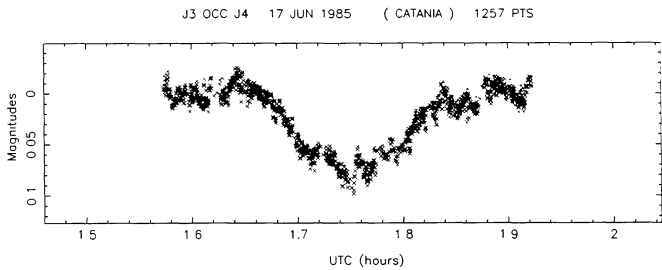
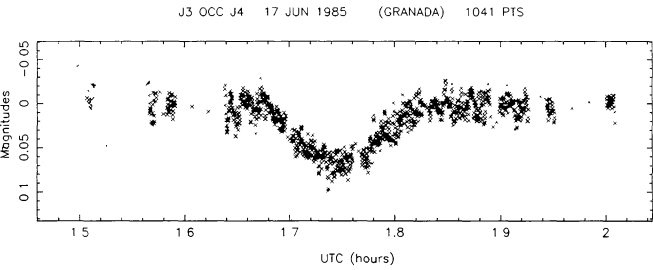
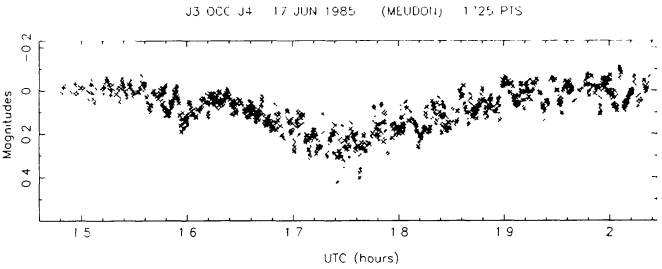
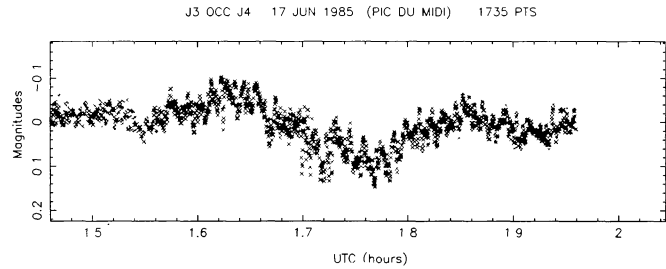


| PREDICTION | begins           | maxi.            | ends             | Magn.<br>drop |
|------------|------------------|------------------|------------------|---------------|
| E-2 (1)    | h m s<br>1 40 13 | h m s<br>1 44 56 | h m s<br>1 49 39 | 0.125         |
| E-3 (1)    | 1 40 16          | 1 44 59          | 1 49 42          | 0.124         |
| (1)        | 1 40 18          | 1 45 4           | 1 49 49          | 0.129         |
| G-5<br>(2) | 1 40 14          | 1 44 52          | 1 49 50          | 0.077         |

JUNE 17, 1985

J3 Occults J4 (partial)

| OBSERVATIONS: |   |    |      | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |      |
|---------------|---|----|------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|------|
|               | h | m  | s    |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |      |
| PIC DU MIDI   | 1 | 45 | 18   | 0.080                 | -14   | T              | 105     | N           | +25        | -20                          | 12.5          | [1]    | -                       | 1.0  |
|               |   |    | ± 7  | ±0.046                |       |                |         |             |            |                              |               |        |                         |      |
| MEUDON        | 1 | 44 | 45   | 0.246                 | +19   | T              | 105     | N           | +21        | -14                          |               | [1]    | -                       | 1.2  |
|               |   |    | ± 22 | ±0.097                |       |                |         |             |            |                              |               |        |                         |      |
| GRANADA       | 1 | 44 | 50   | 0.066                 | +14   | T              | 60      | PG          | +28        | -26                          |               | [1]    | V                       | 1.7  |
|               |   |    | ± 40 | ±0.018                |       |                |         |             |            |                              |               |        |                         |      |
| CATANIA       | 1 | 45 | 14   | 0.094                 | -10   | T              | 91      | PC1         | +34        | -18                          |               | [2]    | V                       | 1.0  |
|               |   |    | ± 14 | 0.063                 |       |                |         |             |            |                              |               |        |                         |      |
| PARIS         |   |    |      |                       |       |                |         |             |            |                              |               |        |                         |      |
| GEOS - FGR    | 1 | 45 | 15   | -                     | -11   | T              | 26      | V           | +21        | -14                          |               | [2]    | -                       | 13.0 |
|               |   |    | ± 41 |                       |       |                |         |             |            |                              |               |        |                         |      |



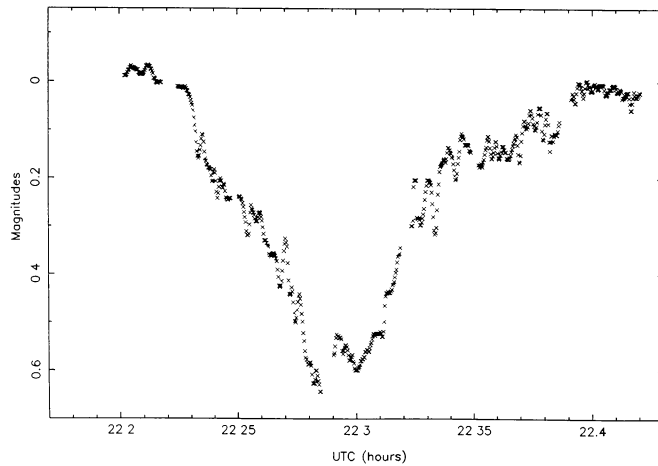
| PREDICTION | begins            | maxi.             | ends              | Magn.<br>drop |
|------------|-------------------|-------------------|-------------------|---------------|
| E-2 (1)    | h m s<br>22 12 47 | h m s<br>22 17 20 | h m s<br>22 21 54 | 0.297         |
| E-3 (1)    | 22 12 49          | 22 17 23          | 22 21 57          | 0.298         |
| (1)        | 22 12 42          | 22 17 16          | 22 21 52          | 0.304         |
| G-5<br>(2) | 22 12 41          | 22 17 14          | 22 21 53          | 0.626         |

JULY 8, 1985

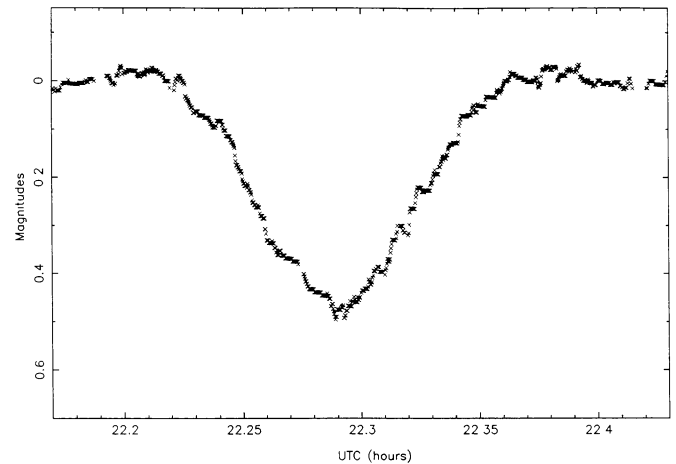
J3 Occults J2 (partial)

| OBSERVATIONS: |    |    |      | (C-0)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |     |
|---------------|----|----|------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|-----|
|               |    |    |      |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |     |
| OHP           | h  | m  | s    |                       |       |                |         |             |            | 8.6                          |               |        |                         |     |
|               | 22 | 17 | 36   | 0.597                 | -20   | T              | 80      | PA          | +13        | -21                          |               | [2]    | V                       | 1.4 |
|               |    |    | ± 8  | ±0.038                |       |                |         |             |            |                              |               |        |                         |     |
| TERAMO        | 22 | 17 | 27   | 0.469                 | -11   | L              | 40      | PT1         | +18        | -24                          |               | [1]    | V                       | 1.2 |
|               |    |    | ± 3  | ±0.009                |       |                |         |             |            |                              |               |        |                         |     |
| CATANIA       | 22 | 18 | 12   | 0.293                 | -56   | T              | 91      | PC1         | +22        | -29                          |               | [2]    | V                       | 1.0 |
|               |    |    | ± 45 | ±0.334                |       |                |         |             |            |                              |               |        |                         |     |

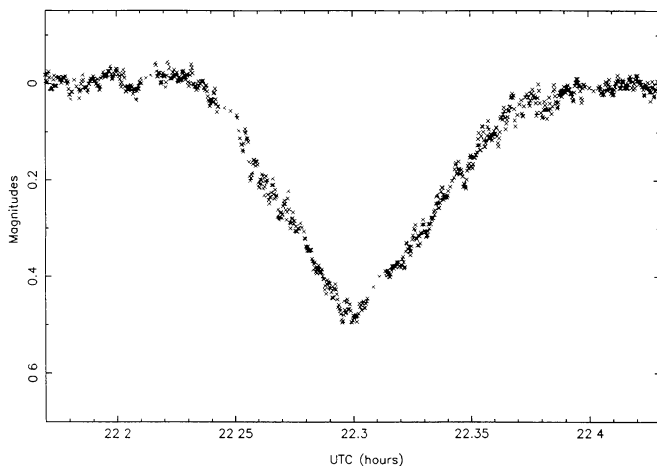
J3 OCC J2 08 JUL 1985 (OHP) 652 PTS



J3 OCC J2 08 JUL 1985 (TERAMO) 1069 PTS



J3 OCC J2 08 JUL 1985 (CATANIA) 869 PTS



| PREDICTION | begins           | maxi.            | ends             | Magn.<br>drop |
|------------|------------------|------------------|------------------|---------------|
| E-2 (1)    | h m s<br>0 33 43 | h m s<br>0 39 47 | h m s<br>0 45 49 | 0.325         |
| E-3 (1)    | 0 33 52          | 0 39 55          | 0 45 58          | 0.325         |
| (1)        | 0 33 55          | 0 39 59          | 0 46 3           | 0.331         |
| G-5<br>(2) | 0 33 52          | 0 39 52          | 0 46 6           | 0.473         |

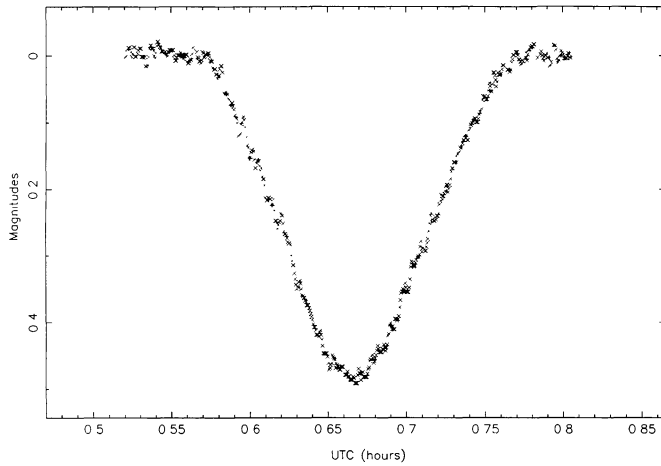
JULY 12, 1985

J4 Occults J3 (partial)

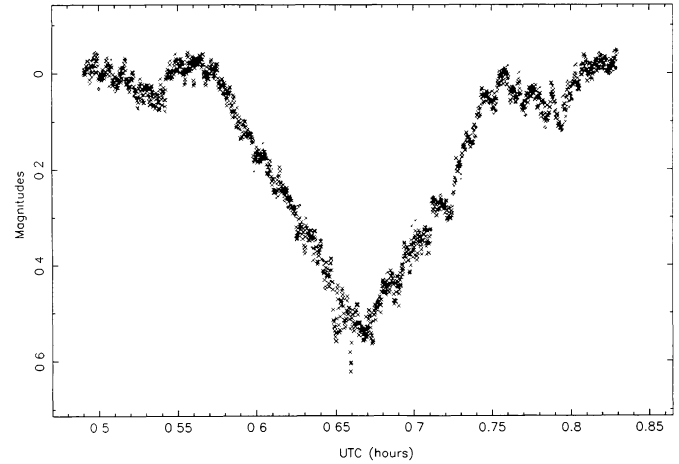
| OBSERVATIONS:              |   |    |            | (C-0)<br>G-5<br>(sec) | Inst. | Apert. | Recept.     | Elevation  |     | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter<br>(sec) |      |
|----------------------------|---|----|------------|-----------------------|-------|--------|-------------|------------|-----|------------------------------|---------------|--------|------------------------|------|
|                            | h | m  | s          |                       | (cm)  |        | Jup.<br>(°) | Sun<br>(°) |     |                              |               |        |                        |      |
| TERAMO                     | 0 | 39 | 59<br>± 3  | 0.481<br>±0.007       | 0     | L      | 40          | PT1        | +31 | -24                          | 12.7          | [1]    | V                      | 1.9  |
| CALERN                     |   |    |            |                       |       |        |             |            |     |                              |               |        |                        |      |
| CERGA - OCA                | 0 | 40 | 1<br>± 12  | 0.522<br>±0.039       | - 2   | T      | 150         | PO         | +28 | -23                          |               | [1]    | (*)                    | 0.7  |
| BORDEAUX                   | 0 | 40 | 7<br>± 15  | 0.174<br>±0.013       | - 8   | T      | 62          | PBO        | +26 | -23                          |               | [2]    | RG665                  | 10.0 |
| SAMPSOR                    | 0 | 40 | 10<br>± 7  | 0.493<br>±0.018       | - 11  | T      | 20          | PP         | +28 | -25                          |               | [1]    | V                      | 16.0 |
| JUNGFRAU                   | 0 | 39 | 43<br>± 3  | 0.562<br>±0.009       | - 11  | T      | 76          | PJ         | +26 | -20                          |               | [2]    | V                      | 98.0 |
| AIX EN PROV.<br>GEOS - RMS | 0 | 39 | 34<br>± 11 | -<br>±0.077           | + 25  | T      | 15          | V          | +28 | -23                          |               | [2]    | -                      | 36.0 |
| OHP                        | 0 | 41 | 15<br>± 10 | 1.341<br>±0.077       | - 76  | T      | 80          | PA         | +28 | -23                          |               | [1]    | V                      | 1.2  |
| CATANIA                    | 0 | 39 | 54<br>± 30 | 0.301<br>±0.011       | + 5   | T      | 91          | PC1        | +35 | -27                          |               | [1]    | V                      | 1.0  |
| TOULOUSE<br>GEOS - NZY     | 0 | 42 | 32<br>± 14 | -<br>±0.077           | -153  | T      | 18          | V          | +27 | -24                          |               | [1]    | -                      | 39.0 |

(\*) 320 to 4140 Å

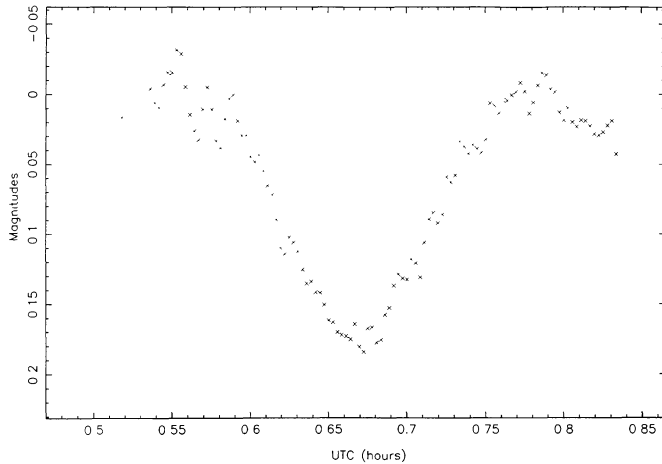
J4 OCC J3 12 JUL 1985 (TERAMO) 543 PTS



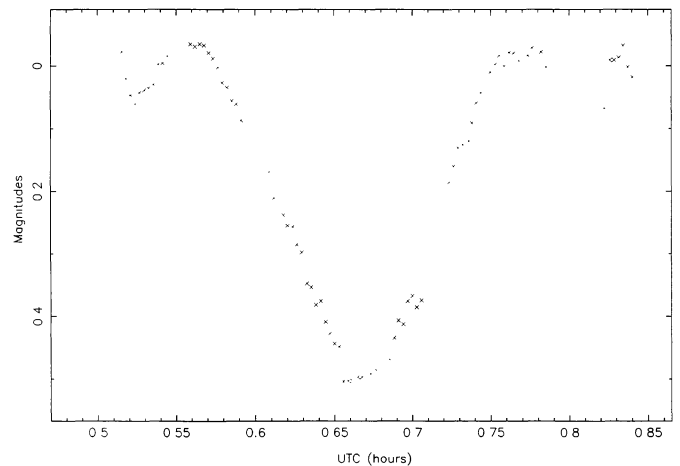
J4 OCC J3 12 JUL 1985 (CERGA) 1627 PTS

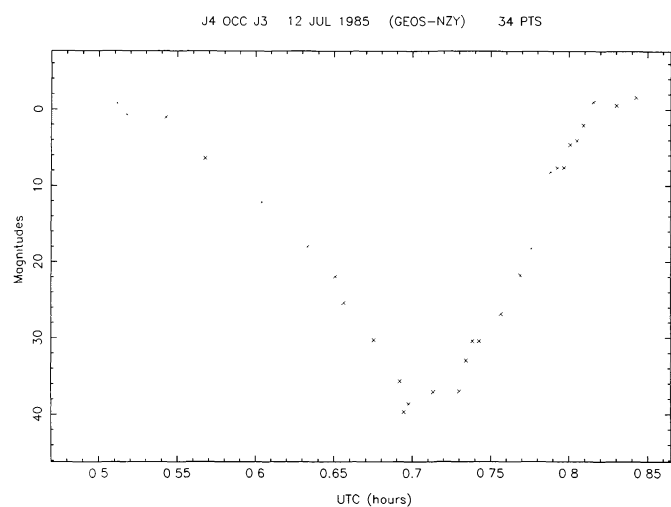
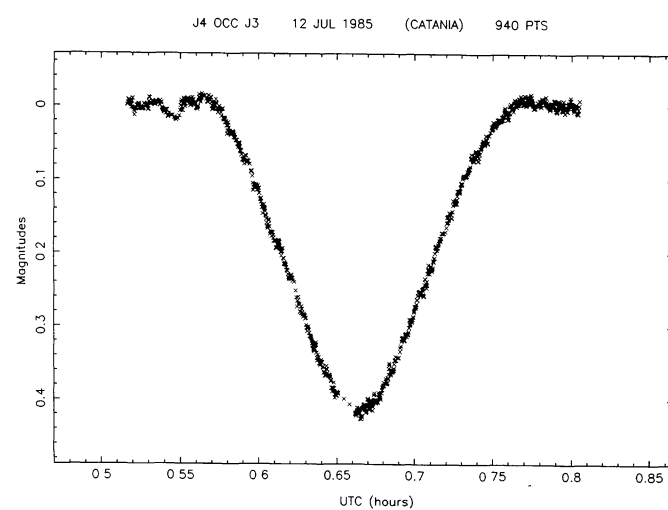
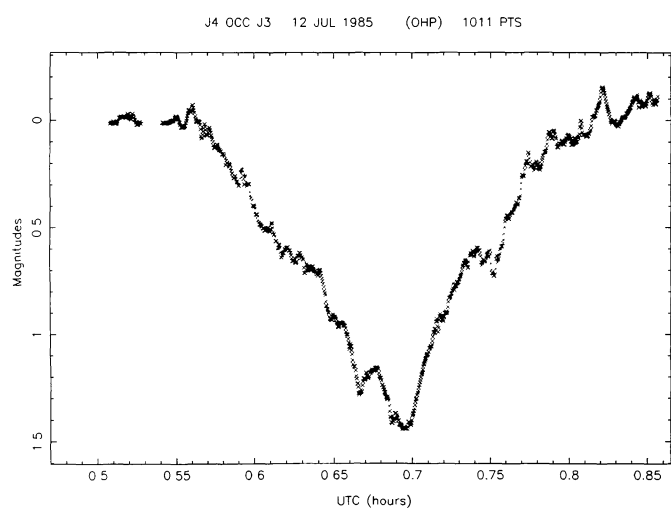
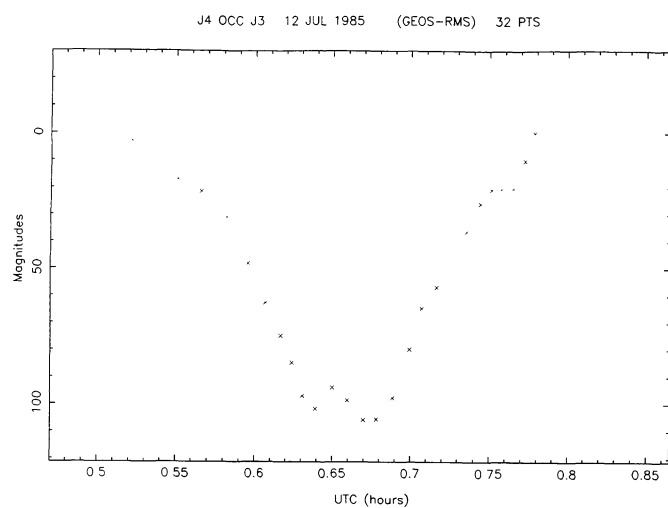
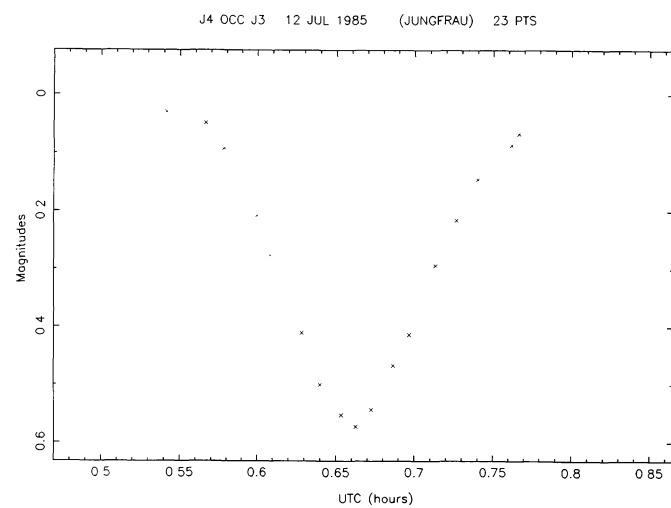


J4 OCC J3 12 JUL 1985 (BORDEAUX) 113 PTS



J4 OCC J3 12 JUL 1985 (GEA-SAMPSOR) 91 PTS



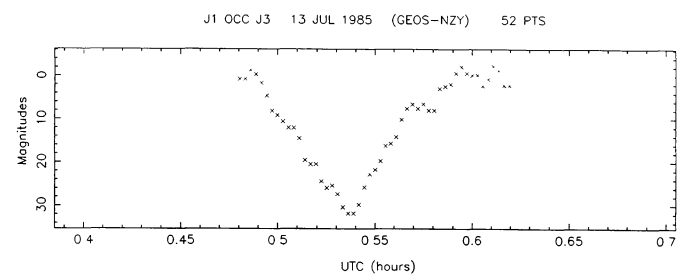
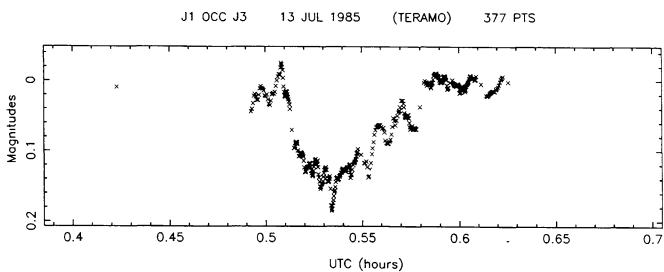
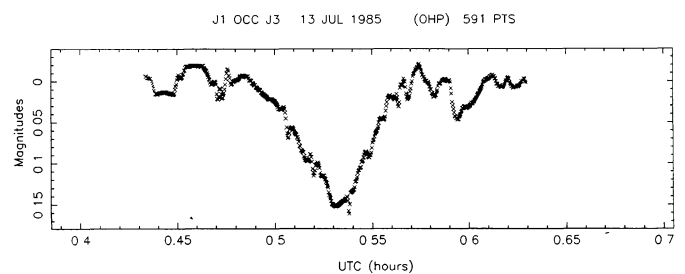
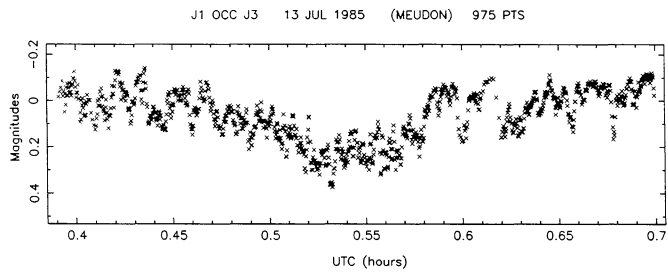
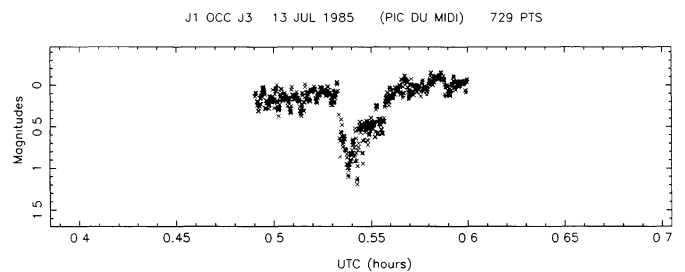
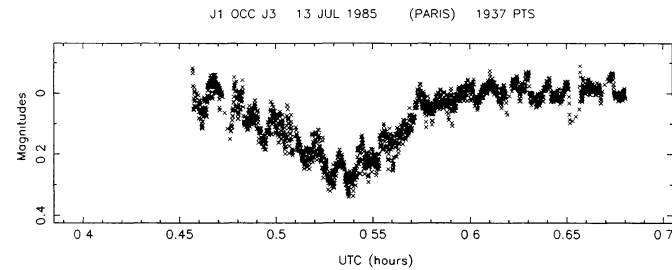


| PREDICTION | begins           | maxi.            | ends             | Magn.<br>drop |
|------------|------------------|------------------|------------------|---------------|
| E-2 (1)    | h m s<br>0 29 59 | h m s<br>0 32 11 | h m s<br>0 34 23 | 0.152         |
| E-3 (1)    | 0 30 5           | 0 32 16          | 0 34 28          | 0.149         |
| (1)        | 0 29 59          | 0 32 13          | 0 34 26          | 0.156         |
| G-5<br>(2) | 0 29 58          | 0 32 10          | 0 34 26          | 0.088         |

JULY 13, 1985

J1 Occults J3 (partial)

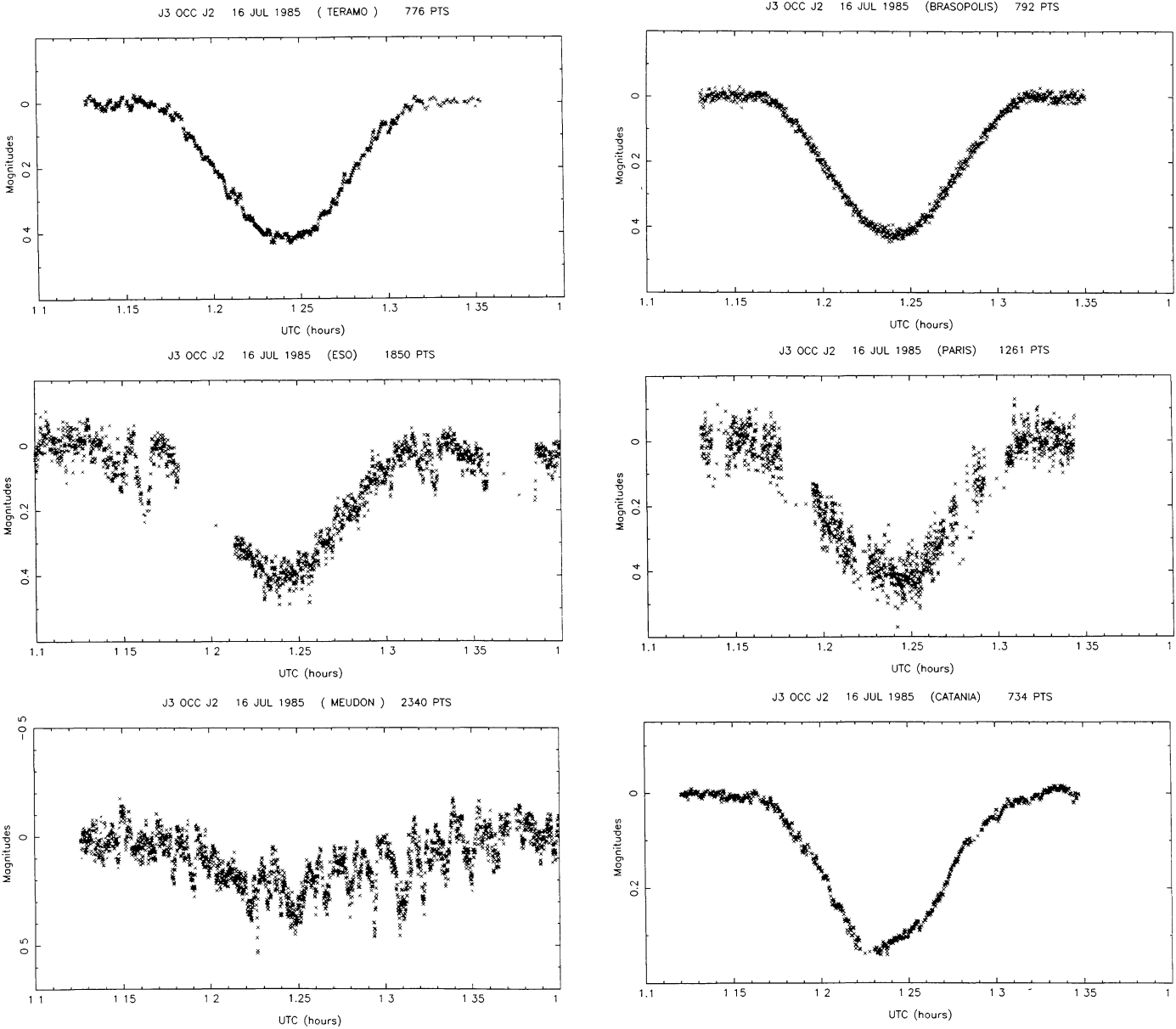
| OBSERVATIONS:          |   |    |    | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |      |
|------------------------|---|----|----|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|------|
|                        | h | m  | s  |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |      |
| PARIS                  | 0 | 32 | 5  | 0.252<br>±0.049       | + 8   | L              | 38      | PS          | +22        | -19                          | 2.2           | [3]    | V                       | 0.4  |
| PIC DU MIDI            | 0 | 32 | 19 | 0.865<br>±0.275       | - 6   | T              | 105     | N           | +27        | -25                          |               | [1]    | -                       | 0.5  |
| MEUDON                 | 0 | 32 | 31 | 0.242<br>±0.076       | -18   | T              | 105     | N           | +22        | -19                          |               | [1]    | -                       | 1.1  |
| OHP                    | 0 | 32 | 1  | 0.152<br>±0.005       | +12   | T              | 80      | PA          | +28        | -23                          |               | [1]    | V                       | 1.2  |
| TERAMO                 | 0 | 31 | 55 | 0.138<br>±0.020       | +18   | L              | 40      | PT1         | +30        | -24                          |               | [2]    | V                       | 1.0  |
| TOULOUSE<br>GEOS - NZY | 0 | 32 | 6  | -                     | + 7   | T              | 18      | V           | +27        | -24                          |               | [1]    | -                       | 39.0 |



| PREDICTION      |  |  |  | begins          | maxi.            | ends            | Magn.<br>drop | JULY 16, 1985           |        |                |         |                                  |     |                              |               |        |                         |     |
|-----------------|--|--|--|-----------------|------------------|-----------------|---------------|-------------------------|--------|----------------|---------|----------------------------------|-----|------------------------------|---------------|--------|-------------------------|-----|
| E-2 (1)         |  |  |  | h m s<br>1 9 48 | h m s<br>1 14 27 | h m s<br>1 19 7 | 0.260         | J3 Occults J2 (partial) |        |                |         |                                  |     |                              |               |        |                         |     |
| E-3 (1)         |  |  |  | 1 9 50          | 1 14 29          | 1 19 10         | 0.261         |                         |        |                |         |                                  |     |                              |               |        |                         |     |
| (1)             |  |  |  | 1 9 42          | 1 14 23          | 1 19 5          | 0.267         |                         |        |                |         |                                  |     |                              |               |        |                         |     |
| G-5<br>(2)      |  |  |  | 1 9 40          | 1 14 21          | 1 19 5          | 0.542         |                         |        |                |         |                                  |     |                              |               |        |                         |     |
| OBSERVATIONS:   |  |  |  |                 |                  |                 |               | (C-O)<br>G-5<br>(sec)   | Inst.  | Apert.<br>(cm) | Recept. | Elevation<br>Jup. Sun<br>(°) (°) |     | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |     |
| TERAMO          |  |  |  |                 |                  |                 |               | h m s<br>1 14 31        | 0.416  | -8             | L       | 40                               | PT1 | +31 -21                      | 8.8           | [1]    | V                       | 1.0 |
|                 |  |  |  |                 |                  |                 |               | ± 5                     | ±0.008 |                |         |                                  |     |                              |               |        |                         |     |
| BRASOPOLIS      |  |  |  |                 |                  |                 |               | 1 14 26                 | 0.423  | -3             | T       | 60                               | PB  | +42 -63                      |               | [1]    | V                       | 1.0 |
|                 |  |  |  |                 |                  |                 |               | ± 6                     | ±0.011 |                |         |                                  |     |                              |               |        |                         |     |
| LA SILLA<br>ESO |  |  |  |                 |                  |                 |               | 1 14 26                 | 0.402  | -3             | T       | 50                               | PE1 | +20 -40                      |               | [3]    | V                       | 0.7 |
|                 |  |  |  |                 |                  |                 |               | ± 15                    | ±0.052 |                |         |                                  |     |                              |               |        |                         |     |
| PARIS           |  |  |  |                 |                  |                 |               | 1 14 23                 | 0.414  | 0              | L       | 38                               | PS  | +24 -18                      |               | [1]    | V                       | 0.6 |
|                 |  |  |  |                 |                  |                 |               | ± 23                    | ±0.080 |                |         |                                  |     |                              |               |        |                         |     |
| MEUDON          |  |  |  |                 |                  |                 |               | 1 14 31                 | 0.210  | +8             | T       | 105                              | N   | +24 -18                      |               | [1]    | -                       | 1.1 |
|                 |  |  |  |                 |                  |                 |               | ± 25                    | ±0.140 |                |         |                                  |     |                              |               |        |                         |     |
| CATANIA         |  |  |  |                 |                  |                 |               | 1 14 11                 | 0.251  | +12            | T       | 91                               | PC1 | +34 -24                      |               | [2]    | V                       | 1.0 |
|                 |  |  |  |                 |                  |                 |               | ± 11                    | ±0.084 |                |         |                                  |     |                              |               |        |                         |     |

JULY 16, 1985

J3 Occults J2 (partial)



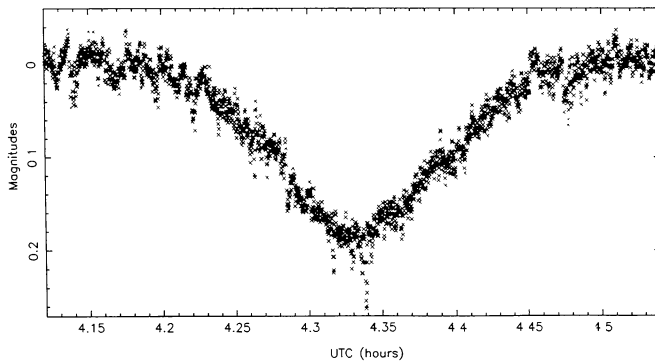
| PREDICTION | begins  | maxi.   | ends    | Magn.<br>drop |
|------------|---------|---------|---------|---------------|
|            | h m s   | h m s   | h m s   |               |
| E-2 (1)    | 4 12 32 | 4 20 14 | 4 28 1  | 0.328         |
| E-3 (1)    | 4 12 24 | 4 20 7  | 4 27 55 | 0.334         |
| (1)        | 4 12 18 | 4 19 59 | 4 27 45 | 0.327         |
| G-5<br>(2) | 4 12 12 | 4 20 6  | 4 27 45 | 0.092         |

JULY 19, 1985

J1 Occults J4 (partial)

| OBSERVATIONS: |   |    |      | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |     |
|---------------|---|----|------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|-----|
|               |   |    |      |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |     |
| LA SILLA      | h | m  | s    |                       |       |                |         |             |            | 1.7                          |               |        |                         |     |
| ESO           | 4 | 19 | 54   | 0.191                 | +5    | T              | 50      | PE1         | +62        | -78                          |               | [i]    | V                       | 0.7 |
|               |   |    | ± 23 | ±0.020                |       |                |         |             |            |                              |               |        |                         |     |

J1 OCC J4 19 JUL 1985 (ESO) 2202 PTS



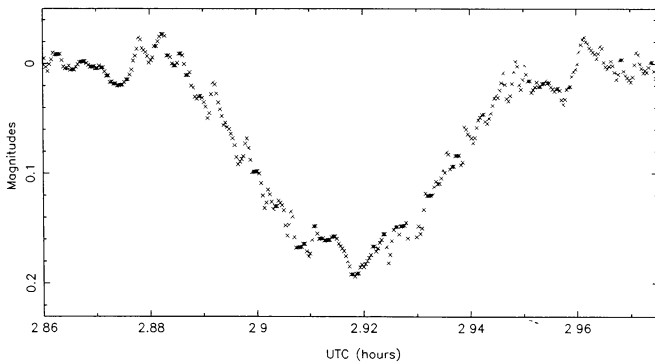
| PREDICTION | begins  | maxi.   | ends    | Magn.<br>drop |
|------------|---------|---------|---------|---------------|
|            | h m s   | h m s   | h m s   |               |
| E-2 (1)    | 2 52 42 | 2 55 0  | 2 57 18 | 0.162         |
| E-3 (1)    | 2 52 48 | 2 55 5  | 2 57 23 | 0.159         |
| (1)        | 2 52 42 | 2 55 1  | 2 57 20 | 0.165         |
| G-5<br>(2) | 2 52 42 | 2 54 59 | 2 57 21 | 0.094         |

JULY 20, 1985

J1 Occults J3 (partial)

| OBSERVATIONS: |   |    |     |  | (C-O<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept.     | Elevation  |     | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |     |
|---------------|---|----|-----|--|----------------------|-------|----------------|-------------|------------|-----|------------------------------|---------------|--------|-------------------------|-----|
|               |   |    |     |  |                      |       |                | Jup.<br>(°) | Sun<br>(°) |     |                              |               |        |                         |     |
| OHP           | h | m  | s   |  | 0.175                | -2    | T              | 80          | PA         | +23 | -12                          | 2.7           | [2]    | V                       | 1.2 |
|               | 2 | 55 | 3   |  | ±0.010               |       |                |             |            |     |                              |               |        |                         |     |
|               |   |    | ± 5 |  |                      |       |                |             |            |     |                              |               |        |                         |     |

J1 OCC J3 20 JUL 1985 (OHP) 365 PTS



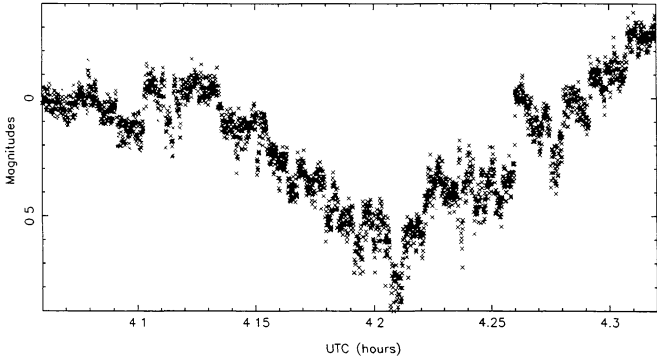
| PREDICTION | begins         | maxi.            | ends             | Magn.<br>drop |
|------------|----------------|------------------|------------------|---------------|
| E-2 (1)    | h m s<br>4 7 0 | h m s<br>4 11 48 | h m s<br>4 16 37 | 0.234         |
| E-3 (1)    | 4 7 2          | 4 11 50          | 4 16 40          | 0.234         |
| (1)        | 4 6 54         | 4 11 43          | 4 16 35          | 0.241         |
| G-5 (2)    | 4 6 52         | 4 11 41          | 4 16 35          | 0.480         |

JULY 23, 1985

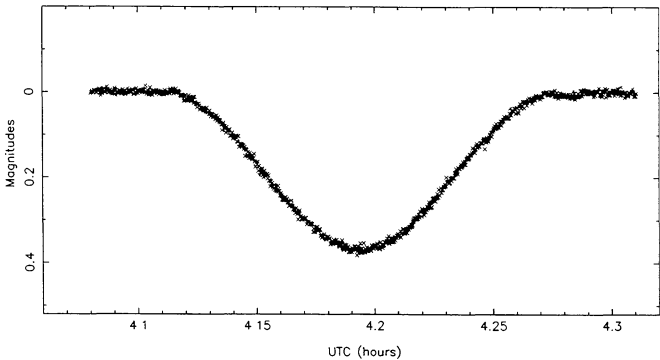
J3 Occults J2 (partial)

| OBSERVATIONS: |   |    |      | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |     |
|---------------|---|----|------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|-----|
|               |   |    |      |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |     |
| PIC DU MIDI   | h | m  | s    | 0.540                 | -42   | T              | 105     | N           | +16        | - 6                          | 8.9           | [1]    | B                       | 0.8 |
|               | 4 | 12 | 25   | ±0.040                |       |                |         |             |            |                              |               |        |                         |     |
|               |   |    | ± 11 |                       |       |                |         |             |            |                              |               |        |                         |     |
| BRASOPOLIS    | 4 | 11 | 38   | 0.369                 | + 5   | T              | 60      | PB          | +85        | -76                          |               | [1]    | V                       | 1.0 |
|               |   |    | ± 4  | ±0.005                |       |                |         |             |            |                              |               |        |                         |     |
| GRANADA       | 4 | 11 | 44   | 0.417                 | - 1   | T              | 60      | PG          | +22        | -12                          |               | [1]    | V                       | 1.2 |
|               |   |    | ± 17 | ±0.043                |       |                |         |             |            |                              |               |        |                         |     |

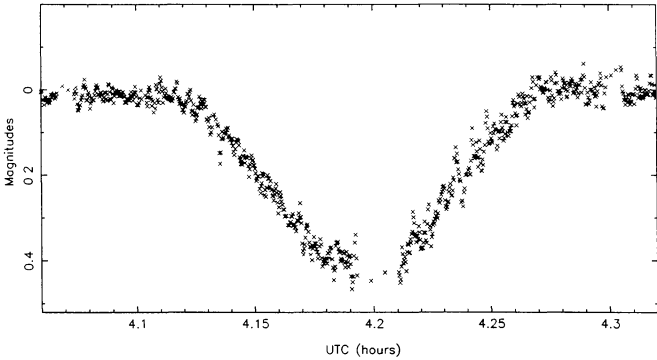
J3 OCC J2 23 JUL 1985 (PIC-DU-MIDI) 3214 PTS



J3 OCC J2 23 JUL 1985 (BRASOPOLIS) 794 PTS



J3 OCC J2 23 JUL 1985 (GRANADA) 1049 PTS



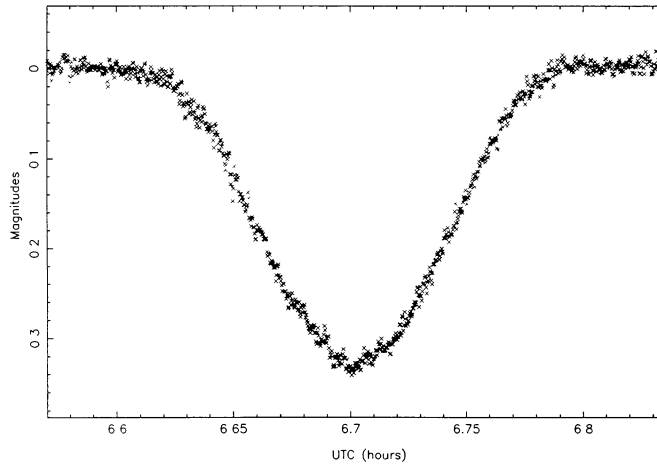
| PREDICTION | begins           | maxi.           | ends             | Magn.<br>drop |
|------------|------------------|-----------------|------------------|---------------|
| E-2 (1)    | h m s<br>6 35 43 | h m s<br>6 42 5 | h m s<br>6 48 30 | 1.371         |
| E-3 (1)    | 6 35 45          | 6 42 7          | 6 48 32          | 1.363         |
| G-5 (1)    | 6 35 40          | 6 42 0          | 6 48 23          | 1.304         |
| G-5 (2)    | 6 35 40          | 6 42 2          | 6 48 26          | 1.287         |

JULY 30, 1985

J3 Eclipses J2 (partial)

| OBSERVATIONS: |   |    |           | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |     |
|---------------|---|----|-----------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|-----|
|               | h | m  | s         |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |     |
| BRASOPOLIS    | 6 | 42 | 10<br>± 7 | 0.328<br>±0.009       | -10   | T              | 60      | PB          | +47        | -42                          | 9.0           | [1]    | V                       | 1.0 |

J3 ECL J2 30 JUL 1985 (BRASOPOLIS) 954 PTS



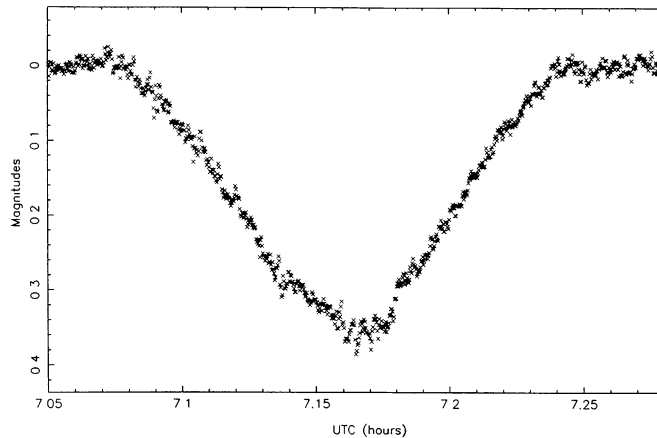
| PREDICTION | begins          | maxi.           | ends             | Magn.<br>drop |
|------------|-----------------|-----------------|------------------|---------------|
| E-2 (1)    | h m s<br>7 4 45 | h m s<br>7 9 46 | h m s<br>7 14 48 | 0.217         |
| E-3 (1)    | 7 4 47          | 7 9 48          | 7 14 50          | 0.218         |
| G-5 (1)    | 7 4 38          | 7 9 40          | 7 14 45          | 0.225         |
| G-5 (2)    | 7 4 36          | 7 9 39          | 7 14 46          | 0.439         |

JULY 30, 1985

J3 Occults J2 (partial)

| OBSERVATIONS: |   |   |           |                 | (C-0)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|---------------|---|---|-----------|-----------------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|               | h | m | s         |                 |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| BRASOPOLIS    | 7 | 9 | 56<br>± 7 | 0.358<br>±0.014 | -16                   | T     | 60             | PB      | +40         | -35        | 9.1                          | [1]           | V      | 1.0                     |

J3 OCC J2 30 JUL 1985 (BRASOPOLIS) 865 PTS



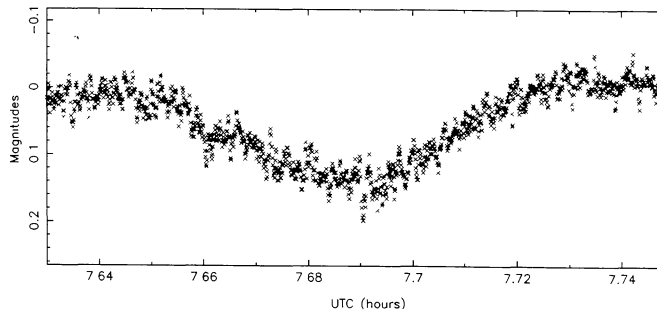
| PREDICTION | begins  | maxi.   | ends    | Magn.<br>drop |
|------------|---------|---------|---------|---------------|
|            | h m s   | h m s   | h m s   |               |
| E-2 (1)    | 7 38 50 | 7 41 15 | 7 43 40 | 0.143         |
| E-3 (1)    | 7 38 57 | 7 41 21 | 7 43 45 | 0.140         |
| (1)        | 7 38 51 | 7 41 16 | 7 43 42 | 0.145         |
| G-5<br>(2) | 7 38 50 | 7 41 16 | 7 43 43 | 0.084         |

AUGUST 3, 1985

J1 Occults J3 (partial)

| OBSERVATIONS:   |                          |  |  |  | (C-O)<br>G-5<br>(sec) | Inst.      | Apert.<br>(cm) | Recept. | Elevation |     | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |     |
|-----------------|--------------------------|--|--|--|-----------------------|------------|----------------|---------|-----------|-----|------------------------------|---------------|--------|-------------------------|-----|
|                 |                          |  |  |  | Jup.<br>(°)           | Sun<br>(°) |                |         |           |     |                              |               |        |                         |     |
| LA SILLA<br>ESO | h m s<br>7 41 21<br>± 18 |  |  |  | 0.141<br>±0.027       | -5         | T              | 50      | PE2       | +51 | -49                          | 3.7           | [1]    | B                       | 0.3 |

J1 OCC J3 03 AUG 1985 (ESO) 1440 PTS



| PREDICTION | begins   | maxi.    | ends     | Magn.<br>drop |
|------------|----------|----------|----------|---------------|
|            | h m s    | h m s    | h m s    |               |
| E-2 (1)    | 22 21 28 | 23 26 59 | 23 32 28 | 0.187         |
| E-3 (1)    | 23 21 31 | 23 27 2  | 23 32 31 | 0.187         |
| (1)        | 23 21 33 | 23 27 6  | 23 32 37 | 0.192         |
| G-5<br>(2) | 23 21 30 | 23 27 6  | 23 32 41 | 0.115         |

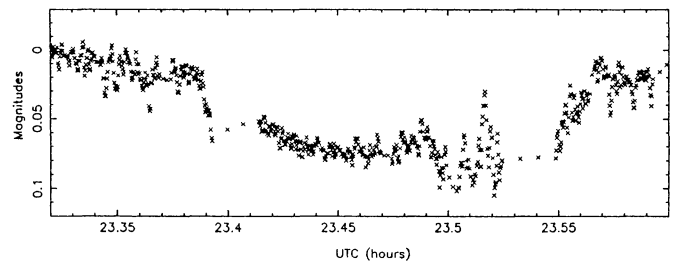
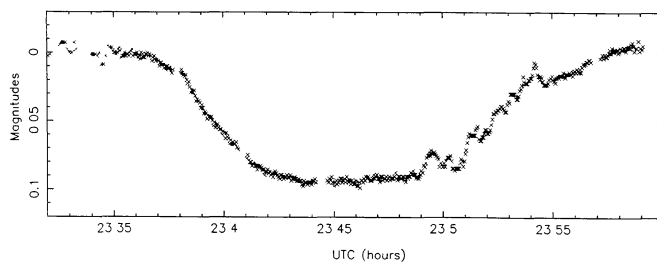
AUGUST 5, 1985

J3 Occults J4 (partial)

| OBSERVATIONS: |    |    |      |        | (C-0)        | Inst. | Apert. | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|---------------|----|----|------|--------|--------------|-------|--------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|               |    |    |      |        | G-5<br>(sec) |       |        |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| TERAMO        | h  | m  | s    |        | -18          | L     | 40     | PT1     | +30         | -31        | 13.0                         | [2]           | V      | 2.0                     |
|               | 23 | 27 | 24   | 0.096  |              |       |        |         |             |            |                              |               |        |                         |
|               |    |    | ± 14 | ±0.004 |              |       |        |         |             |            |                              |               |        |                         |
| CATANIA       | 23 | 28 | 51   | 0.043  | -104         | T     | 91     | PC1     | +34         | -35        |                              | [2]           | V      | 1.0                     |
|               |    |    | ± 18 | ±0.011 |              |       |        |         |             |            |                              |               |        |                         |

J3 OCC J4 05 AUG 1985 (TERAMO) 490 PTS

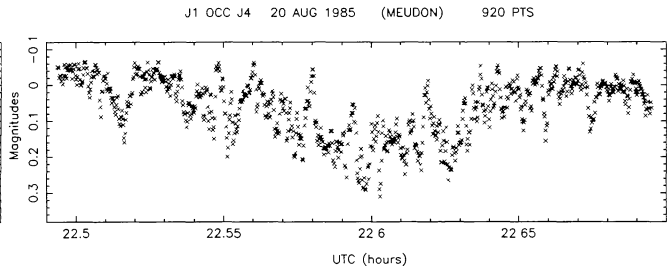
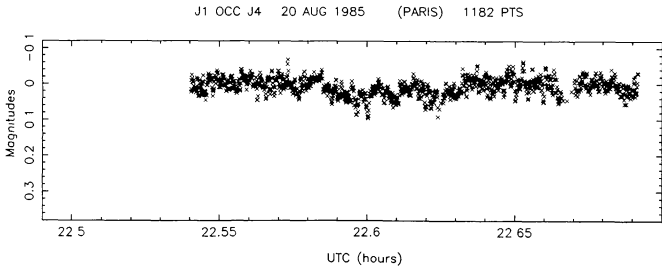
J3 OCC J4 05 AUG 1985 (CATANIA) 987 PTS



| PREDICTION | begins            | maxi.             | ends              | Magn.<br>drop |
|------------|-------------------|-------------------|-------------------|---------------|
| E-2 (1)    | h m s<br>22 34 37 | h m s<br>22 35 58 | h m s<br>22 37 19 | 0.023         |
| E-3 (1)    | 22 34 41          | 22 36 2           | 22 37 22          | 0.022         |
| (1)        | 22 34 50          | 22 36 10          | 22 37 31          | 0.022         |
| G-5 (2)    | 22 34 48          | 22 36 12          | 22 37 33          | 0.007         |

AUGUST 20, 1985  
J1 Occults J4 (partial)

| OBSERVATIONS: |    |    |      | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |     |
|---------------|----|----|------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|-----|
|               |    |    |      |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |     |
| PARIS         | h  | m  | s    |                       |       |                |         |             |            | 2.6                          |               |        |                         |     |
|               | 22 | 36 | 26   | 0.031                 | -16   | L              | 38      | PS          | +23        | -27                          |               | [1]    | v                       | 0.5 |
|               |    |    | ± 44 | ±0.030                |       |                |         |             |            |                              |               |        |                         |     |
| MEUDON        | 22 | 36 | 6    | 0.160                 | + 4   | T              | 105     | N           | +23        | -27                          |               | [1]    | -                       | 0.8 |
|               |    |    | ± 48 | ±0.078                |       |                |         |             |            |                              |               |        |                         |     |



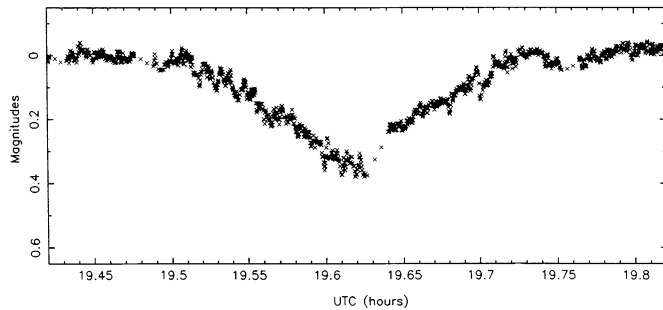
| PREDICTION | begins            | maxi.             | ends              | Magn.<br>drop |
|------------|-------------------|-------------------|-------------------|---------------|
| E-2 (1)    | h m s<br>19 30 31 | h m s<br>19 37 10 | h m s<br>19 43 53 | 0.170         |
| E-3 (1)    | 19 30 31          | 19 37 10          | 19 43 54          | 0.171         |
| (1)        | 19 30 19          | 19 37 1           | 19 43 47          | 0.176         |
| G-5<br>(2) | 19 30 14          | 19 37 7           | 19 43 47          | 0.341         |

AUGUST 27, 1985

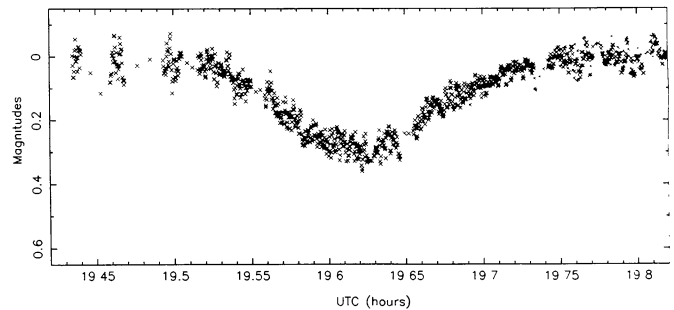
J3 Occults J2 (partial)

| OBSERVATIONS:            |    |    |            | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |      |
|--------------------------|----|----|------------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|------|
|                          | h  | m  | s          |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |      |
| CATANIA                  | 19 | 36 | 58<br>± 15 | 0.331<br>±0.029       | + 3   | T              | 91      | PC1         | +28        | -22                          | 9.4           | [2]    | V                       | 1.2  |
| BARCELONA<br>GEA-MOLLET  | 19 | 37 | 7<br>± 29  | 0.293<br>±0.050       | - 6   | T              | 41      | PM          | +19        | -11                          |               | [1]    | V                       | 1.3  |
| AIX EN PROV.<br>GEOS-RMS | 19 | 36 | 18<br>± 9  | 0.277<br>±0.014       | +43   | T              | 15      | V           | +19        | -12                          |               | [1]    | -                       | 26.0 |
| OHP                      | 19 | 37 | 23<br>± 9  | -                     | -22   | T              | 80      | PA          | +19        | -12                          |               | [1]    | V                       | 3.0  |
| ZOETERMEER               | 19 | 37 | 57<br>± 17 | 0.603<br>±0.095       | -56   | T              | 30      | PP          | +11        | - 8                          |               | [3]    | -                       | 47.0 |
| PIC DU MIDI              | 19 | 36 | 14<br>± 20 | 0.457<br>±0.048       | +47   | T              | 105     | N           | +17        | - 9                          |               | [2]    | R                       | 0.9  |

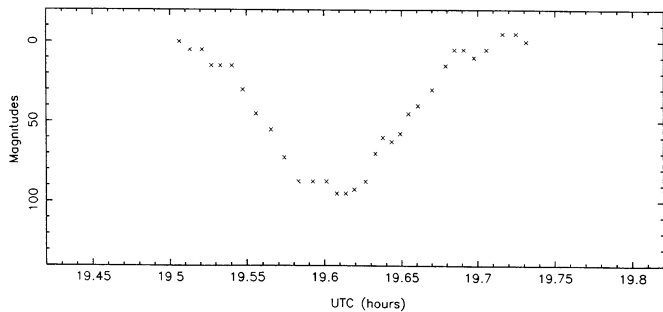
J3 OCC J2 27 AUG 1985 (CATANIA) 1466 PTS



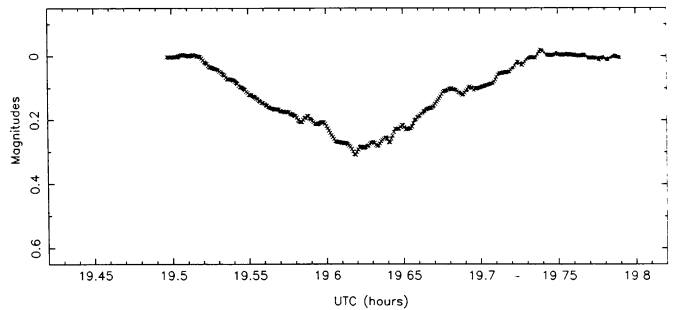
J3 OCC J2 27 AUG 1985 (MOLLET GEA) 1130 PTS



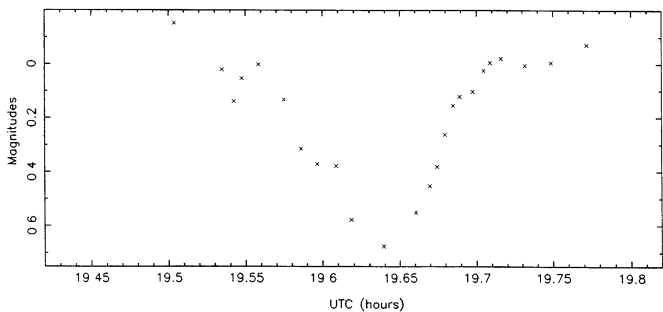
J3 OCC J2 27 AUG 1985 (AIX-EN-P : GEOS-RMS) 33 PTS



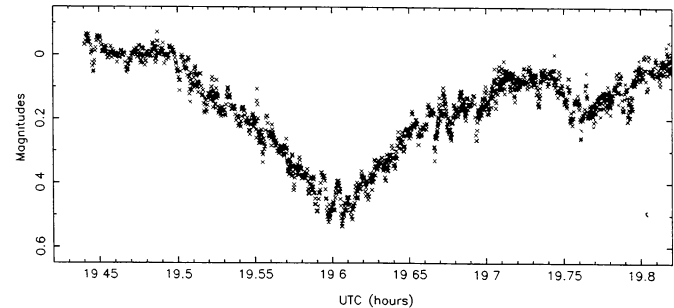
J3 OCC J2 27 AUG 1985 (OHP) 353 PTS



J3 OCC J2 27 AUG 1985 (ZOETERMEER) 25 PTS



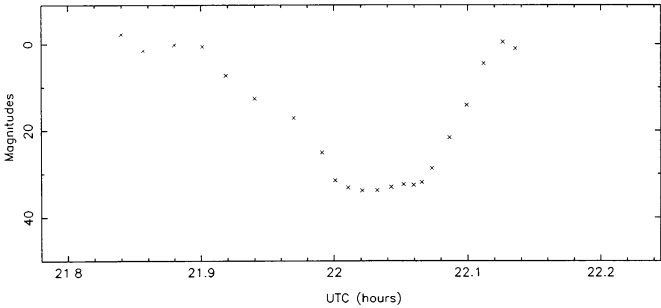
J3 OCC J2 27 AUG 1985 (PIC DU MIDI) 1612 PTS



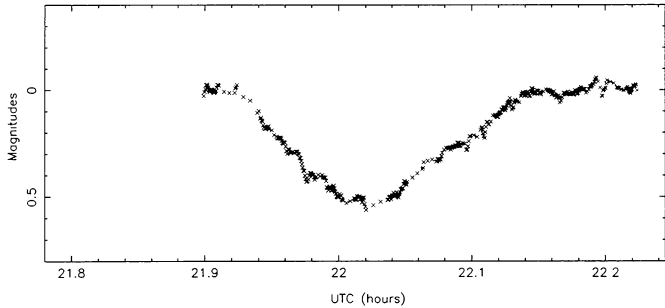
| PREDICTION               | begins          | maxi.           | ends     | Magn. drop | AUGUST 27, 1985          |       |                |         |                               |  |                              |               |        |                         |
|--------------------------|-----------------|-----------------|----------|------------|--------------------------|-------|----------------|---------|-------------------------------|--|------------------------------|---------------|--------|-------------------------|
|                          | h m s           | h m s           | h m s    |            | J3 Eclipses J2 (partial) |       |                |         |                               |  |                              |               |        |                         |
| E-2 (1)                  | 22 52 48        | 22 1 40         | 22 10 37 | 0.485      |                          |       |                |         |                               |  |                              |               |        |                         |
| E-3 (1)                  | 21 52 46        | 22 1 39         | 22 10 37 | 0.491      |                          |       |                |         |                               |  |                              |               |        |                         |
| (1)                      | 21 52 34        | 22 1 29         | 22 10 34 | 0.510      |                          |       |                |         |                               |  |                              |               |        |                         |
| G-5 (2)                  | 21 52 33        | 22 1 23         | 22 10 33 | 0.476      |                          |       |                |         |                               |  |                              |               |        |                         |
| OBSERVATIONS:            |                 |                 |          |            | (C-O)<br>G-5<br>(sec)    | Inst. | Apert.<br>(cm) | Recept. | Elevation<br>Jup. (°) Sun (°) |  | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
| AIX EN PROV.<br>GEOS-RMS | h m s           |                 |          |            |                          |       |                |         |                               |  | 9.2                          |               |        |                         |
|                          | 22 1 22<br>± 22 | -               |          |            | + 7                      | T     | 15             | V       | +27 -31                       |  |                              | [1]           | -      | 47.0                    |
| BARCELONA<br>MOLLET      | 22 1 16<br>± 12 | 0.526<br>±0.024 |          |            | +13                      | T     | 41             | PM      | +30 -32                       |  |                              | [2]           | V      | 3.0                     |
| BARCELONA                | 22 3 5<br>± 11  | -<br>±0.024     |          |            | -96                      | T     | 21             | V       | +30 -32                       |  |                              | [1]           | -      | 68.0                    |
| PIC DU MIDI              | 22 1 23<br>± 11 | 0.465<br>±0.050 |          |            | - 6                      | T     | 105            | N       | +28 -30                       |  |                              | ?             | R      | 1.4                     |
| MEUDON                   | 22 1 40<br>± 36 | 0.422<br>±0.097 |          |            | -11                      | T     | 105            | N       | +22 -26                       |  |                              | [1]           | -      | 1.0                     |
| OHP                      | 22 1 21<br>± 6  | 0.460<br>±0.011 |          |            | + 8                      | T     | 60             | PA      | +27 -31                       |  |                              | [1]           | V      | 3.0                     |
| CALERN<br>CERGA - OCA    | 22 1 50<br>± 25 | 0.516<br>±0.043 |          |            | -21                      | T     | 150            | PO      | +27 -32                       |  |                              | [1]           | (*)    | 0.6                     |
| PARIS                    | 22 1 9<br>± 60  | 0.183<br>±0.040 |          |            | +20                      | L     | 38             | PS      | +22 -26                       |  |                              | [1]           | V      | 0.7                     |
| BOUGIVAL<br>GEOS -FND    | 22 0 33<br>± 8  | -               |          |            | +57                      | T     | 11             | V       | +22 -26                       |  |                              | ?             | -      | 25.0                    |

(\*) 85 to 4110 Å

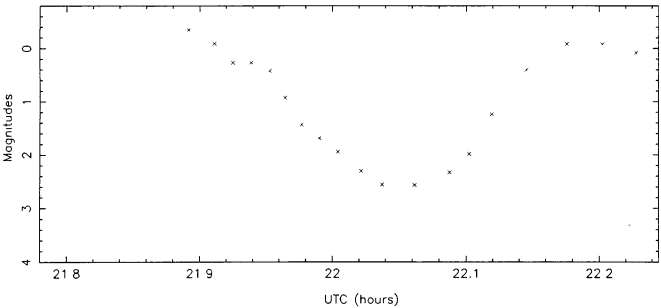
J3 ECL J2 27 AUG 1985 (GEOS-RMS) 23 PTS



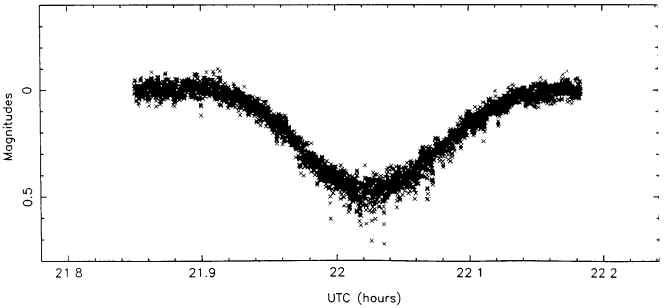
J3 ECL J2 27 AUG 1985 (GEA-MOLLET) 392 PTS



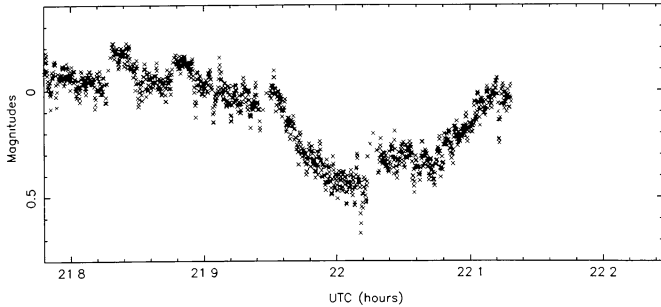
J3 ECL J2 27 AUG 1985 (GEA-BARCELONA) 20 PTS



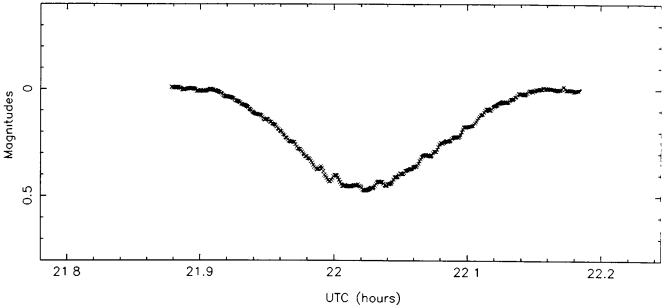
J3 ECL J2 27 AUG 1985 (PIC-DU-MIDI) 3266 PTS

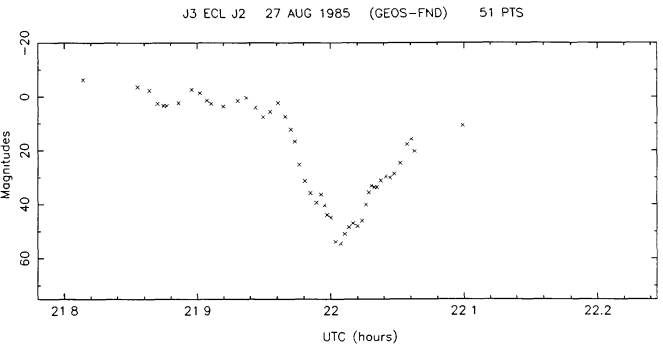
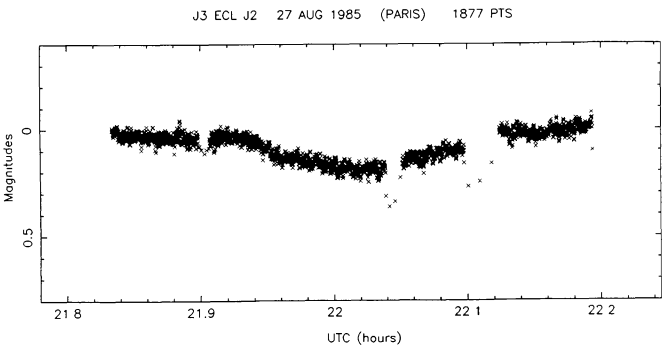
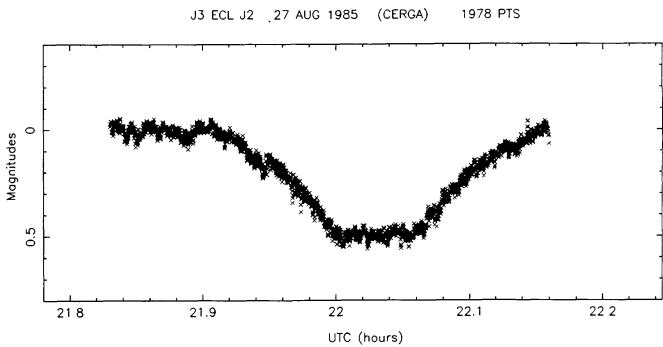


J3 ECL J2 27 AUG 1985 (MEUDON) 1232 PTS



J3 ECL J2 27 AUG 1985 (OHP) 370 PTS



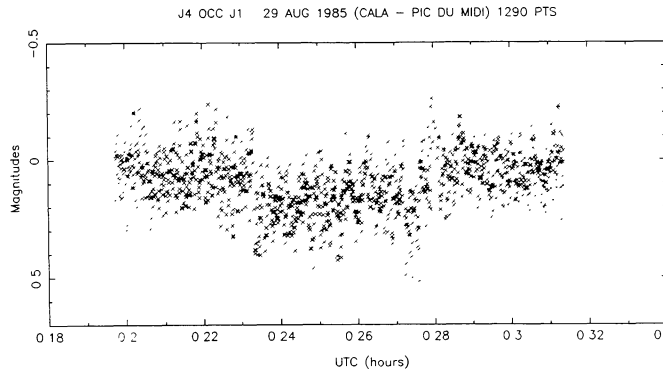


| PREDICTION | begins           | maxi.            | ends             | Magn. drop |
|------------|------------------|------------------|------------------|------------|
| E-2 (1)    | h m s<br>0 15 25 | h m s<br>0 16 36 | h m s<br>0 17 47 | 0.010      |
| E-3 (1)    | 0 15 29          | 0 16 40          | 0 17 51          | 0.012      |
| (1)        | 0 15 37          | 0 16 48          | 0 17 59          | 0.009      |
| G-5 (2)    | 0 15 37          | 0 16 48          | 0 17 59          | 0.008      |

AUGUST 29, 1985

J4 Occults J1 (partial)

| OBSERVATIONS:       |   |    |           | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|---------------------|---|----|-----------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|                     | h | m  | s         |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| PIC-DU-MIDI<br>CALA | 0 | 15 | 11<br>± 7 | 0.140<br>±0.050       | +98   | T              | 60      | C           | +23        | -18                          | 4.5           | [1]    | -<br>0.3                |



| PREDICTION | begins           | maxi.            | ends             | Magn.<br>drop |
|------------|------------------|------------------|------------------|---------------|
| E-2 (1)    | h m s<br>0 45 11 | h m s<br>1 17 18 | h m s<br>1 54 04 | 0.346         |
| E-3 (1)    | 0 46 21          | 1 18 04          | 1 54 54          | 0.345         |
| (1)        | 0 45 55          | 1 18 17          | 1 55 52          | 0.386         |
| G-5<br>(2) | 0 45 58          | 1 18 40          | 1 55 12          | 0.362         |

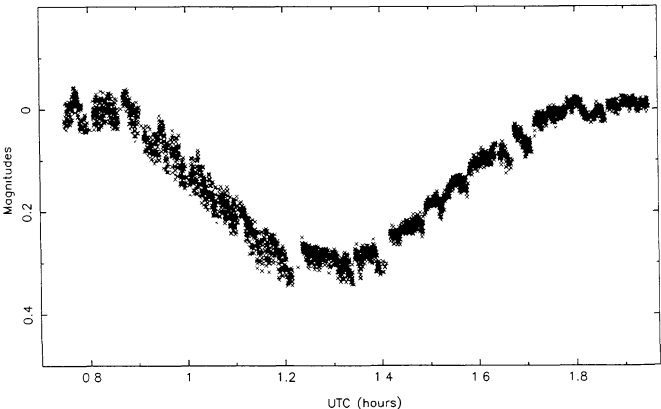
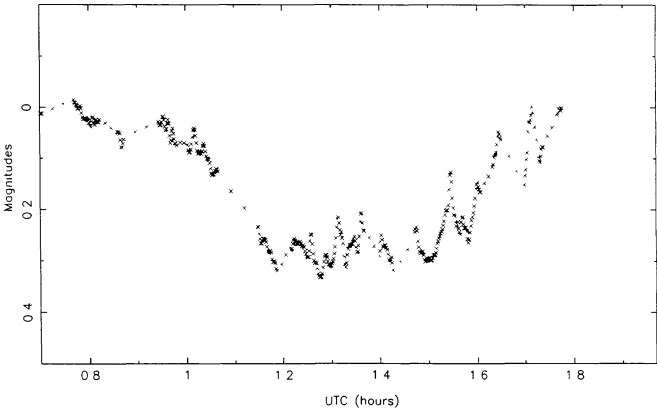
AUGUST 29, 1985

J3 Eclipses J2 (partial)

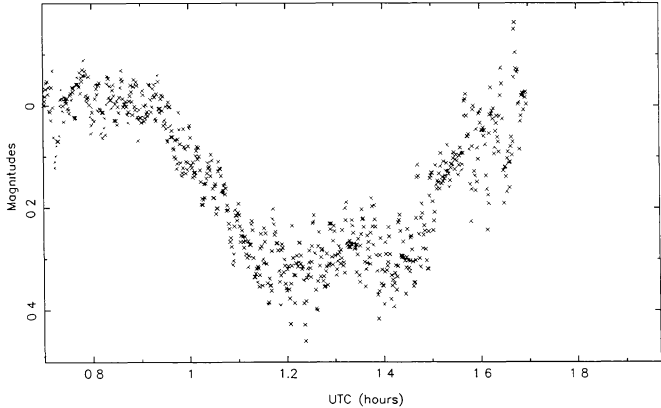
| OBSERVATIONS:   |   |    |    |               | (C-0)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|-----------------|---|----|----|---------------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|                 | h | m  | s  |               |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| OHP             | 1 | 20 | 41 | 0.295<br>± 81 | -144                  | T     | 80             | PA      | +16         | -34        | 5.4                          | [3]           | V      | 10.0                    |
| LA SILLA<br>ESO | 1 | 17 | 21 | 0.301<br>± 59 | + 56                  | T     | 100            | PE1     | +58         | -31        |                              | [1]           | V      | 1.3                     |
| PIC DU MIDI     | 1 | 17 | 3  | 0.324<br>±194 | + 74                  | T     | 105            | N       | +19         | -37        |                              | [1]           | R      | 5.1                     |

J3 ECL J2 29 AUG 1985 (OHP) 404 PTS

J3 ECL J2 29 AUG 1985 (ESO) 3289 PTS



J3 ECL J2 29 AUG 1985 (PIC DU MIDI) 699 PTS



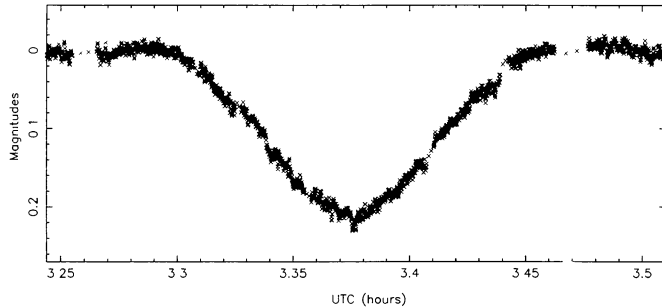
| PREDICTION | begins           | maxi.            | ends             | Magn.<br>drop |
|------------|------------------|------------------|------------------|---------------|
| E-2 (1)    | h m s<br>3 16 19 | h m s<br>3 22 24 | h m s<br>3 28 35 | 0.263         |
| E-3 (1)    | 3 16 21          | 3 22 26          | 3 28 38          | 0.266         |
| (1)        | 3 16 34          | 3 22 38          | 3 28 48          | 0.256         |
| G-5<br>(2) | 3 16 33          | 3 22 34          | 3 28 49          | 0.208         |

AUGUST 29, 1985

J4 Eclipses J1 (penumbra)

| OBSERVATIONS:   |   |    |     |        | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|-----------------|---|----|-----|--------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|                 |   |    |     |        |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| LA SILLA<br>ESO | h | m  | s   |        |                       |       |                |         |             |            | 5.7                          |               |        |                         |
|                 | 3 | 22 | 31  | 0.212  | +7                    | T     | 100            | PE1     | +79         | -62        |                              | [1]           | V      | 0.5                     |
|                 |   |    | ± 9 | ±0.009 |                       |       |                |         |             |            |                              |               |        |                         |

J4 ECL J1 29 AUG 1985 (ESO) 2073 PTS



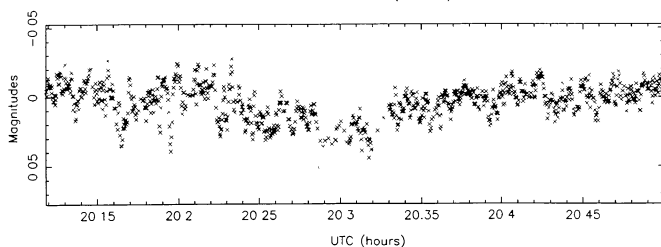
| PREDICTION | begins     | maxi.             | ends       | Magn.<br>drop |
|------------|------------|-------------------|------------|---------------|
| E-2 (1)    | h m s<br>- | h m s<br>20 18 39 | h m s<br>- | 0.0           |
| E-3 (1)    | -          | 20 18 35          | -          | 0.0           |
| (1)        | -          | 20 18 21          | -          | 0.0           |
| G-5<br>(2) | -          | 20 18 21          | -          | 0.0           |

AUGUST 29, 1985

J4 Occults J1 (grazing)

| OBSERVATIONS: |    |    |      | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |     |
|---------------|----|----|------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|-----|
|               |    |    |      |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |     |
| CATANIA       | h  | m  | s    | 0.022                 | +38   | T              | 91      | PC1         | +32        | -30                          | 3.7           | [1]    | V                       | 1.5 |
|               | 20 | 17 | 43   | ±0.015                |       |                |         |             |            |                              |               |        |                         |     |
|               |    |    | ± 89 |                       |       |                |         |             |            |                              |               |        |                         |     |

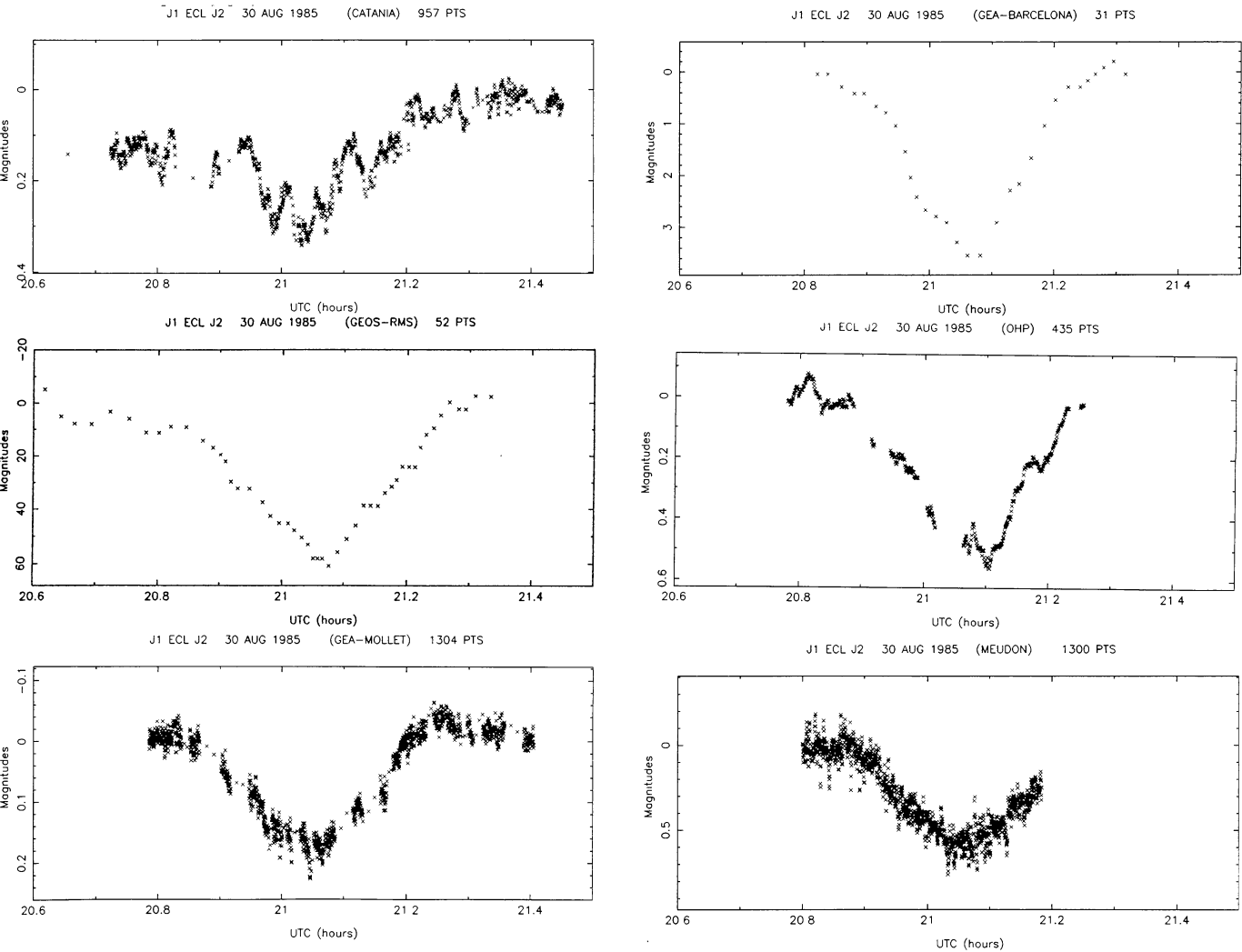
J4 OCC J1 29 AUG 1985 (CATANIA) 905 PTS

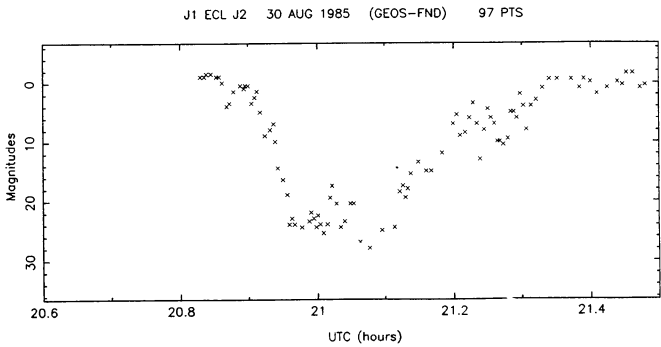
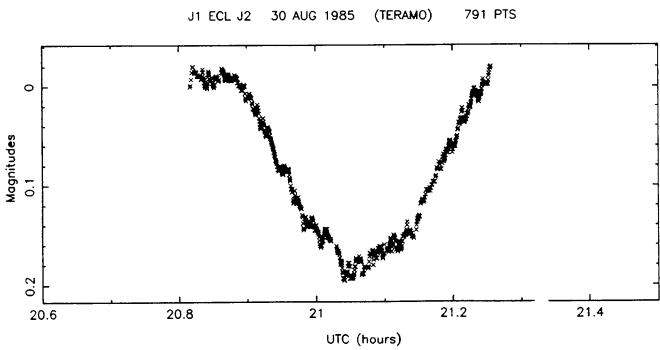


| PREDICTION    | begins   | maxi.   | ends     | Magn. drop |           |       |        |         |           |         |                     |            |        |                   |
|---------------|----------|---------|----------|------------|-----------|-------|--------|---------|-----------|---------|---------------------|------------|--------|-------------------|
|               | h m s    | h m s   | h m s    |            |           |       |        |         |           |         |                     |            |        |                   |
| E-2 (1)       | 20 48 18 | 21 3 31 | 21 17 4  | 0.491      |           |       |        |         |           |         |                     |            |        |                   |
| E-3 (1)       | 20 48 47 | 21 3 56 | 21 17 26 | 0.488      |           |       |        |         |           |         |                     |            |        |                   |
| (1)           | 20 48 46 | 21 3 46 | 21 17 7  | 0.454      |           |       |        |         |           |         |                     |            |        |                   |
| G-5 (2)       | 20 48 53 | 21 3 27 | 21 17 6  | 0.439      |           |       |        |         |           |         |                     |            |        |                   |
| OBSERVATIONS: |          |         |          |            | (C-O)     | Inst. | Apert. | Recept. | Elevation |         | Dist. to Jup. in Rj | Obs. Cond. | Filter | Time inter. (sec) |
|               |          |         |          |            | G-5 (sec) |       | (cm)   |         | Jup. (°)  | Sun (°) |                     |            |        |                   |
| CATANIA       |          |         |          |            |           |       |        |         |           |         | 6.0                 | [2]        | V      | 3.6               |
|               |          |         |          |            |           |       |        |         |           |         |                     |            |        |                   |
| BARCELONA-GEA |          |         |          |            |           |       |        |         |           |         | 6.0                 | [1]        | -      | 61.0              |
| CASES NOVES   |          |         |          |            |           |       |        |         |           |         |                     |            |        |                   |
| AIX EN PROV.  |          |         |          |            |           |       |        |         |           |         | 6.0                 | [1]        | -      | 59.0              |
| GEOS-RMS      |          |         |          |            |           |       |        |         |           |         |                     |            |        |                   |
| OHP           |          |         |          |            |           |       |        |         |           |         |                     | [2]        | V      | 6.0               |
| BARCELONA     |          |         |          |            |           |       |        |         |           |         |                     |            |        |                   |
| GEA-MOLLET    |          |         |          |            |           |       |        |         |           |         |                     | [2]        | V      | 1.7               |
| MEUDON        |          |         |          |            |           |       |        |         |           |         |                     | [1]        | -      | 1.0               |
| TERAMO        |          |         |          |            |           |       |        |         |           |         |                     | [1]        | V      | 2.0               |
| BOUGIVAL      |          |         |          |            |           |       |        |         |           |         |                     |            |        |                   |
| GEOS-FND      |          |         |          |            |           |       |        |         |           |         |                     | [1]        | -      | 25.0              |

AUGUST 30, 1985

J1 Eclipses J2 (partial)



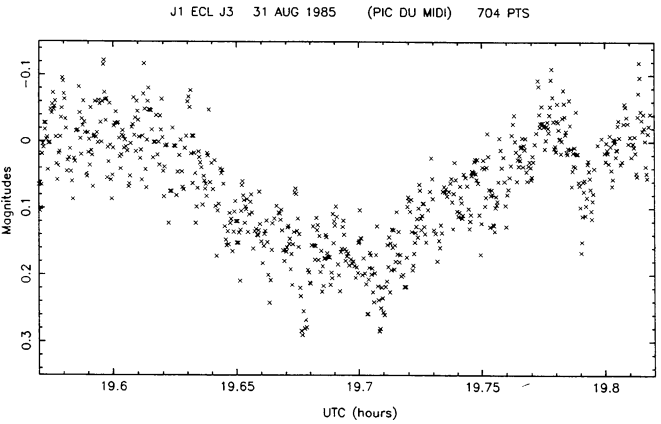
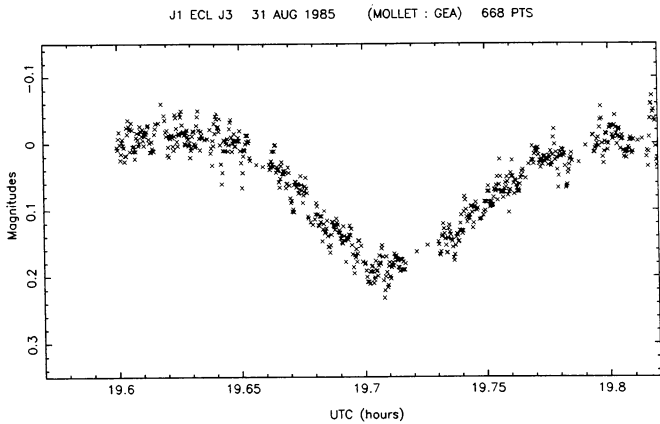


| PREDICTION | begins   | maxi.    | ends     | Magn. drop |
|------------|----------|----------|----------|------------|
|            | h m s    | h m s    | h m s    |            |
| E-2 (1)    | 19 37 25 | 19 42 48 | 19 48 15 | 0.218      |
| E-3 (1)    | 19 37 33 | 19 42 57 | 19 48 25 | 0.219      |
| (1)        | 19 37 23 | 19 42 46 | 19 48 14 | 0.221      |
| G-5        |          |          |          |            |
| (2)        | 19 37 26 | 19 42 39 | 19 48 12 | 0.201      |

AUGUST 31, 1985

J1 Eclipses J3 (partial)

| OBSERVATIONS:       |    |    |      | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|---------------------|----|----|------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|                     |    |    |      |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| BARCELONA<br>MOLLET | h  | m  | s    |                       |       |                |         |             |            | 4.3                          |               |        |                         |
|                     | 19 | 42 | 46   | 0.186                 | 0     | T              | 41      | PM          | +22        | -14                          | [3]           | V      | 1.3                     |
|                     |    |    | ± 21 | ±0.030                |       |                |         |             |            |                              |               |        |                         |
| PIC DU MIDI         | 19 | 41 | 33   | 0.182                 | +73   | T              | 105     | N           | +19        | -12                          | [1]           | R      | 1.3                     |
|                     |    |    | ± 63 | ±0.074                |       |                |         |             |            |                              |               |        |                         |

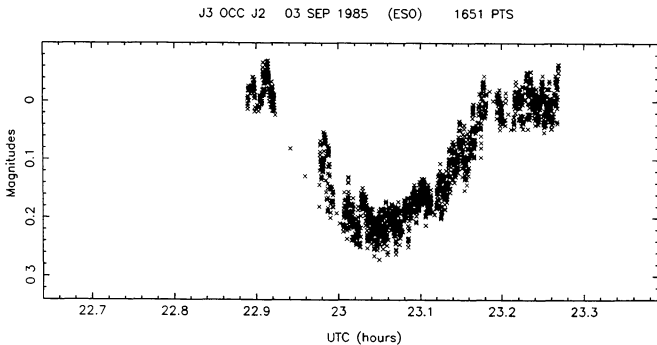
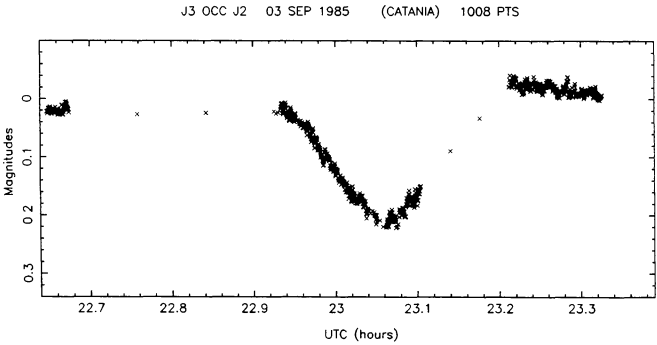


| PREDICTION | begins   | maxi.   | ends    | Magn. drop |
|------------|----------|---------|---------|------------|
|            | h m s    | h m s   | h m s   |            |
| E-2 (1)    | 22 56 23 | 23 3 43 | 23 11 9 | 0.144      |
| E-3 (1)    | 22 56 22 | 23 3 43 | 23 11 9 | 0.145      |
| (1)        | 22 56 8  | 23 3 32 | 23 11 2 | 0.150      |
| G-5 (2)    | 22 56 4  | 23 3 42 | 23 11 1 | 0.286      |

SEPTEMBER 3, 1985

J3 Occults J2 (partial)

| OBSERVATIONS: |    |   |      |        | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|---------------|----|---|------|--------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|               |    |   |      |        |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| CATANIA       | h  | m | s    |        | -4                    | T     | 91             | PC1     | +26         | -45        | 9.3                          | [2]           | V      | 5.10                    |
|               | 23 | 3 | 36   | 0.203  |                       |       |                |         |             |            |                              |               |        |                         |
|               |    |   | ± 18 | ±0.014 |                       |       |                |         |             |            |                              |               |        |                         |
| LA SILLA      |    |   |      |        | +4                    | T     | 50             | PE1     | +40         | - 7        |                              | [3]           | V      | 0.8                     |
| ESO           | 23 | 3 | 28   | 0.212  |                       |       |                |         |             |            |                              |               |        |                         |
|               |    |   | ± 34 | ±0.032 |                       |       |                |         |             |            |                              |               |        |                         |

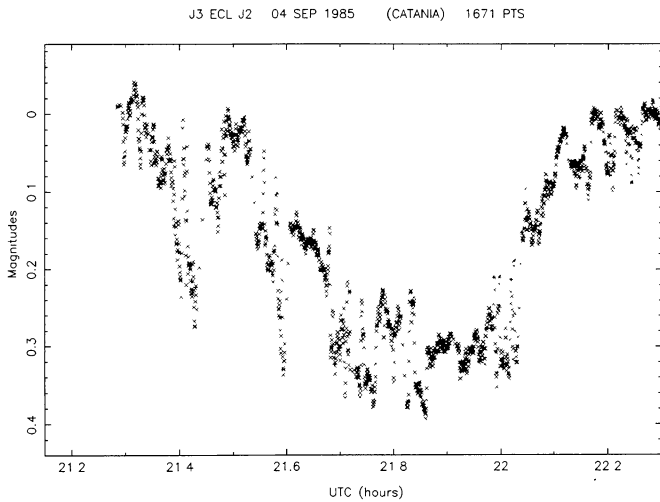
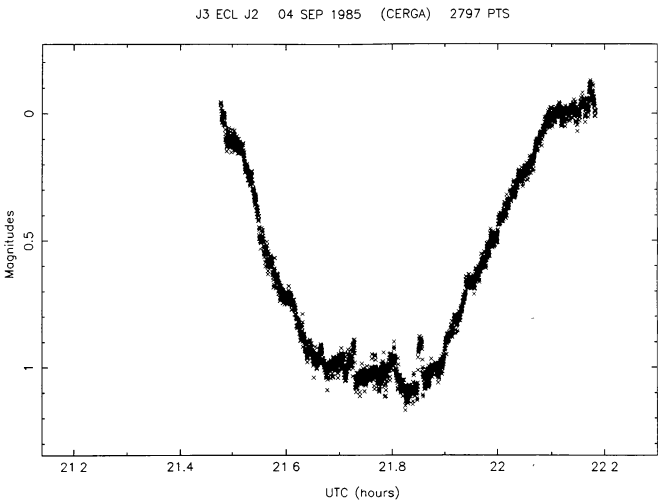
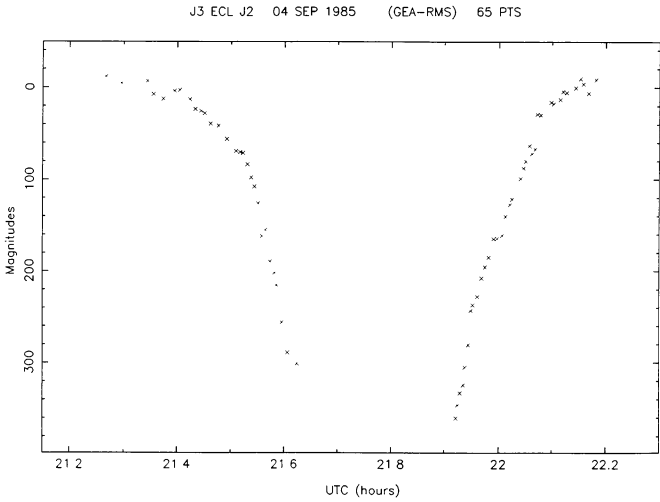
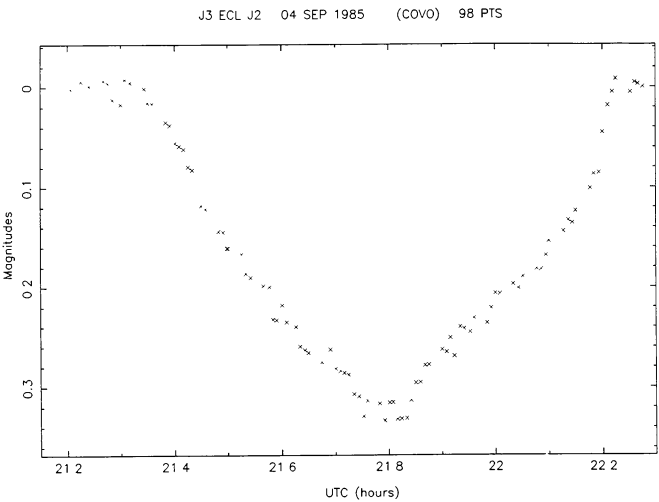


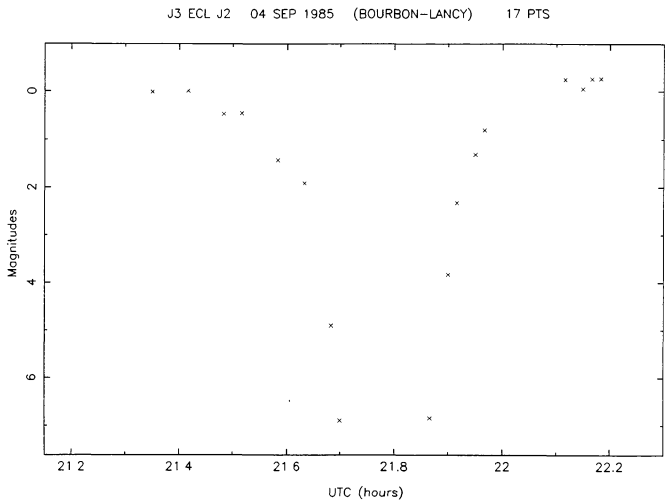
| PREDICTION | begins            | maxi.             | ends              | Magn.<br>drop |
|------------|-------------------|-------------------|-------------------|---------------|
| E-2 (1)    | h m s<br>21 20 52 | h m s<br>21 46 20 | h m s<br>22 12 00 | -             |
| E-3 (1)    | 21 21 21          | 21 46 49          | 22 12 29          | -             |
| (1)        | 21 21 28          | 21 46 55          | 22 12 34          | -             |
| G-5<br>(2) | 21 21 29          | 21 46 55          | 22 12 29          | -             |

SEPTEMBER 4, 1985  
J3 Eclipses J2 (total)

| OBSERVATIONS:            |                           |  |  | (C-0)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|--------------------------|---------------------------|--|--|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|                          |                           |  |  |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| COVO                     | h m s<br>21 47 9          |  |  | 0.311<br>±0.014       | - 14  | T              | ?       | PH          | +25 -31    | 1.7                          | [1]           | V      | 42.0                    |
| AIX EN PROV.<br>GEOS-RMS | 21 46 37<br>± 18          |  |  | -                     | + 18  | T              | 15      | V           | +27 -31    | 1.7                          | [2]           | -      | 51.0                    |
| CALERN<br>CERGA -OCA     | 21 46 32<br>± 40          |  |  | 1.070<br>±0.056       | + 23  | T              | 150     | P0          | +27 -32    |                              | [1]           | (*)    | 0.9                     |
| CATANIA                  | 21 50 52<br>± 95          |  |  | 0.330<br>±0.046       | -237  | T              | 91      | PC1         | +33 -40    |                              | [1]           | V      | 2.3                     |
| BOURBON-LANCY<br>AFOEV   | h m s<br>21 46 49<br>± 15 |  |  | -                     | - 6   | T              | 20      | V           | +25 -29    | 1.7                          | [1]           | -      | 187.0                   |

(\*) 85 to 4110 Å



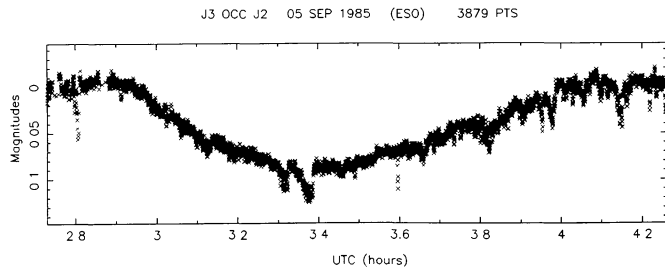


| PREDICTION | begins           | maxi.            | ends            | Magn.<br>drop |
|------------|------------------|------------------|-----------------|---------------|
| E-2 (1)    | h m s<br>2 49 55 | h m s<br>3 23 16 | h m s<br>4 4 41 | 0.074         |
| E-3 (1)    | 2 50 48          | 3 24 13          | 4 5 49          | 0.073         |
| (1)        | 2 50 13          | 3 24 41          | 4 7 59          | 0.081         |
| G-5 (2)    | 2 46 37          | 3 23 49          | 4 2 44          | 0.148         |

SEPTEMBER 5, 1985

J3 Occults J2 (partial)

| OBSERVATIONS: |   |    |      | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br><br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |     |
|---------------|---|----|------|-----------------------|-------|--------------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|-----|
|               |   |    |      |                       |       |                    |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |     |
| LA SILLA      | h | m  | s    |                       |       |                    |         |             |            | 5.7                          |               |        |                         |     |
| ESO           | 3 | 23 | 4    | 0.095                 | +97   | T                  | 50      | PE2         | +79        | -56                          |               | [1]    | B                       | 1.4 |
|               |   |    | ±102 | ±0.009                |       |                    |         |             |            |                              |               |        |                         |     |

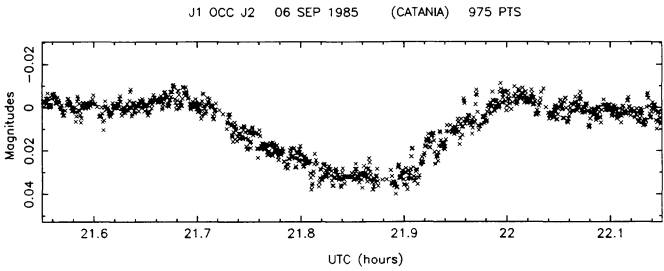


| PREDICTION | begins            | maxi.             | ends              | Magn.<br>drop |
|------------|-------------------|-------------------|-------------------|---------------|
| E-2 (1)    | h m s<br>21 39 18 | h m s<br>21 49 23 | h m s<br>21 58 37 | 0.034         |
| E-3 (1)    | 21 39 50          | 21 49 54          | 21 59 7           | 0.035         |
| (1)        | 21 40 16          | 21 49 44          | 21 58 26          | 0.029         |
| G-5<br>(2) | 21 40 38          | 21 50 2           | 21 58 53          | 0.021         |

SEPTEMBER 6, 1985

J1 Occults J2 (partial)

| OBSERVATIONS: |    |    |      | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |     |
|---------------|----|----|------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|-----|
|               |    |    |      |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |     |
| CATANIA       | h  | m  | s    | 0.037                 | - 95  | T              | 91      | PC1         | +32        | -42                          | 5.2           | [1]    | v                       | 2.2 |
|               | 21 | 51 | 19   | ±0.007                |       |                |         |             |            |                              |               |        |                         |     |
|               |    |    | ± 23 |                       |       |                |         |             |            |                              |               |        |                         |     |



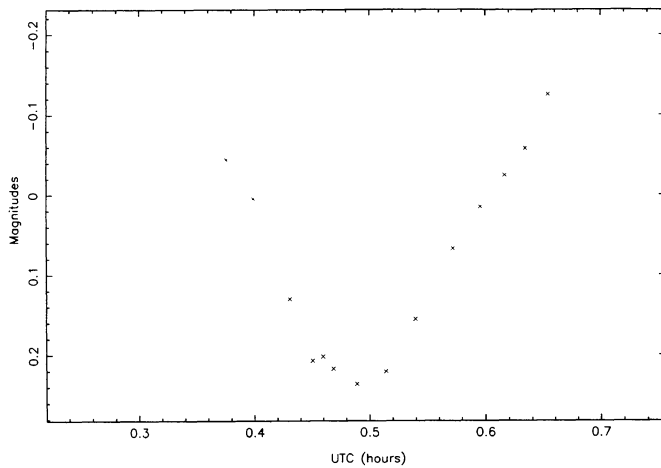
| PREDICTION | begins           | maxi.            | ends             | Magn.<br>drop |
|------------|------------------|------------------|------------------|---------------|
| E-2 (1)    | h m s<br>0 20 54 | h m s<br>0 29 31 | h m s<br>0 37 51 | 0.904         |
| E-3 (1)    | 0 21 9           | 0 29 45          | 0 38 3           | 0.891         |
| (1)        | 0 21 9           | 0 29 42          | 0 37 58          | 0.845         |
| G-5 (2)    | 0 21 6           | 0 29 30          | 0 37 55          | 0.839         |

SEPTEMBER 7, 1985

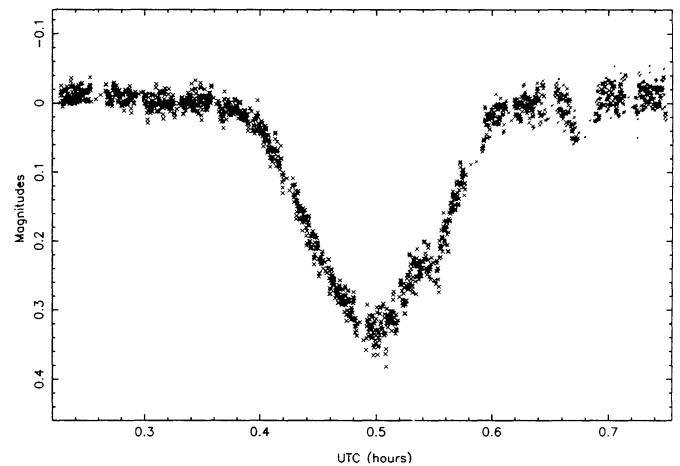
J1 Eclipses J2 (partial)

| OBSERVATIONS: |   |    |      | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |      |
|---------------|---|----|------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|------|
|               | h | m  | s    |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |      |
| ZOETERMEER    | 0 | 29 | 33   | 0.229                 | + 9   | T              | 30      | PP          | + 8        | -31                          | 6.6           | [1]    | -                       | 77.0 |
|               |   |    | ± 17 | ±0.025                |       |                |         |             |            |                              |               |        |                         |      |
| CATANIA       | 0 | 29 | 48   | 0.327                 | - 6   | T              | 91      | PC1         | +13        | -42                          |               | [1]    | V                       | 1.2  |
|               |   |    | ± 22 | ±0.028                |       |                |         |             |            |                              |               |        |                         |      |
| BORDEAUX      | 0 | 29 | 39   | 0.052                 | + 3   | T              | 62      | PBO         | +16        | -39                          |               | [1]    | V                       | 21.0 |
|               |   |    | ± 13 | ±0.005                |       |                |         |             |            |                              |               |        |                         |      |
| OHP           | 0 | 30 | 9    | 0.342                 | -27   | T              | 80      | PA          | +14        | -39                          |               | [3]    | V                       | 3.6  |
|               |   |    | ± 15 | ±0.024                |       |                |         |             |            |                              |               |        |                         |      |

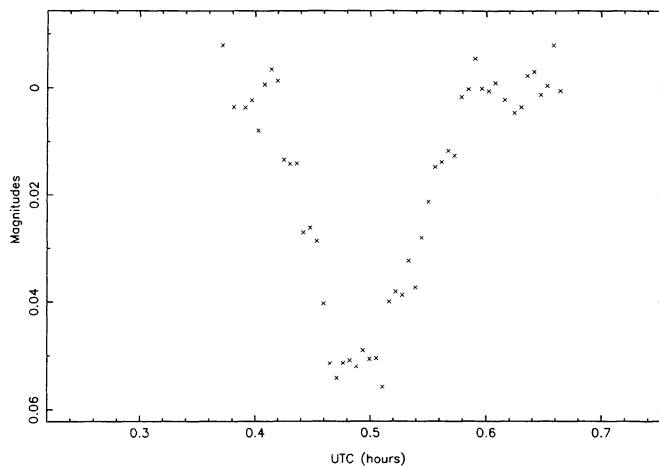
J1 ECL J2 07 SEP 1985 (ZOETERMEER) 15 PTS



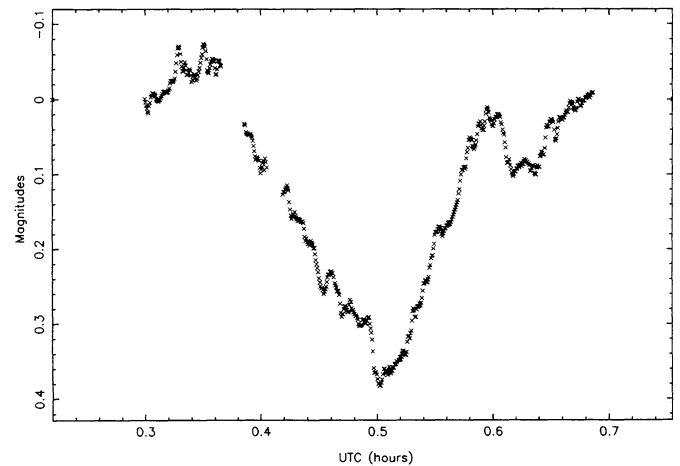
J1 ECL J2 07 SEP 1985 (CATANIA) 1530 PTS



J1 ECL J2 07 SEP 1985 (BORDEAUX) 50 PTS



J1 ECL J2 07 SEP 1985 (OHP) 535 PTS



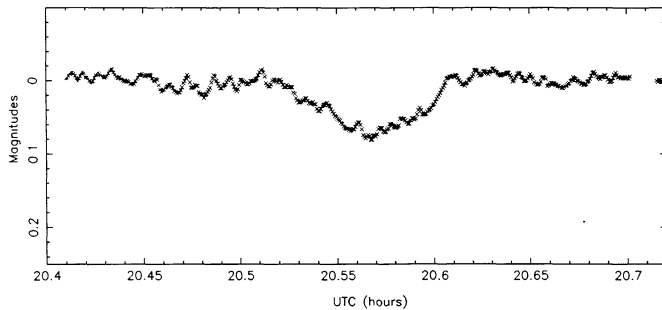
| PREDICTION | begins            | maxi.             | ends              | Magn.<br>drop |
|------------|-------------------|-------------------|-------------------|---------------|
| E-2 (1)    | h m s<br>20 30 46 | h m s<br>20 33 49 | h m s<br>20 36 54 | 0.060         |
| E-3 (1)    | 20 30 54          | 20 33 58          | 20 37 3           | 0.061         |
| (1)        | 20 30 43          | 20 33 48          | 20 36 54          | 0.062         |
| G-5<br>(2) | 20 30 41          | 20 33 55          | 20 36 55          | 0.034         |

SEPTEMBER 7, 1985

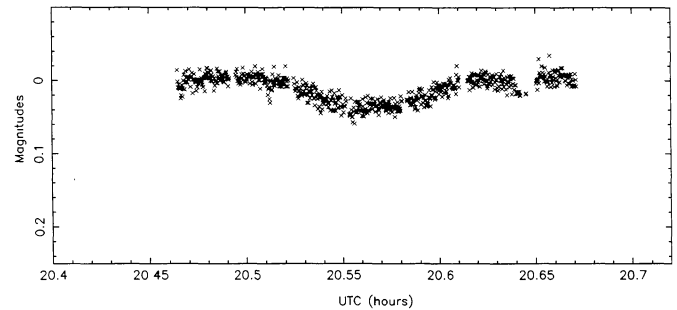
J1 Occults J3 (partial)

| OBSERVATIONS: |    |    |      | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |     |
|---------------|----|----|------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|-----|
|               | h  | m  | s    |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |     |
| OHP           | 20 | 37 | 53   | 0.025                 | -245  | T              | 80      | PA          | +26        | -25                          | 5.6           | [2]    | V                       | 2.5 |
|               |    |    | ± 16 | ±0.004                |       |                |         |             |            |                              |               |        |                         |     |
| CATANIA       | 20 | 33 | 50   | 0.037                 | - 2   | T              | 91      | PC1         | +33        | -25                          |               | [1]    | V                       | 1.1 |
|               |    |    | ± 21 | ±0.008                |       |                |         |             |            |                              |               |        |                         |     |
| MEUDON        | 20 | 33 | 41   | 0.137                 | + 7   | T              | 105     | N           | +21        | -21                          |               | [1]    | -                       | 0.6 |
|               |    |    | ± 57 | ±0.058                |       |                |         |             |            |                              |               |        |                         |     |
| BARCELONA     |    |    |      |                       |       |                |         |             |            |                              |               |        |                         |     |
| GEA-MOLLET    | 20 | 31 | 20   | 0.080                 | +148  | T              | 41      | PM          | +28        | -25                          |               | [2]    | V                       | 1.6 |
|               |    |    | ± 33 | ±0.027                |       |                |         |             |            |                              |               |        |                         |     |

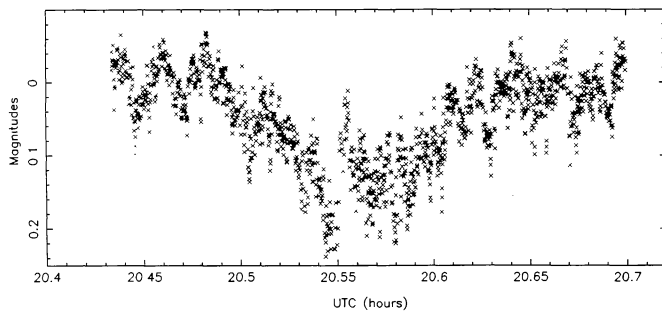
J1 OCC J3 07 SEP 1985 (OHP) 492 PTS



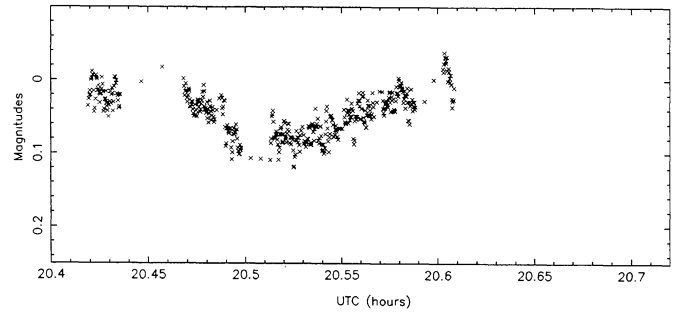
J1 OCC J3 07 SEP 1985 (CATANIA) 671 PTS



J1 OCC J3 07 SEPT 1985 (MEUDON) 1480 PTS



J1 OCC J3 07 SEP 1985 (MOLLET : GEA) 428 PTS

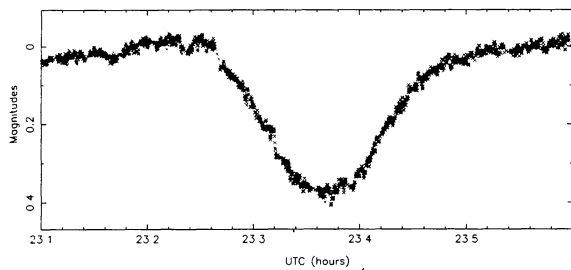


SEPTEMBER 7, 1985

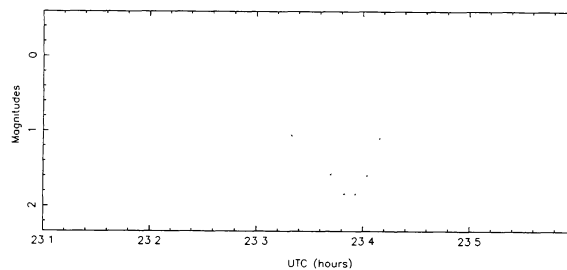
J1 Eclipses J3 (partial)

| PREDICTION    | begins   | maxi.    | ends     | Magn.<br>drop |                       |       |                |         |             |            |                                          |               |        |                         |
|---------------|----------|----------|----------|---------------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------------------|---------------|--------|-------------------------|
|               | h m s    | h m s    | h m s    |               |                       |       |                |         |             |            |                                          |               |        |                         |
| E-2 (1)       | 23 14 3  | 23 22 18 | 23 30 48 | 0.397         |                       |       |                |         |             |            |                                          |               |        |                         |
| E-3 (1)       | 23 14 15 | 23 22 31 | 23 31 2  | 0.401         |                       |       |                |         |             |            |                                          |               |        |                         |
| G-5 (1)       | 23 13 58 | 23 22 13 | 23 30 43 | 0.399         |                       |       |                |         |             |            |                                          |               |        |                         |
| G-5 (2)       | 23 13 58 | 23 21 6  | 23 30 41 | 0.378         |                       |       |                |         |             |            |                                          |               |        |                         |
| OBSERVATIONS: |          |          |          |               | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in R <sub>J</sub> | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|               | h m s    |          |          |               |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                                          |               |        |                         |
| CATANIA       | 23 22 5  |          |          | 0.374         | + 8                   | T     | 91             | PC1     | +22         | -47        | 4.2                                      | [1]           | V      | 1.1                     |
|               | ± 17     |          |          | ±0.016        |                       |       |                |         |             |            |                                          |               |        |                         |
| CASES NOVES   | 23 22 28 |          |          | -             | - 15                  | T     | 30             | V       | +25         | -42        |                                          | [1]           | -      | 42.0                    |
|               | ± 22     |          |          |               |                       |       |                |         |             |            |                                          |               |        |                         |
| BORDEAUX      | 23 21 50 |          |          | 0.176         | + 23                  | T     | 62             | PBO     | +22         | -38        |                                          | [1]           | V      | 10.0                    |
|               | ± 14     |          |          | ±0.008        |                       |       |                |         |             |            |                                          |               |        |                         |
| OHP           | 23 21 56 |          |          | 0.376         | + 17                  | T     | 80             | PA      | +21         | -40        |                                          | [1]           | V      | 2.4                     |
|               | ± 6      |          |          | ±0.006        |                       |       |                |         |             |            |                                          |               |        |                         |
| LA SILLA      | 23 21 55 |          |          | 0.391         | + 18                  | T     | 50             | PE2     | +47         | -10        |                                          | [1]           | B      | 0.5                     |
| ESO           | ± 12     |          |          | ±0.013        |                       |       |                |         |             |            |                                          |               |        |                         |
| PARIS         | 23 21 54 |          |          | 0.443         | + 19                  | L     | 38             | PS      | +18         | -35        |                                          | [1]           | V      | 10.0                    |
|               | ± 2      |          |          | ±0.004        |                       |       |                |         |             |            |                                          |               |        |                         |
| BOUGIVAL      | 23 19 29 |          |          | -             | +164                  | T     | 11             | V       | +18         | -35        |                                          | [1]           | V      | 9.1                     |
| GEOS-FND      | ± 35     |          |          | -             |                       |       |                |         |             |            |                                          |               |        |                         |

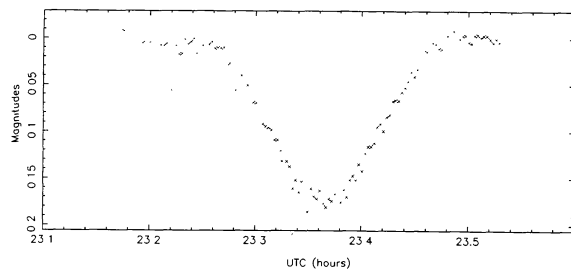
J1 ECL J3 07 SEP 1985 (CATANIA) 2174 PTS



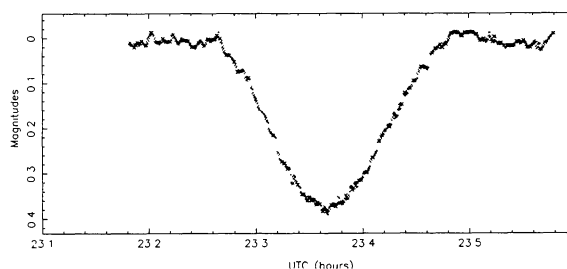
J1 ECL J3 07 SEP 1985 (GEA-CASES NOVES) 31 PTS



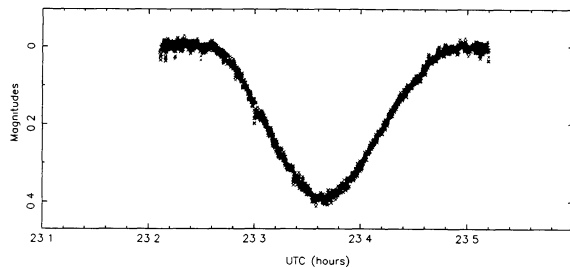
J1 ECL J3 07 SEP 1985 (BORDEAUX) 127 PTS



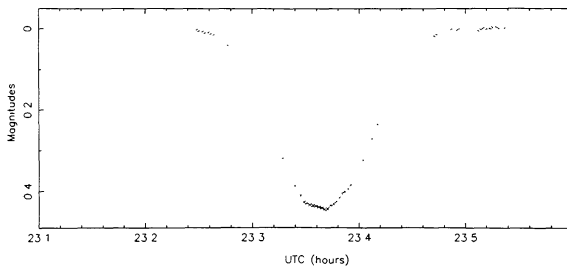
J1 ECL J3 07 SEP 1985 (OHP) 601 PTS



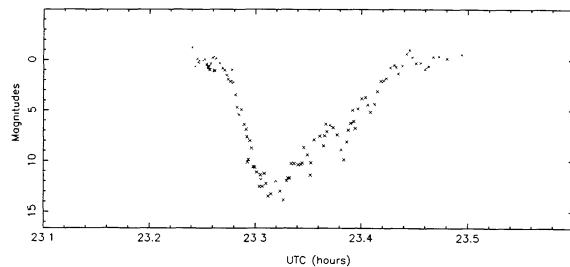
J1 ECL J3 07 SEP 1985 (ESO) 2233 PTS



J1 ECL J3 07 SEP 1985 (PARIS) 110 PTS



J1 ECL J3 07 SEP 1985 (GEOS-FND) 105 PTS



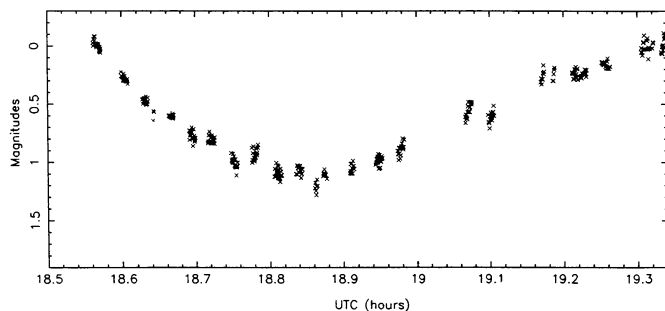
| PREDICTION | begins            | maxi.             | ends              | Magn.<br>drop |
|------------|-------------------|-------------------|-------------------|---------------|
| E-2 (1)    | h m s<br>18 29 17 | h m s<br>18 54 32 | h m s<br>19 18 40 | 0.535         |
| E-3 (1)    | 18 29 50          | 18 55 6           | 19 19 14          | 0.540         |
| (1)        | 18 30 13          | 18 55 14          | 19 19 10          | 0.512         |
| G-5<br>(2) | 18 30 20          | 18 58 3           | 19 55 46          | 0.492         |

SEPTEMBER 11, 1985

J3 Eclipses J2 (partial)

| OBSERVATIONS:           |                           |  |  | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|-------------------------|---------------------------|--|--|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|                         |                           |  |  |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| BARCELONA<br>GEA-MOLLET | h m s<br>18 51 43<br>± 42 |  |  | 1.090<br>±0.058       | +211  | T              | 41      | PM          | +19 -5     | 1.9                          | [3]           | V      | 8.1                     |

J3 ECL J2 11 SEP 1985 (MOLLET : GEA) 345 PTS



| PREDICTION | begins          | maxi.          | ends            | Magn.<br>drop |
|------------|-----------------|----------------|-----------------|---------------|
| E-2 (1)    | h m s<br>0 59 7 | h m s<br>1 4 6 | h m s<br>1 8 57 | 0.036         |
| E-3 (1)    | 0 59 25         | 1 4 21         | 1 9 10          | 0.035         |
| (1)        | 0 59 37         | 1 4 19         | 1 8 53          | 0.030         |
| G-5<br>(2) | 0 59 39         | 1 4 29         | 1 9 0           | 0.022         |

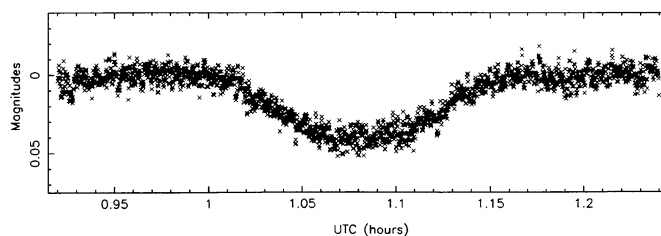
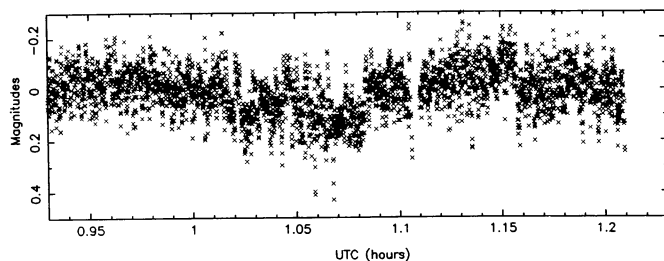
SEPTEMBER 14, 1985

J1 Occults J2 (partial)

| OBSERVATIONS:   |                         |  |  | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|-----------------|-------------------------|--|--|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|                 |                         |  |  |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| PIC DU MIDI     | h m s<br>1 4 15<br>± 20 |  |  | 0.110<br>±0.100       | + 4   | T              | 105     | N           | + 8 -41    | 5.7                          | [2]           | B      | 0.9                     |
| LA SILLA<br>ESO | 1 4 48<br>± 40          |  |  | 0.041<br>±0.009       | -29   | T              | 50      | PE2         | +74 -32    |                              | [1]           | B      | 0.6                     |

J1 OCC J2 14 SEP 1985 (PIC-DU-MIDI) 3149 PTS

J1 OCC J2 14 SEP 1985 (ESO) 1973 PTS



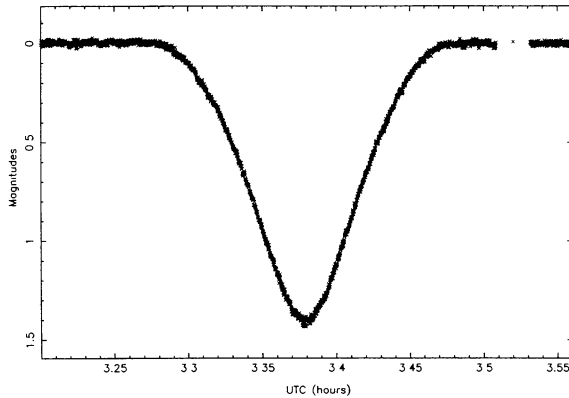
| PREDICTION | begins           | maxi.            | ends            | Magn.<br>drop |
|------------|------------------|------------------|-----------------|---------------|
| E-2 (1)    | h m s<br>3 15 47 | h m s<br>3 22 33 | h m s<br>3 29 7 | 1.352         |
| E-3 (1)    | 3 15 58          | 3 22 43          | 3 29 17         | 1.322         |
| (1)        | 3 15 58          | 3 22 42          | 3 29 14         | 1.265         |
| G-5<br>(2) | 3 15 59          | 3 22 33          | 3 29 18         | 1.323         |

SEPTEMBER 14, 1985

J1 Eclipses J2 (partial)

| OBSERVATIONS: |                | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|---------------|----------------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|               |                |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| LA SILLA      | h m s          |                       |       |                |         |             |            | 6.8                          |               |        |                         |
| ESO           | 3 22 44<br>± 3 | 1.404<br>±0.016       | -2    | T              | 50      | PE2         | +68 -58    |                              | [1]           | B      | 0.6                     |

J1 ECL J2 14 SEP 1985 (ESO) 2058 PTS



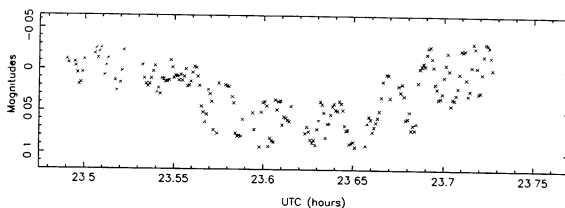
| PREDICTION | begins            | maxi.             | ends              | Magn.<br>drop |
|------------|-------------------|-------------------|-------------------|---------------|
| E-2 (1)    | h m s<br>23 33 49 | h m s<br>23 37 46 | h m s<br>23 41 46 | 0.064         |
| E-3 (1)    | 23 33 58          | 23 37 56          | 23 41 58          | 0.065         |
| (1)        | 23 33 45          | 23 37 43          | 23 41 45          | 0.065         |
| G-5<br>(2) | 23 33 43          | 23 37 53          | 23 41 46          | 0.035         |

SEPTEMBER 14, 1985

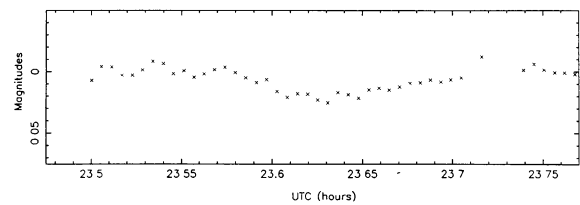
J1 Occults J3 (partial)

| OBSERVATIONS: |                           | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|---------------|---------------------------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|               |                           |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| TERAMO        | h m s<br>23 37 28<br>± 56 | 0.068<br>±0.022       | +15   | L              | 40      | PT1         | +14 -45    | 5.8                          | [1]           | V      | 4.4                     |
| BORDEAUX      | 23 38 0<br>± 14           | 0.021<br>±0.003       | -17   | T              | 62      | PB0         | +18 -42    |                              | [1]           | V      | 22.0                    |
| LA SILLA      | h m s<br>23 37 42<br>± 30 | 0.057<br>±0.016       | +1    | T              | 50      | PE1         | +58 -14    |                              | [1]           | V      | 0.5                     |

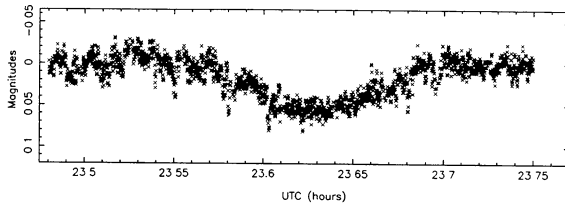
J1 OCC J3 14 SEP 1985 (TERAMO) 196 PTS



J1 OCC J3 14 SEP 1985 (BORDEAUX) 44 PTS



J1 OCC J3 14 SEP 1985 (ESO) 1777 PTS



| PREDICTION | begins   | maxi.   | ends     | Magn.<br>drop |
|------------|----------|---------|----------|---------------|
|            | h m s    | h m s   | h m s    |               |
| E-2 (1)    | 21 46 34 | 22 8 44 | 22 30 36 | 0.254         |
| E-3 (1)    | 21 47 3  | 22 9 14 | 22 31 6  | 0.255         |
| (1)        | 21 47 22 | 22 9 25 | 22 31 10 | 0.248         |
| G-5 (2)    | 21 47 29 | 22 9 3  | 22 31 12 | 0.504         |

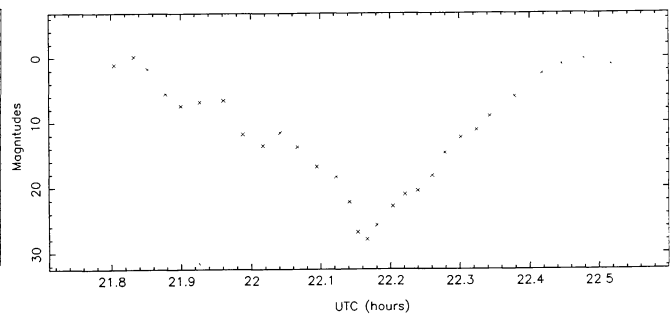
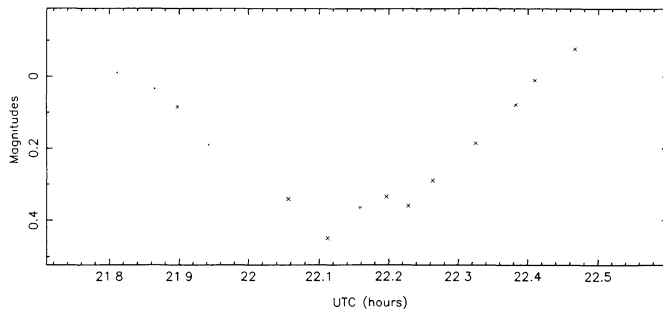
SEPTEMBER 18, 1985

J3 Occults J2 (partial)

| OBSERVATIONS:           |    |    |    | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |       |
|-------------------------|----|----|----|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|-------|
|                         | h  | m  | s  |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |       |
| PIC DU MIDI<br>GEOS-FGR | 22 | 8  | 21 | 0.387<br>±0.054       | + 64  | L              | 8       | V           | +26        | -37                          | 1.0           | [3]    | -                       | 176.0 |
| BOUGIVAL<br>GEOS-FND    | 22 | 10 | 21 | -                     | - 56  | L              | 8       | V           | +20        | -34                          |               | [1]    | -                       | 93.0  |

J3 OCC J2 18 SEP 1985 (GEOS-FGR) 16 PTS

J3 OCC J2 18 SEP 1985 (GEOS-FND) 32 PTS



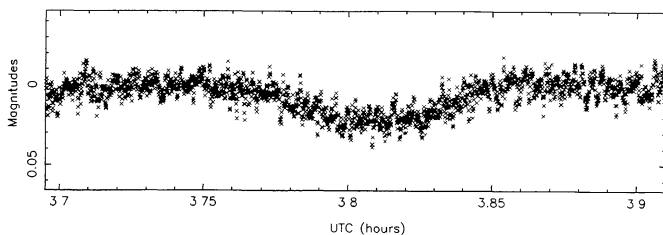
| PREDICTION | begins  | maxi.   | ends    | Magn.<br>drop |
|------------|---------|---------|---------|---------------|
|            | h m s   | h m s   | h m s   |               |
| E-2 (1)    | 3 44 57 | 3 48 2  | 3 51 4  | 0.021         |
| E-3 (1)    | 3 45 12 | 3 48 13 | 3 51 13 | 0.020         |
| (1)        | 3 45 25 | 3 48 13 | 3 51 1  | 0.015         |
| G-5 (2)    | 3 45 24 | 3 48 20 | 3 51 3  | 0.011         |

SEPTEMBER 21, 1985

J1 Occults J2 (partial)

| OBSERVATIONS:   |   |    |      |        | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept.     | Elevation  |     | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|-----------------|---|----|------|--------|-----------------------|-------|----------------|-------------|------------|-----|------------------------------|---------------|--------|-------------------------|
|                 | h | m  | s    |        |                       |       |                | Jup.<br>(°) | Sun<br>(°) |     |                              |               |        |                         |
| LA SILLA<br>ESO | 3 | 48 | 32   | 0.022  | -19                   | T     | 50             | PE2         | +56        | -59 | 5.8                          | [1]           | B      | 0.4                     |
|                 |   |    | ± 41 | ±0.012 |                       |       |                |             |            |     |                              |               |        |                         |

J1 OCC J2 21 SEP 1985 (ESO) 1958 PTS



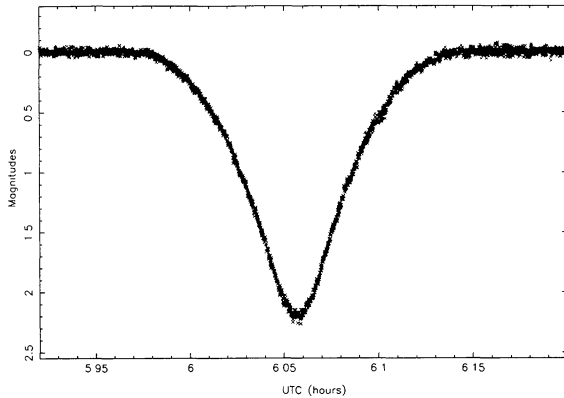
| PREDICTION | begins           | maxi.           | ends            | Magn.<br>drop |
|------------|------------------|-----------------|-----------------|---------------|
| E-2 (1)    | h m s<br>5 57 27 | h m s<br>6 3 14 | h m s<br>6 8 56 | 2.038         |
| E-3 (1)    | 5 57 37          | 6 3 23          | 6 9 4           | 1.983         |
| (1)        | 5 57 37          | 6 3 23          | 6 9 4           | 1.905         |
| G-5<br>(2) | 5 57 36          | 6 3 17          | 6 9 4           | 2.078         |

SEPTEMBER 21, 1985

J1 Eclipses J2 (partial)

| OBSERVATIONS:   |   |   |     |        | (C-0)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|-----------------|---|---|-----|--------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|                 |   |   |     |        |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| LA SILLA<br>ESO | h | m | s   |        |                       |       |                |         |             |            | 5.8                          |               |        |                         |
|                 | 6 | 3 | 25  | 2.193  | -2                    | T     | 50             | PE2     | +27         | -55        |                              | [1]           | B      | 0.4                     |
|                 |   |   | ± 3 | ±0.037 |                       |       |                |         |             |            |                              |               |        |                         |

J1 ECL J2 21 SEP 1985 (ESO) 2480 PTS



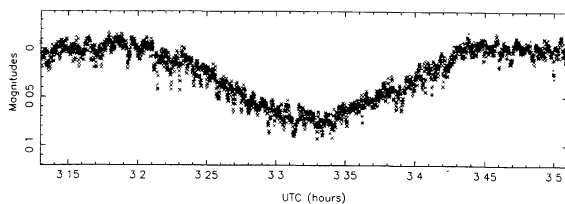
| PREDICTION | begins           | maxi.            | ends             | Magn.<br>drop |
|------------|------------------|------------------|------------------|---------------|
| E-2 (1)    | h m s<br>3 12 16 | h m s<br>3 19 14 | h m s<br>3 26 29 | 0.077         |
| E-3 (1)    | 3 12 30          | 3 19 32          | 3 26 52          | 0.079         |
| (1)        | 3 12 6           | 3 19 6           | 3 26 23          | 0.078         |
| G-5<br>(2) | 3 11 57          | 3 19 27          | 3 26 16          | 0.042         |

SEPTEMBER 22, 1985

J1 Occults J3 (partial)

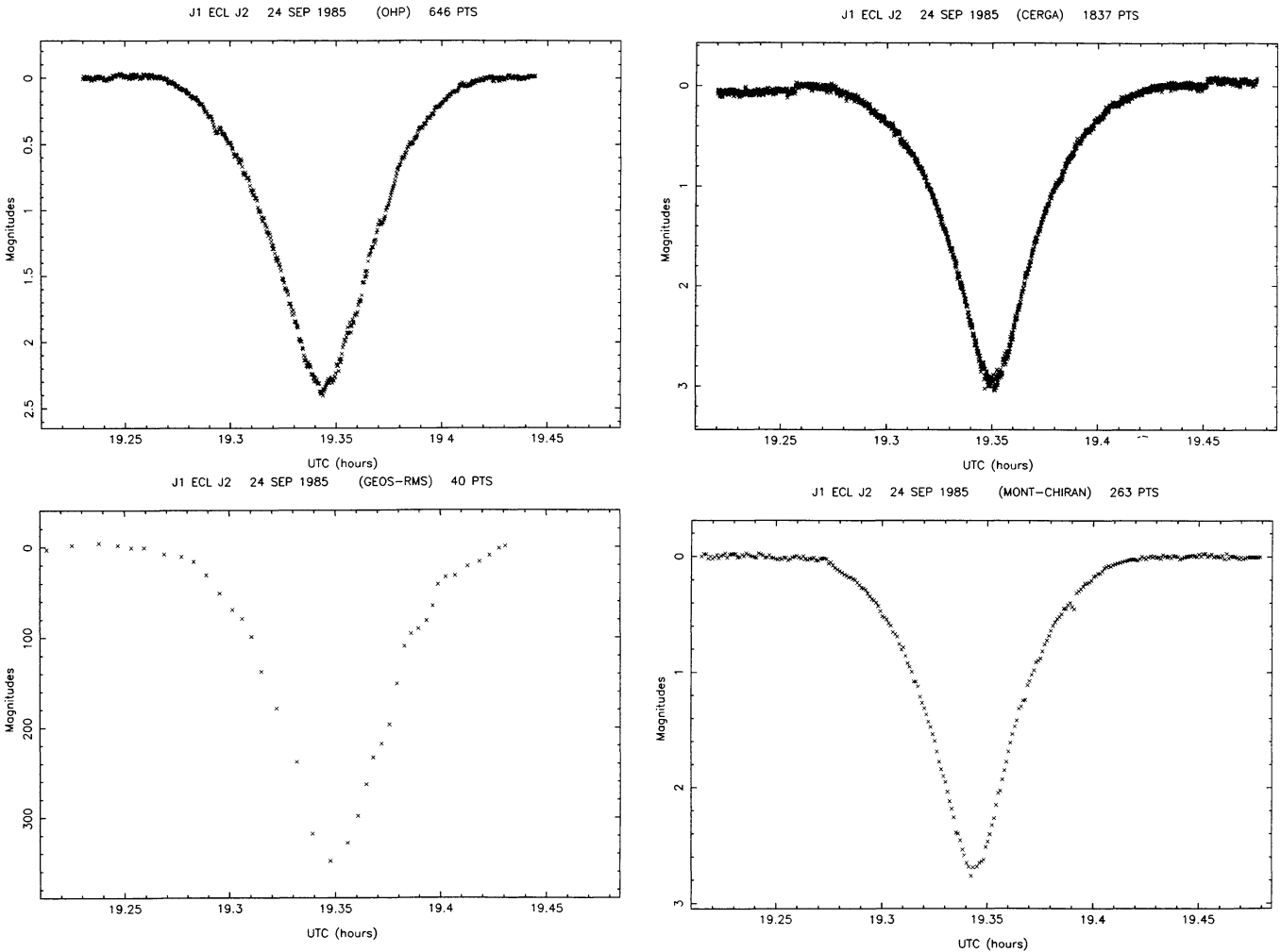
| OBSERVATIONS:   |   |    |      |        | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|-----------------|---|----|------|--------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|                 |   |    |      |        |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| LA SILLA<br>ESO | h | m  | s    |        |                       |       |                |         |             |            | 5.7                          |               |        |                         |
|                 | 3 | 19 | 28   | 0.075  | -22                   | T     | 50             | PE1     | +62         | -55        |                              | [1]           | V      | 0.6                     |
|                 |   |    | ± 38 | ±0.010 |                       |       |                |         |             |            |                              |               |        |                         |

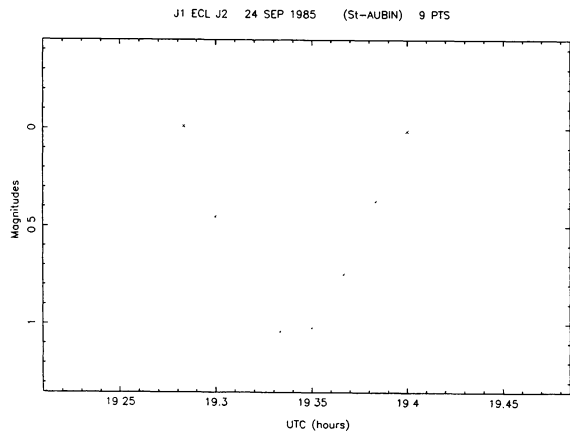
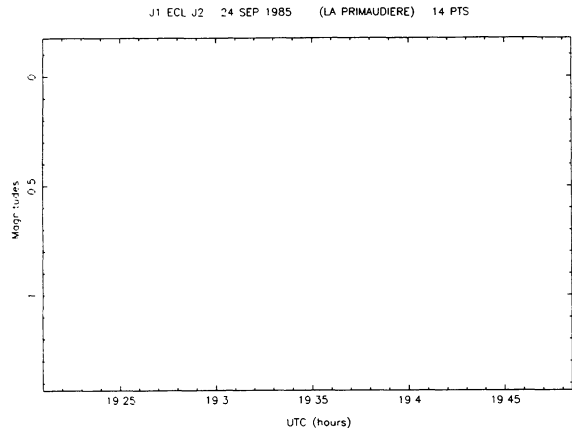
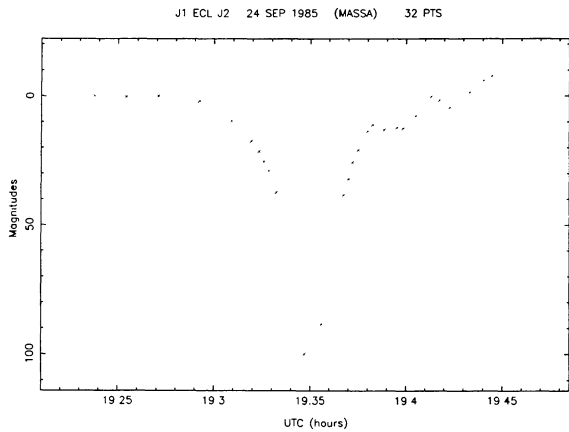
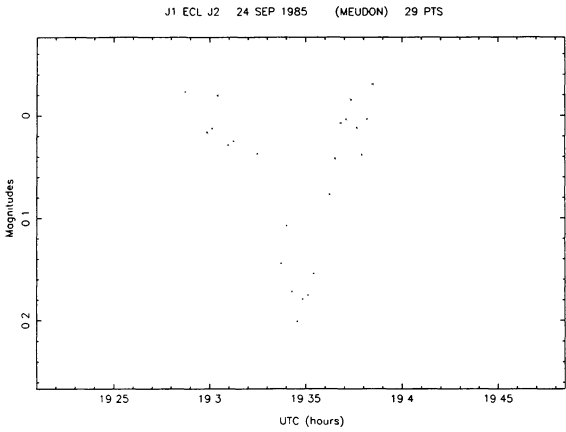
J1 OCC J3 22 SEP 1985 (ESO) 2332 PTS



| PREDICTION               | begins   | maxi.    | ends     | Magn. drop | SEPTEMBER 24, 1985       |       |                |         |             |            |                              |               |        |                         |
|--------------------------|----------|----------|----------|------------|--------------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
| E-2 (1)                  | h m s    | h m s    | h m s    |            | J1 Eclipses J2 (partial) |       |                |         |             |            |                              |               |        |                         |
| E-3 (1)                  | 19 15 11 | 19 20 37 | 19 25 59 | 2.406      |                          |       |                |         |             |            |                              |               |        |                         |
| (1)                      | 19 15 12 | 19 20 37 | 19 25 59 | 2.320      |                          |       |                |         |             |            |                              |               |        |                         |
| G-5 (2)                  | 19 15 11 | 19 20 31 | 19 25 57 | 2.624      |                          |       |                |         |             |            |                              |               |        |                         |
| OBSERVATIONS:            |          |          |          |            | (C-0)<br>G-5<br>(sec)    | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|                          | h        | m        | s        |            |                          |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| OHP                      | 19       | 20       | 39       | 2.309      | - 2                      | T     | 80             | PA      | +26         | -19        | 7.0                          | [1]           | V      | 1.2                     |
|                          |          |          | ± 3      | ±0.041     |                          |       |                |         |             |            |                              |               |        |                         |
| CALERN<br>CERGA - OCA    | 19       | 21       | 1        | 2.939      | -24                      | T     | 150            | PO      | +26         | -21        |                              | [1]           | (*)    | 0.5                     |
|                          |          |          | ± 3      | ±0.074     |                          |       |                |         |             |            |                              |               |        |                         |
| AIX EN PROV.<br>GEOS-RMS | 19       | 20       | 57       | -          | -20                      | T     | 15             | V       | +26         | -19        |                              | [1]           | -      | 21.0                    |
|                          |          |          | ± 3      |            |                          |       |                |         |             |            |                              |               |        |                         |
| MONT-CHIRAN              | 19       | 20       | 37       | 2.713      | 0                        | T     | 100            | PAM     | +26         | -19        |                              | [1]           | V      | 3.6                     |
|                          |          |          | ± 1      | ±0.030     |                          |       |                |         |             |            |                              |               |        |                         |
| MEUDON                   | 19       | 20       | 30       | 0.158      | + 7                      | T     | 60             | PR      | +21         | -16        |                              | [3]           | V      | 14.0                    |
|                          |          |          | ± 13     | ±0.043     |                          |       |                |         |             |            |                              |               |        |                         |
| MASSA                    | 19       | 20       | 56       | -          | +19                      | ?     | 15             | V       | +26         | -20        |                              | ?             | -      | 26.0                    |
|                          |          |          | ± 6      |            |                          |       |                |         |             |            |                              |               |        |                         |
| LA PRIMAUD.              | 19       | 20       | 46       | 1.201      | - 9                      | T     | 32             | PHI     | +20         | -11        |                              | [2]           | -      | 26.0                    |
|                          |          |          | ± 4      | ±0.080     |                          |       |                |         |             |            |                              |               |        |                         |
| SAINT AUBIN              | 19       | 18       | 2        | -          | +155                     | T     | 40             | PHT     | +20         | -13        |                              | [2]           | -      | 40.0                    |

(\*) 400 TO 4100 Å



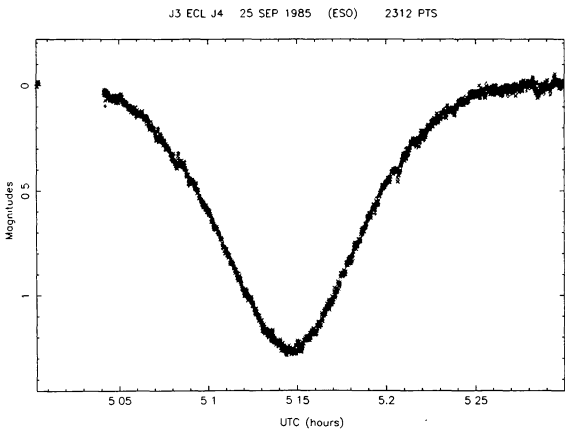


| PREDICTION | begins           | maxi.           | ends             | Magn. drop |
|------------|------------------|-----------------|------------------|------------|
| E-2 (1)    | h m s<br>4 59 56 | h m s<br>5 8 54 | h m s<br>5 17 51 | 1.333      |
| E-3 (1)    | 4 59 59          | 5 8 57          | 5 17 51          | 1.330      |
| (1)        | 5 0 1            | 5 9 0           | 5 17 57          | 1.344      |
| G-5 (2)    | 5 0 1            | 5 8 48          | 5 17 55          | 1.349      |

SEPTEMBER 25, 1985

J3 Eclipses J4 (annular)

| OBSERVATIONS:   |   |   |     | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|-----------------|---|---|-----|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|                 |   |   |     |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| LA SILLA<br>ESO | h | m | s   |                       |       |                |         |             |            | 16.1                         |               |        |                         |
|                 | 5 | 8 | 47  | 1.256                 | +13   | T              | 50      | PE1         | +36        | -59                          | [1]           | V      | 0.5                     |
|                 |   |   | ± 6 | ±0.024                |       |                |         |             |            |                              |               |        |                         |



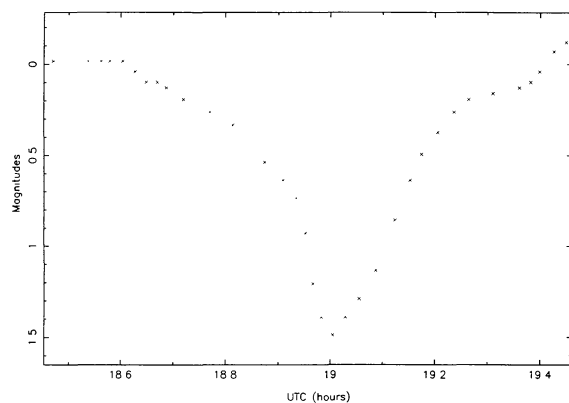
| PREDICTION | begins            | maxi.            | ends              | Magn.<br>drop |
|------------|-------------------|------------------|-------------------|---------------|
| E-2 (1)    | h m s<br>18 28 18 | h m s<br>18 58 3 | h m s<br>19 24 13 | 0.051         |
| E-3 (1)    | 18 29 5           | 18 58 51         | 19 25 3           | 0.052         |
| (1)        | 18 29 57          | 18 59 19         | 19 25 12          | 0.050         |
| G-5<br>(2) | 18 31 58          | 18 58 15         | 19 26 30          | 0.086         |

SEPTEMBER 25, 1985

J3 Occults J2 (partial)

| OBSERVATIONS:           |    |   |            |   | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept.     | Elevation  |     | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|-------------------------|----|---|------------|---|-----------------------|-------|----------------|-------------|------------|-----|------------------------------|---------------|--------|-------------------------|
|                         | h  | m | s          |   |                       |       |                | Jup.<br>(°) | Sun<br>(°) |     |                              |               |        |                         |
| PONT.-COMB.<br>GEOS-LCG | 19 | 1 | 34<br>± 25 | - | -135                  | L     | 6              | V           | +19        | -10 | 4.6                          | [1]           | -      | 101.0                   |

J3 OCC J2 25 SEP 1985 (GEOS-LCG) 37 PTS



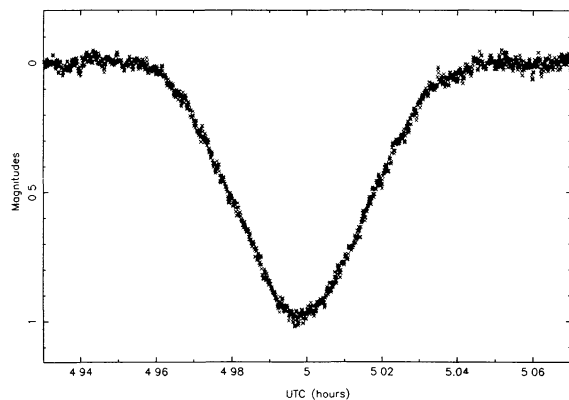
| PREDICTION | begins           | maxi.          | ends            | Magn.<br>drop |
|------------|------------------|----------------|-----------------|---------------|
| E-2 (1)    | h m s<br>4 56 43 | h m s<br>5 0 4 | h m s<br>5 3 25 | 1.204         |
| E-3 (1)    | 4 56 43          | 5 0 4          | 5 3 25          | 1.184         |
| (1)        | 4 56 41          | 5 0 2          | 5 3 24          | 1.220         |
| G-5<br>(2) | 4 56 40          | 4 59 59        | 5 3 23          | 1.213         |

SEPTEMBER 26, 1985

J3 Eclipses J1 (partial)

| OBSERVATIONS: |       |    |     |        | (C-O)        | Inst. | Apert. | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|---------------|-------|----|-----|--------|--------------|-------|--------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|               |       |    |     |        | G-5<br>(sec) |       | (cm)   |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| LA SILLA      | h m s |    |     |        |              |       |        |         |             |            | 2.9                          |               |        |                         |
| ESO           | 4     | 59 | 54  | 0.980  | +8           | T     | 50     | PE1     | +36         | -59        |                              | [1]           | V      | 0.3                     |
|               |       |    | ± 3 | ±0.026 |              |       |        |         |             |            |                              |               |        |                         |

J3 ECL J1 26 SEP 1985 (ESO) 1653 PTS



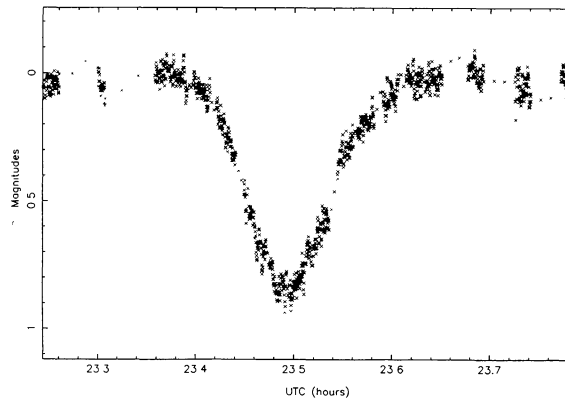
| PREDICTION | begins           | maxi.             | ends             | Magn.<br>drop |
|------------|------------------|-------------------|------------------|---------------|
| E-2 (1)    | h m s<br>23 21 8 | h m s<br>23 29 33 | h m s<br>23 38 0 | 0.801         |
| E-3 (1)    | 23 21 16         | 23 29 41          | 23 38 8          | 0.801         |
| (1)        | 23 21 14         | 23 29 39          | 23 38 5          | 0.792         |
| G-5<br>(2) | 23 21 13         | 23 29 28          | 23 38 5          | 0.762         |

SEPTEMBER 30, 1985

J4 Eclipses J3 (annular)

| OBSERVATIONS:           |    |    |      |        | (C-O)<br>G-5<br>(sec) | Inst.      | Apert.<br>(cm) | Recept. | Elevation |     | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|-------------------------|----|----|------|--------|-----------------------|------------|----------------|---------|-----------|-----|------------------------------|---------------|--------|-------------------------|
|                         | h  | m  | s    |        | Jup.<br>(°)           | Sun<br>(°) |                |         |           |     |                              |               |        |                         |
| BARCELONA<br>GEA-MOLLET | 23 | 29 | 32   | 0.843  | +7                    | T          | 41             | PM      | +12       | -51 | 13.2                         | [2]           | V      | 1.8                     |
|                         |    |    | ± 16 | ±0.064 |                       |            |                |         |           |     |                              |               |        |                         |

J4 ECL J3 30 SEP 1985 (GEA-MOLLET) 1094 PTS



| PREDICTION | begins           | maxi.            | ends              | Magn.<br>drop |
|------------|------------------|------------------|-------------------|---------------|
| E-2 (1)    | h m s<br>19 1 17 | h m s<br>19 6 25 | h m s<br>19 11 33 | 1.629         |
| E-3 (1)    | 19 1 24          | 19 6 32          | 19 11 40          | 1.629         |
| (1)        | 19 1 31          | 19 6 40          | 19 11 48          | 1.664         |
| G-5<br>(2) | 19 1 33          | 19 6 35          | 19 11 46          | 1.676         |

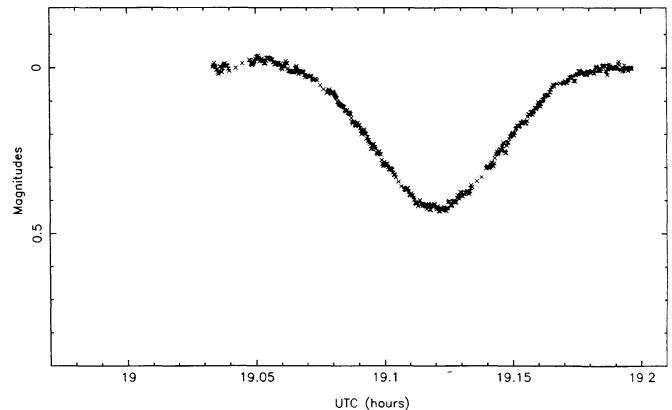
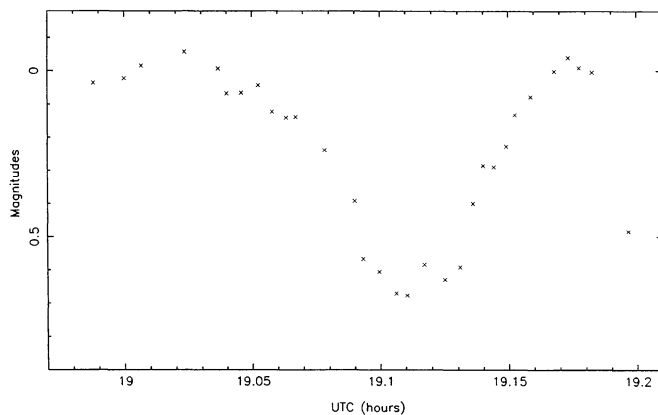
OCTOBER 1, 1985

J4 Eclipses J2 (annular)

| OBSERVATIONS: |    |   |            | (C-0)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |      |
|---------------|----|---|------------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|------|
|               | h  | m | s          |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |      |
| ZOETERMEER    | 19 | 6 | 33<br>± 16 | 0.612<br>±0.107       | +7    | T              | 30      | PP          | +18        | -17                          | 5.6           | [1]    | -                       | 27.0 |
| CATANIA       | 19 | 7 | 12<br>± 35 | 0.318<br>±0.011       | -32   | T              | 91      | PC1         | +23        | -20                          |               | [2]    | V                       | 1.0  |

J4 ECL J2 01 OCT 1985 (ZOETERMEER) 36 PTS

J4 ECL J2 01 OCT 1985 (CATANIA) 511 PTS

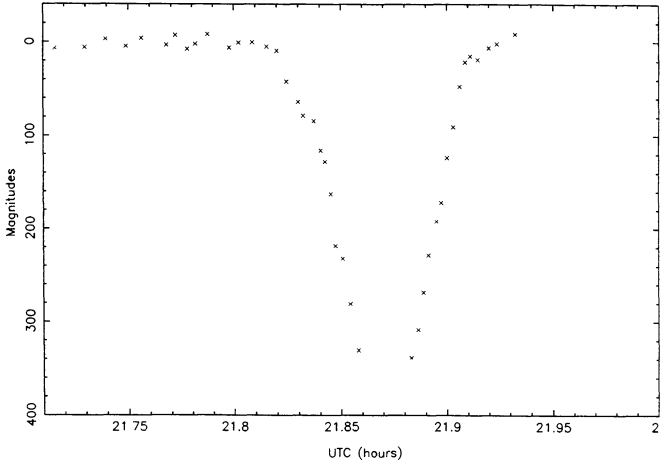


| PREDICTION | begins           | maxi.            | ends              | Magn.<br>drop |
|------------|------------------|------------------|-------------------|---------------|
| E-2 (1)    | h m s<br>21 47 9 | h m s<br>21 52 0 | h m s<br>21 56 52 | 3.169         |
| E-3 (1)    | 21 47 16         | 21 52 8          | 21 56 59          | 3.149         |
| (1)        | 21 47 17         | 21 52 9          | 21 57 0           | 3.130         |
| G-5<br>(2) | 21 47 19         | 21 52 4          | 21 56 54          | 3.921         |

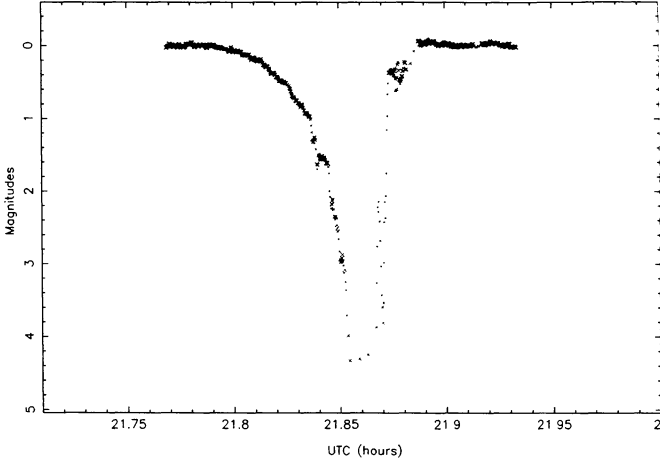
OCTOBER 1, 1985  
J1 Eclipses J2 (annular)

| OBSERVATIONS:            |    |    |                     | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |      |
|--------------------------|----|----|---------------------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|------|
|                          |    |    |                     |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |      |
| AIX EN PROV.<br>GEOS-RMS | h  | m  | s                   | -                     | -6    | T              | 15      | V           | +20        | -44                          | 7.0           | [3]    | -                       | 21.0 |
| CATANIA                  | 21 | 51 | 5                   | 0.708<br>±0.022       | +64   | T              | 91      | PC1         | +20        | -53                          |               | [1]    | V                       | 1.0  |
| SAINT AUBIN              | 21 | 51 | 46                  | -                     | +23   | T              | 40      | PHT         | +22        | -30                          |               | [2]    | -                       | 40.0 |
|                          |    |    | ± 3<br>± 13<br>± 65 |                       |       |                |         |             |            |                              |               |        |                         |      |

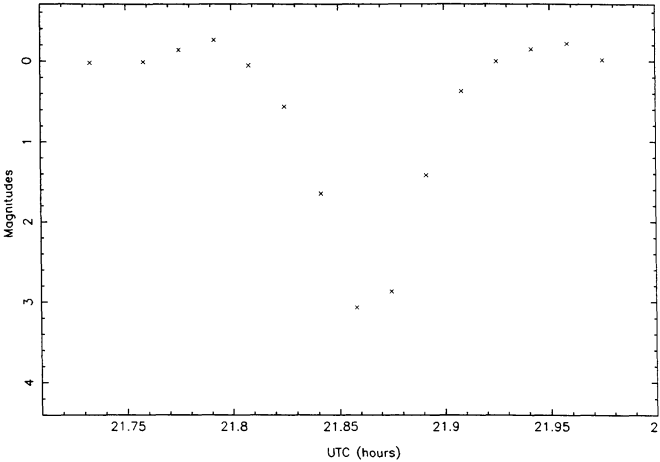
J1 ECL J2 01 OCT 1985 (AIX-EN-P : GEOS-RMS) 43 PTS



J1 ECL J2 01 OCT 1985 (CATANE) 593 PTS



J1 ECL J2 01 OCT 1985 (St-AUBIN) 16 PTS



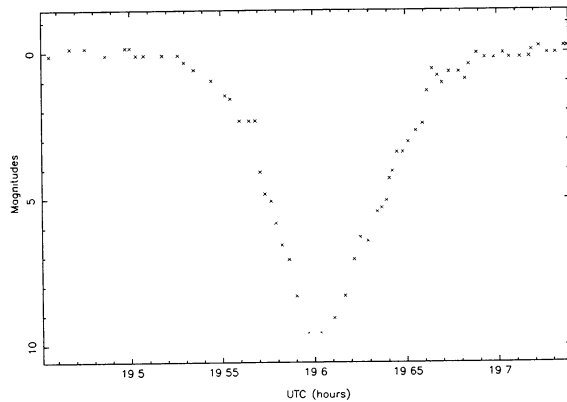
| PREDICTION | begins   | maxi.    | ends     | Magn. drop |
|------------|----------|----------|----------|------------|
|            | h m s    | h m s    | h m s    |            |
| E-2 (1)    | 19 27 13 | 19 35 45 | 19 44 2  | 1.997      |
| E-3 (1)    | 19 27 16 | 19 35 48 | 19 44 4  | 1.990      |
| (1)        | 19 27 30 | 19 36 02 | 19 44 18 | 1.997      |
| G-5 (2)    | 19 27 35 | 19 35 53 | 19 44 15 | 2.086      |

OCTOBER 2, 1985

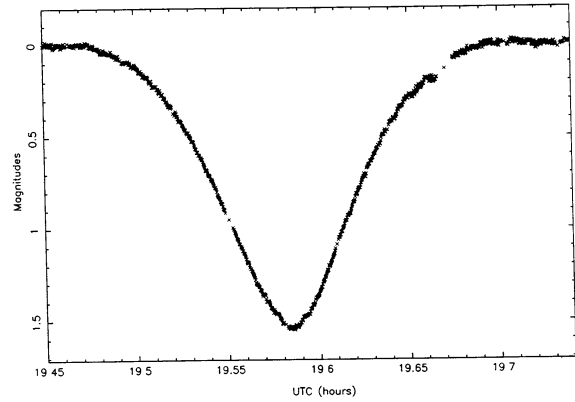
J4 Eclipses J1 (annular)

| OBSERVATIONS: |          |  |        | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|---------------|----------|--|--------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|               | h m s    |  |        |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| MASSA         | 19 36 12 |  | -      | -10                   | L     | 6              | V       | +26         | -29        | 5.4                          | [1]           | -      | 16.0                    |
| CATANIA       | 19 35 0  |  | 0.668  | +62                   | T     | 91             | PC1     | +32         | -33        |                              | [1]           | V      | 1.0                     |
|               | ± 4      |  | ±0.011 |                       |       |                |         |             |            |                              |               |        |                         |
|               | ± 49     |  |        |                       |       |                |         |             |            |                              |               |        |                         |

J4 ECL J1 02 OCT 1985 (MASSA) 64 PTS



J4 ECL J1 02 OCT 1985 (CATANIA) 1140 PTS



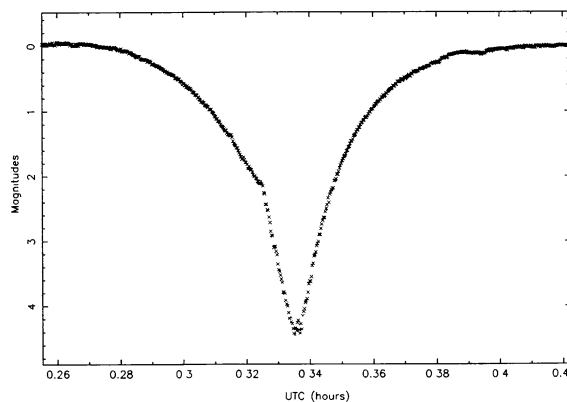
| PREDICTION | begins  | maxi.   | ends    | Magn. drop |
|------------|---------|---------|---------|------------|
|            | h m s   | h m s   | h m s   |            |
| E-2 (1)    | 0 15 27 | 0 19 57 | 0 24 19 | 2.397      |
| E-3 (1)    | 0 15 40 | 0 20 4  | 0 24 27 | 2.468      |
| (1)        | 0 15 41 | 0 20 6  | 0 24 28 | 2.544      |
| G-5 (2)    | 0 15 42 | 0 20 1  | 0 24 26 | 2.936      |

OCTOBER 9, 1985

J1 Eclipses J2 (partial)

| OBSERVATIONS: |        |  |        | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|---------------|--------|--|--------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|               | h m s  |  |        |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| BRASOPOLIS    | 0 20 9 |  | 4.377  | -3                    | T     | 60             | PB      | +65         | -43        | 7.0                          | [1]           | V      | 1.0                     |
|               | ± 1    |  | ±0.063 |                       |       |                |         |             |            |                              |               |        |                         |

J1 ECL J2 09 OCT 1985 (BRASOPOLIS) 602 PTS

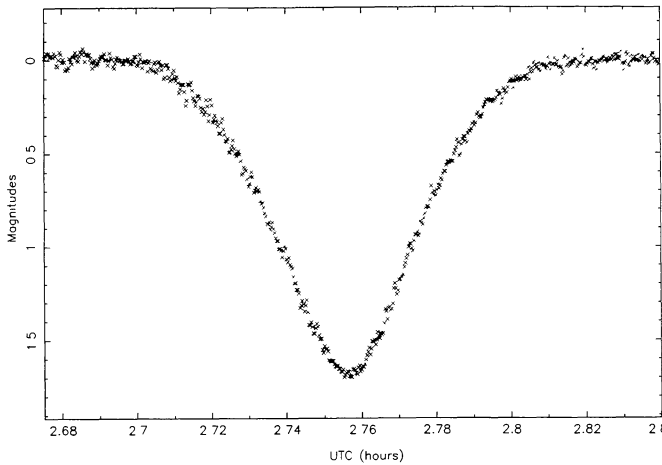


| PREDICTION | begins           | maxi.            | ends             | Magn.<br>drop |
|------------|------------------|------------------|------------------|---------------|
| E-2 (1)    | h m s<br>2 42 12 | h m s<br>2 46 12 | h m s<br>2 50 10 | 0.540         |
| E-3 (1)    | 2 42 19          | 2 46 18          | 2 50 17          | 1.600         |
| (1)        | 2 41 25          | 2 45 25          | 2 49 24          | 1.644         |
| G-5 (2)    | 2 41 24          | 2 45 19          | 2 49 23          | 1.757         |

OCTOBER 16, 1985  
J1 Eclipses J2 (partial)

| OBSERVATIONS: |   |    |     |                 | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|---------------|---|----|-----|-----------------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|               | h | m  | s   |                 |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
| BRASOPOLIS    | 2 | 45 | 23  |                 | +2                    | T     | 60             | PB      | +26         | -59        | 6.9                          | [1]           | V      | 1.0                     |
|               |   |    | ± 2 |                 |                       |       |                |         |             |            |                              |               |        |                         |
|               |   |    |     | 1.681<br>±0.030 |                       |       |                |         |             |            |                              |               |        |                         |

J1 ECL J2 16 OCT 1985 (BRASOPOLIS) 569 PTS

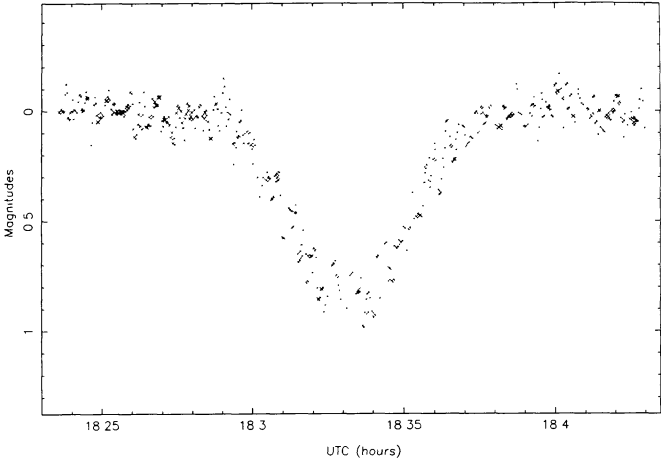


| PREDICTION | begins            | maxi.             | ends              | Magn.<br>drop |
|------------|-------------------|-------------------|-------------------|---------------|
| E-2 (1)    | h m s<br>18 16 30 | h m s<br>18 19 54 | h m s<br>18 23 17 | 0.737         |
| E-3 (1)    | 18 16 36          | 18 20 0           | 18 23 24          | 0.770         |
| (1)        | 18 16 37          | 18 20 2           | 18 23 27          | 0.792         |
| G-5<br>(2) | 18 16 36          | 18 19 55          | 18 23 26          | 0.793         |

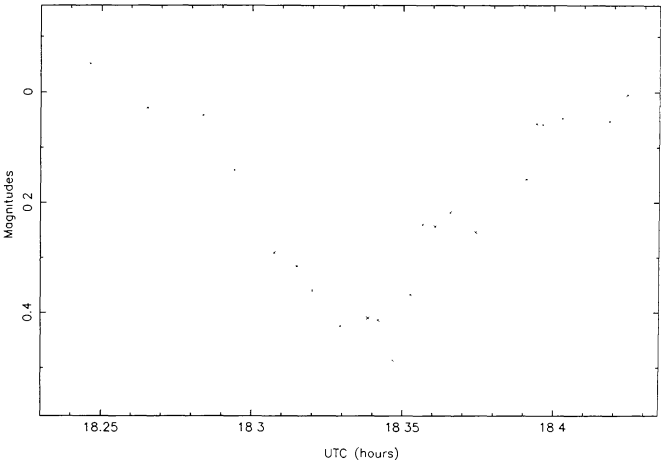
OCTOBER 26, 1985  
J1 Eclipses J2 (partial)

| OBSERVATIONS: |    |      |    | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br><br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |      |
|---------------|----|------|----|-----------------------|-------|--------------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|------|
|               |    |      |    |                       |       |                    |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |      |
| MEUDON        | h  | m    | s  | 0.849                 | + 4   | T                  | 105     | N           | +22        | -17                          | 6.8           | [2]    | -                       | 1.3  |
|               | 18 | 19   | 58 | ±0.160                |       |                    |         |             |            |                              |               |        |                         |      |
| ZOETERMEER    |    | ± 15 |    |                       |       |                    |         |             |            |                              |               |        |                         |      |
|               | 18 | 20   | 1  | 0.425                 | + 1   | T                  | 30      | PP          | +18        | -18                          |               | [2]    | -                       | 26.0 |
|               |    | ± 14 |    | ±0.071                |       |                    |         |             |            |                              |               |        |                         |      |
| BOUGIVAL      |    |      |    |                       |       |                    |         |             |            |                              |               |        |                         |      |
| GEOS-FND      | 18 | 20   | 10 | -                     | - 8   | T                  | 11      | V           | +22        | -17                          |               | [1]    | -                       | 10.0 |
|               |    | ± 5  |    |                       |       |                    |         |             |            |                              |               |        |                         |      |
| SAINT AUBIN   | 18 | 20   | 0  | -                     | + 2   | T                  | 40      | PHT         | +22        | -15                          |               | [1]    | -                       | 35.0 |
|               |    | ± 25 |    |                       |       |                    |         |             |            |                              |               |        |                         |      |

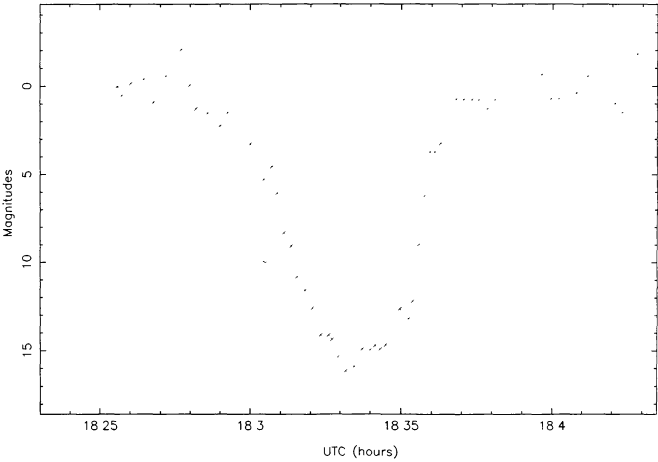
J1 ECL J2 26 OCT 1985 (MEUDON) 543 PTS



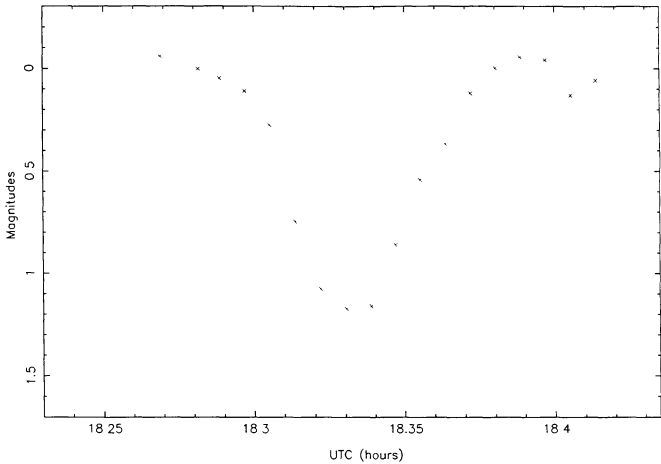
J1 ECL J2 26 OCT 1985 (ZOETERMEER) 27 PTS



J1 ECL J2 26 OCT 1985 (GEOS-FND) 70 PTS



J1 ECL J2 26 OCT 1985 (St-AUBIN) 19 PTS

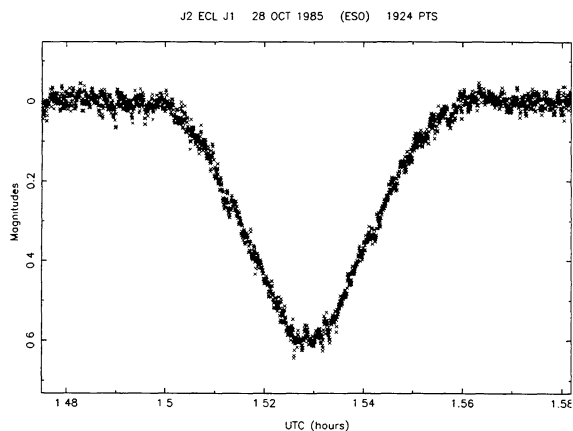


| PREDICTION | begins  | maxi.   | ends    | Magn.<br>drop |
|------------|---------|---------|---------|---------------|
|            | h m s   | h m s   | h m s   |               |
| E-2 (1)    | 1 29 32 | 1 31 49 | 1 34 7  | 0.673         |
| E-3 (1)    | 1 29 34 | 1 31 52 | 1 34 10 | 0.661         |
| (1)        | 1 29 35 | 1 31 52 | 1 34 10 | 0.649         |
| G-5<br>(2) | 1 29 35 | 1 31 48 | 1 34 9  | 0.629         |

|               |       |    |     |  |  |  |  |  |  |  |  |  |        |
|---------------|-------|----|-----|--|--|--|--|--|--|--|--|--|--------|
| OBSERVATIONS: |       |    |     |  |  |  |  |  |  |  |  |  |        |
|               |       |    |     |  |  |  |  |  |  |  |  |  |        |
| LA SILLA      | h m s |    |     |  |  |  |  |  |  |  |  |  |        |
| ESO           | 1     | 31 | 44  |  |  |  |  |  |  |  |  |  | 0.601  |
|               |       |    | ± 4 |  |  |  |  |  |  |  |  |  | ±0.027 |

OCTOBER 28, 1985

J2 Eclipses J1 (partial)

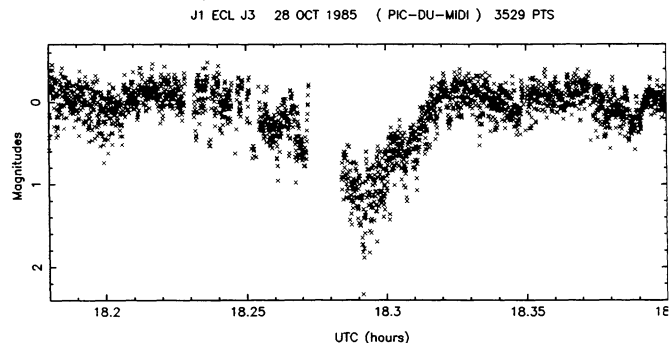
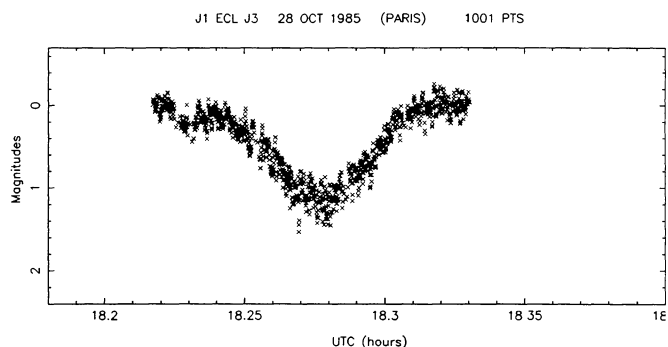


| PREDICTION | begins   | maxi.    | ends     | Magn.<br>drop |
|------------|----------|----------|----------|---------------|
|            | h m s    | h m s    | h m s    |               |
| E-2 (1)    | 18 13 36 | 18 17 8  | 18 20 39 | 0.639         |
| E-3 (1)    | 18 13 42 | 18 17 13 | 18 20 45 | 0.645         |
| (1)        | 18 13 37 | 18 17 8  | 18 20 39 | 0.637         |
| G-5<br>(2) | 18 13 36 | 18 16 59 | 18 20 38 | 0.617         |

|               |    |    |      |        |  |  |  |  |  |  |  |  |  |
|---------------|----|----|------|--------|--|--|--|--|--|--|--|--|--|
| OBSERVATIONS: |    |    |      |        |  |  |  |  |  |  |  |  |  |
|               |    |    |      |        |  |  |  |  |  |  |  |  |  |
| PARIS         | h  | m  | s    |        |  |  |  |  |  |  |  |  |  |
|               | 18 | 16 | 38   | 1.138  |  |  |  |  |  |  |  |  |  |
|               |    |    | ± 13 | ±0.235 |  |  |  |  |  |  |  |  |  |
| PIC DU MIDI   | 18 | 17 | 17   | -      |  |  |  |  |  |  |  |  |  |
|               |    |    | ± 18 |        |  |  |  |  |  |  |  |  |  |

OCTOBER 28, 1985

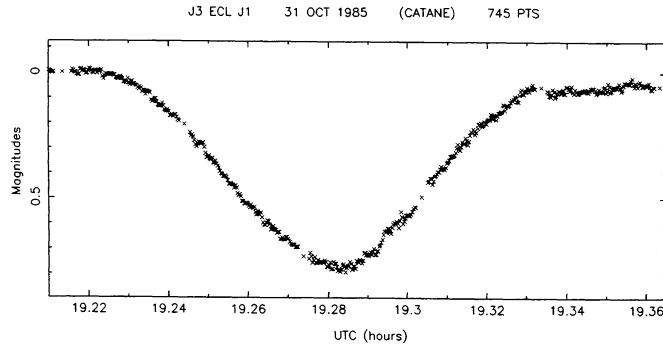
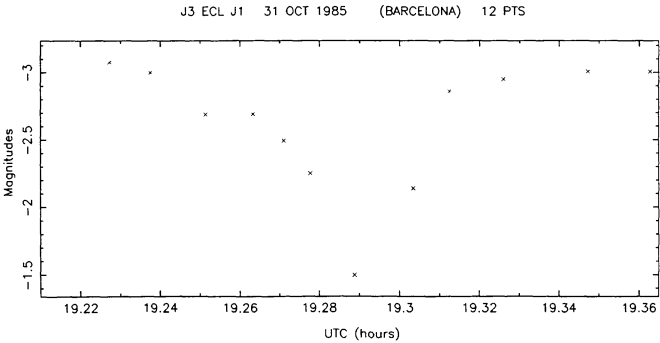
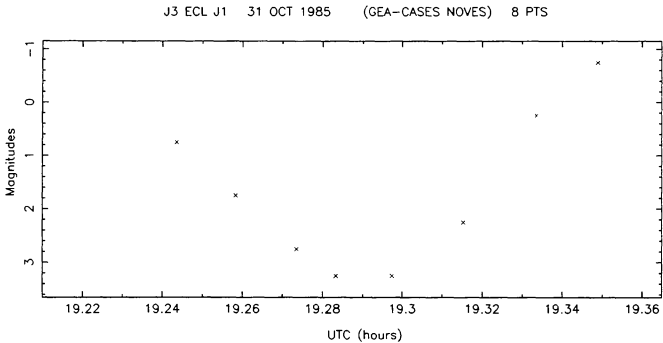
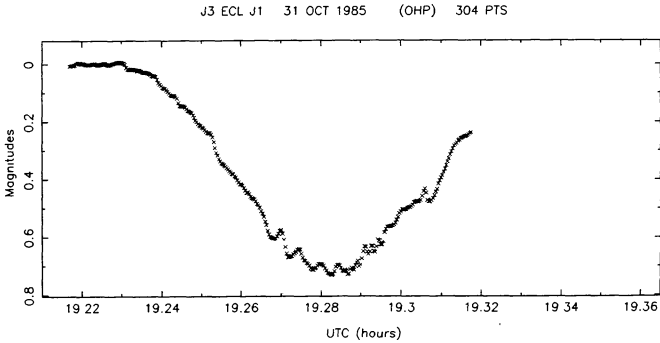
J1 Eclipses J3 (annular)



| PREDICTION | begins            | maxi.            | ends              | Magn. drop |
|------------|-------------------|------------------|-------------------|------------|
| E-2 (1)    | h m s<br>19 12 46 | h m s<br>19 17 7 | h m s<br>19 21 31 | 0.781      |
| E-3 (1)    | 19 12 46          | 19 17 7          | 19 21 26          | 0.779      |
| (1)        | 19 12 42          | 19 17 3          | 19 21 26          | 0.775      |
| G-5 (2)    | 19 12 41          | 19 16 56         | 19 21 25          | 0.740      |

OCTOBER 31, 1985  
J3 Eclipses J1 (partial)

| OBSERVATIONS: |    |    |    | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br><br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |      |  |
|---------------|----|----|----|-----------------------|-------|--------------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|------|--|
|               |    |    |    |                       |       |                    |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |      |  |
| OHP           | h  | m  | s  | 0.713                 | + 7   | T                  | 80      | PA          | +24        | -30                          | 5.5           | [2]    | V                       | 1.2  |  |
|               | 19 | 16 | 56 | ±0.016                |       |                    |         |             |            |                              |               |        |                         |      |  |
| CASES NOVES   |    | ±  | 3  | -                     | -25   | T                  | 30      | V           | +27        | -28                          |               | [?]    | -                       | 44.0 |  |
|               | 19 | 17 | 28 |                       |       |                    |         |             |            |                              |               |        |                         |      |  |
| BARCELONA     |    | ±  | 1  |                       |       |                    |         |             |            |                              |               |        |                         |      |  |
|               | 19 | 17 | 8  | -                     | - 5   | L                  | 6       | V           | +27        | -28                          |               | [?]    | -                       | 54.0 |  |
|               |    | ±  | 23 |                       |       |                    |         |             |            |                              |               |        |                         |      |  |
| CATANIA       | 19 | 16 | 17 | 0.411                 | +46   | T                  | 91      | PC1         | +26        | -38                          |               | [1]    | V                       | 1.0  |  |
|               |    | ±  | 10 | ±0.011                |       |                    |         |             |            |                              |               |        |                         |      |  |



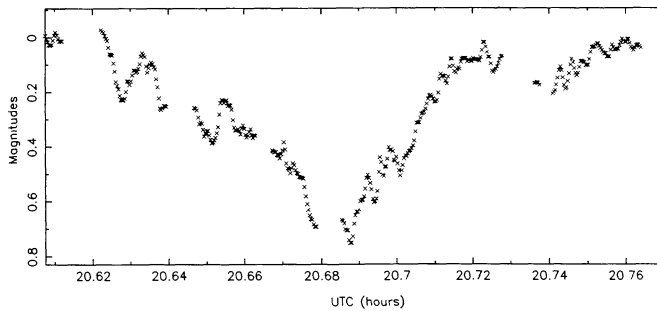
| PREDICTION | begins            | maxi.            | ends             | Magn.<br>drop |
|------------|-------------------|------------------|------------------|---------------|
| E-2 (1)    | h m s<br>20 38 00 | h m s<br>20 41 0 | h m s<br>20 44 0 | 0.411         |
| E-3 (1)    | 20 38 05          | 20 41 7          | 20 44 7          | 0.432         |
| (1)        | 20 38 08          | 20 41 9          | 20 44 10         | 0.446         |
| G-5<br>(2) | 20 38 6           | 20 41 3          | 20 44 9          | 0.427         |

NOVEMBER 2, 1985

J1 Eclipses J2 (partial)

| OBSERVATIONS: |    |    |   | (C-0)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |     |
|---------------|----|----|---|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|-----|
|               |    |    |   |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |     |
| OHP           | h  | m  | s |                       |       |                |         |             |            |                              |               |        |                         |     |
|               | 20 | 41 | 2 | 0.677                 | -7    | T              | 80      | PA          | +14        | -45                          | 6.6           | [2]    | V                       | 1.6 |
|               |    | ±  | 4 | ±0.047                |       |                |         |             |            |                              |               |        |                         |     |

J1 ECL J2 02 NOV 1985 (OHP) 358 PTS



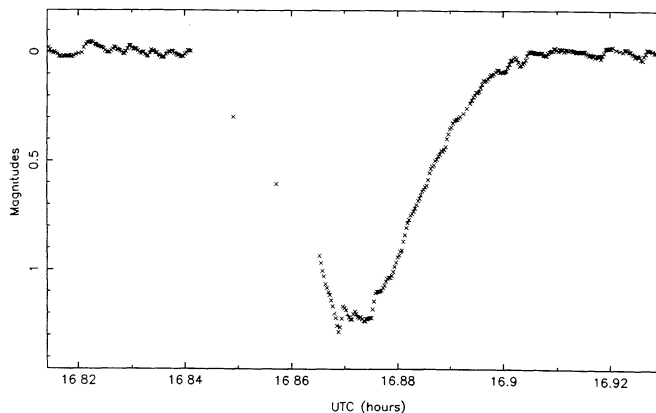
| PREDICTION | begins           | maxi.             | ends              | Magn.<br>drop |
|------------|------------------|-------------------|-------------------|---------------|
| E-2 (1)    | h m s<br>16 50 3 | h m s<br>16 52 29 | h m s<br>16 54 55 | 1.091         |
| E-3 (1)    | 16 50 6          | 16 52 32          | 16 54 58          | 1.090         |
| (1)        | 16 50 6          | 16 52 32          | 16 54 58          | 1.074         |
| G-5<br>(2) | 16 50 6          | 16 52 28          | 16 54 56          | 1.120         |

NOVEMBER 7, 1985

J2 Eclipses J1 (annular)

| OBSERVATIONS: |    |    |    | (C-0)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |     |
|---------------|----|----|----|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|-----|
|               |    |    |    |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |     |
| CATANIA       | h  | m  | s  |                       |       |                |         |             |            |                              |               |        |                         |     |
|               | 16 | 52 | 20 | 1.200                 | +12   | T              | 91      | PC1         | +33        | -11                          | 3.3           | [1]    | v                       | 1.0 |
|               |    | ±  | 7  | ±0.030                |       |                |         |             |            |                              |               |        |                         |     |

J2 ECL J1 07 NOV 1985 (CATANIA) 418 PTS



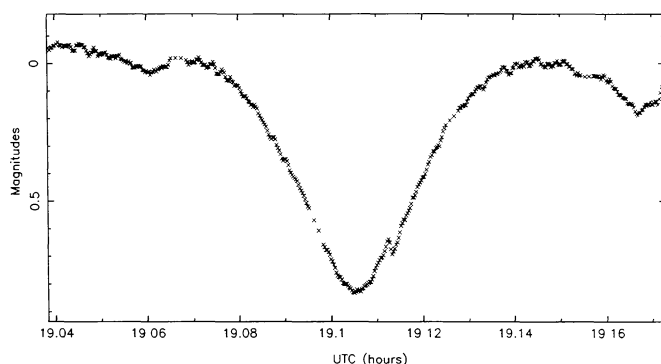
| PREDICTION | begins          | maxi.            | ends             | Magn.<br>drop |
|------------|-----------------|------------------|------------------|---------------|
| E-2 (1)    | h m s<br>19 4 1 | h m s<br>19 6 30 | h m s<br>19 8 59 | 1.175         |
| E-3 (1)    | 19 4 4          | 19 6 33          | 19 9 1           | 1.175         |
| (1)        | 19 4 4          | 19 6 33          | 19 9 2           | 1.175         |
| G-5<br>(2) | 19 4 5          | 19 6 29          | 19 9 0           | 1.270         |

NOVEMBER 14, 1985

J2 Eclipses J1 (annular)

| OBSERVATIONS: |    |   |           | (C-0)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |     |
|---------------|----|---|-----------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|-----|
|               | h  | m | s         |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |     |
| CATANIA       | 19 | 6 | 18<br>±18 | 0.820<br>±0.015       | +15   | T              | 91      | PC1         | +21        | -39                          | 3.5           | [1]    | V                       | 1.0 |

J2 ECL J1 14 NOV 1985 (CATANIA) 481 PTS



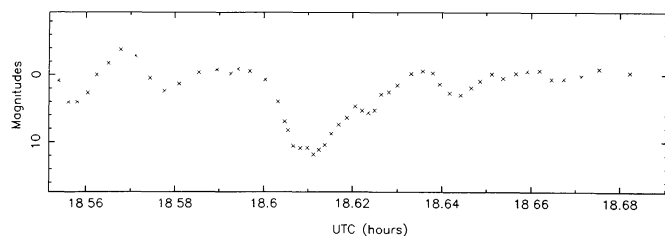
| PREDICTION | begins            | maxi.             | ends              | Magn.<br>drop |
|------------|-------------------|-------------------|-------------------|---------------|
| E-2 (1)    | h m s<br>18 32 26 | h m s<br>18 34 35 | h m s<br>18 36 43 | 0.009         |
| E-3 (1)    | 18 32 34          | 18 34 44          | 18 36 53          | 0.009         |
| (1)        | 18 32 21          | 18 34 34          | 18 36 47          | 0.010         |
| G-5<br>(2) | 18 32 23          | 18 34 30          | 18 36 41          | 0.004         |

NOVEMBER 18, 1985

J2 Eclipses J3 (penumbra)

| OBSERVATIONS:        |    |    |           | (C-0)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept.     | Elevation  |     | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |     |
|----------------------|----|----|-----------|-----------------------|-------|----------------|-------------|------------|-----|------------------------------|---------------|--------|-------------------------|-----|
|                      | h  | m  | s         |                       |       |                | Jup.<br>(°) | Sun<br>(°) |     |                              |               |        |                         |     |
| BOUGIVAL<br>GEOS-FND | 18 | 36 | 47<br>± 7 | -                     | -133  | T              | 11          | V          | +19 | -24                          | 1.6           | ?      | -                       | 9.0 |

J2 ECL J3 18 NOV 1985 (GEOS-FND) 54 PTS



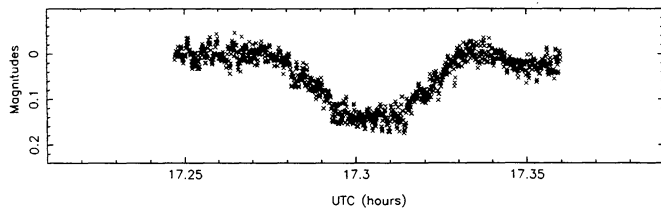
| PREDICTION | begins            | maxi.             | ends              | Magn.<br>drop |
|------------|-------------------|-------------------|-------------------|---------------|
| E-2 (1)    | h m s<br>17 16 26 | h m s<br>17 18 12 | h m s<br>17 19 58 | 0.095         |
| E-3 (1)    | 17 16 34          | 17 18 18          | 17 20 2           | 0.089         |
| (1)        | 17 16 38          | 17 18 21          | 17 20 4           | 0.086         |
| G-5<br>(2) | 17 16 38          | 17 18 25          | 17 20 4           | 0.069         |

DECEMBER 4, 1985

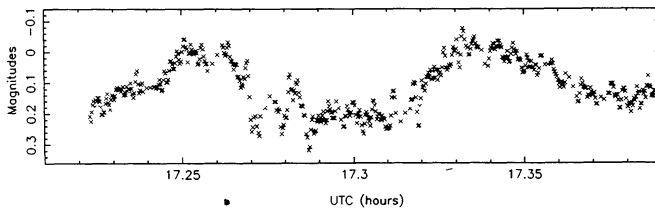
J1 Occults J2 (partial)

| OBSERVATIONS:            |    |    |            | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |
|--------------------------|----|----|------------|-----------------------|-------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|
|                          |    |    |            |                       |       |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |
|                          | h  | m  | s          |                       |       |                |         |             |            | 4.7                          |               |        |                         |
| CALERN<br>CERGA - OCA    | 17 | 18 | 17<br>± 9  | 0.147<br>±0.027       | + 4   | T              | 150     | PO          | +25        | -15                          | [2]           | V      | 0.4                     |
| BARCELONA<br>MOLLET      | 17 | 17 | 44<br>± 19 | 0.224<br>±0.061       | +37   | T              | 41      | PM          | +28        | -10                          | [3]           | V      | 1.2                     |
| AIX EN PROV.<br>GEOS-RMS | 17 | 18 | 5<br>± 33  | -                     | +16   | T              | 15      | V           | +25        | -13                          | [1]           | -      | 38.0                    |
| CATANIA                  | 17 | 18 | 14<br>± 28 | 0.084<br>0.011        | + 7   | T              | 91      | PC1         | +27        | -19                          | [1]           | V      | 1.0                     |

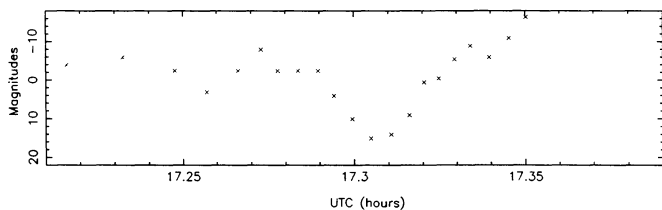
J1 OCC J2 04 DEC 1985 (CALERN) 1018 PTS



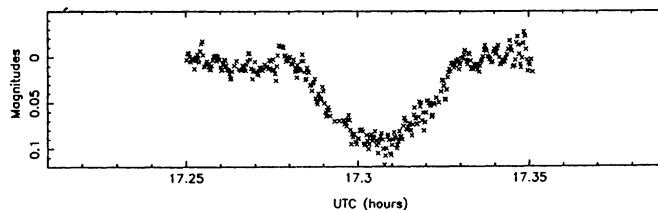
J1 OCC J2 04 DEC 1985 (MOLLET : GEA) 504 PTS



J1 OCC J2 04 DEC 1985 (AIX-EN-P : GEOS-RMS) 28 PTS



J1 OCC J2 04 DEC 1985 (CATANIA) 336 PTS

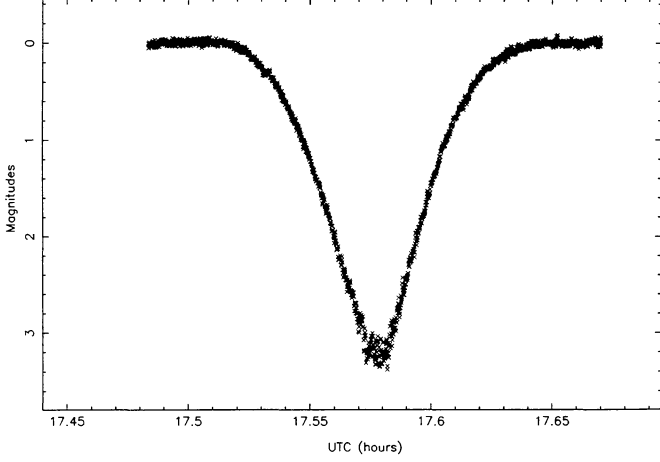
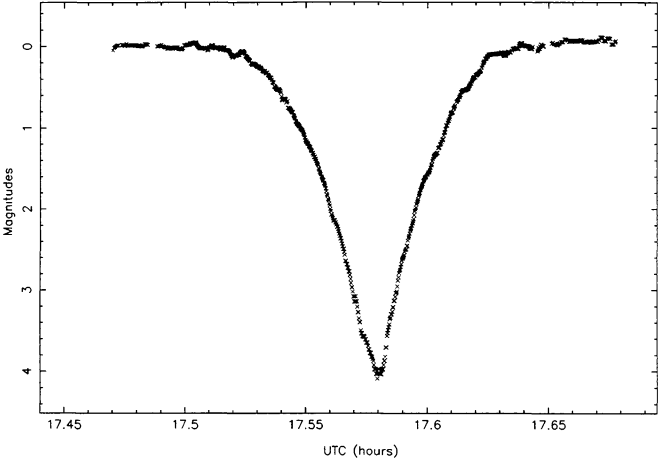


| PREDICTION    |          |          |          | Magn.<br>drop         | DECEMBER 14, 1985<br>J3 Eclipses J2 (annular) |                |         |             |            |                              |               |        |                         |  |
|---------------|----------|----------|----------|-----------------------|-----------------------------------------------|----------------|---------|-------------|------------|------------------------------|---------------|--------|-------------------------|--|
| begins        | maxi.    |          | ends     |                       |                                               |                |         |             |            |                              |               |        |                         |  |
| h m s         | h m s    | h m s    | h m s    |                       |                                               |                |         |             |            |                              |               |        |                         |  |
| E-2 (1)       | 17 29 51 | 17 34 37 | 17 39 21 | 4.490                 |                                               |                |         |             |            |                              |               |        |                         |  |
| E-3 (1)       | 17 29 57 | 17 34 43 | 17 39 27 | 4.490                 |                                               |                |         |             |            |                              |               |        |                         |  |
| (1)           | 17 29 55 | 17 34 41 | 17 39 25 | 4.490                 |                                               |                |         |             |            |                              |               |        |                         |  |
| G-5 (2)       | 17 29 57 | 17 34 39 | 17 39 24 | 5.741                 |                                               |                |         |             |            |                              |               |        |                         |  |
| OBSERVATIONS: |          |          |          | (C-0)<br>G-5<br>(sec) | Inst.                                         | Apert.<br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in Rj | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |  |
|               |          |          |          |                       |                                               |                |         | Jup.<br>(°) | Sun<br>(°) |                              |               |        |                         |  |
| TERAMO        |          |          |          |                       |                                               |                |         |             |            | 5.6                          |               |        |                         |  |
| 17 34 46      |          |          |          | 4.070                 | -5                                            | T              | 40      | PT          | +20        | -20                          | [1]           | V      | 1.0                     |  |
| ± 21          |          |          |          | ±3.506                |                                               |                |         |             |            |                              |               |        |                         |  |
| CALERN        |          |          |          |                       |                                               |                |         |             |            |                              |               |        |                         |  |
| CERGA - OCA   |          |          |          |                       |                                               |                |         |             |            |                              |               |        |                         |  |
| 17 34 41      |          |          |          | 3.265                 | 0                                             | T              | 150     | PO          | +21        | -17                          | [1]           | (*)    | 0.4                     |  |
| ± 6           |          |          |          | ±0.134                |                                               |                |         |             |            |                              |               |        |                         |  |
| BARCELONA     |          |          |          |                       |                                               |                |         |             |            |                              |               |        |                         |  |
| MOLLET        |          |          |          |                       |                                               |                |         |             |            |                              |               |        |                         |  |
| 17 34 50      |          |          |          | 4.390                 | -9                                            | T              | 41      | PM          | +25        | -12                          | [2]           | V      | 1.3                     |  |
| ± 4           |          |          |          | ±0.257                |                                               |                |         |             |            |                              |               |        |                         |  |
| MONT-CHIRAN   |          |          |          |                       |                                               |                |         |             |            |                              |               |        |                         |  |
| 17 34 45      |          |          |          | 3.744                 | -4                                            | T              | 100     | PAM         | +21        | -16                          | [2]           | V      | 18.0                    |  |
| ± 1           |          |          |          | ±0.061                |                                               |                |         |             |            |                              |               |        |                         |  |
| AIX EN PROV.  |          |          |          |                       |                                               |                |         |             |            |                              |               |        |                         |  |
| GEOS-RMS      |          |          |          |                       |                                               |                |         |             |            |                              |               |        |                         |  |
| 17 34 37      |          |          |          | -                     | +4                                            | T              | 15      | V           | +21        | -16                          | [1]           | -      | 23.0                    |  |
| ± 5           |          |          |          |                       |                                               |                |         |             |            |                              |               |        |                         |  |
| VARS          |          |          |          |                       |                                               |                |         |             |            |                              |               |        |                         |  |
| GEOS-FGR      |          |          |          |                       |                                               |                |         |             |            |                              |               |        |                         |  |
| 17 34 50      |          |          |          | -                     | -9                                            | T              | 20      | V           | +21        | -16                          | [2]           | -      | 10.0                    |  |
| ± 3           |          |          |          |                       |                                               |                |         |             |            |                              |               |        |                         |  |
| CATANIA       |          |          |          |                       |                                               |                |         |             |            |                              |               |        |                         |  |
| 17 33 50      |          |          |          | -                     | +51                                           | T              | 91      | PC1         | +22        | -21                          | [1]           | V      | 1.0                     |  |
| ± 70          |          |          |          |                       |                                               |                |         |             |            |                              |               |        |                         |  |

(\*) 400 to 4100 Å

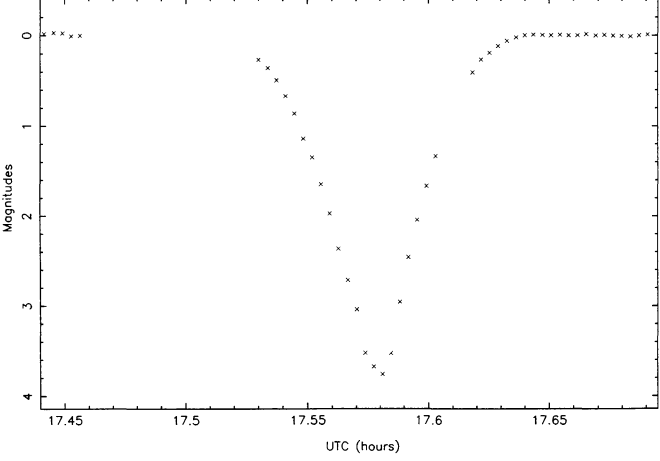
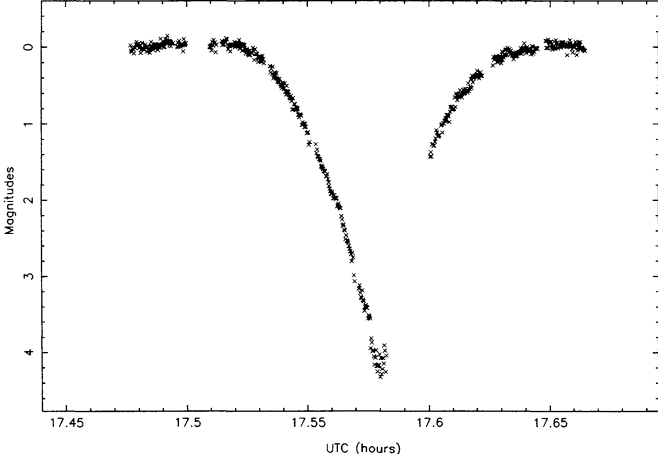
J3 ECL J2 14 DEC 1985 (TERAMO) 732 PTS

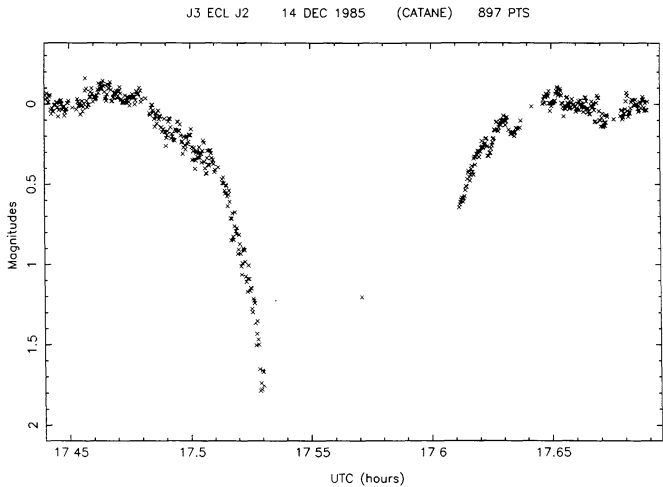
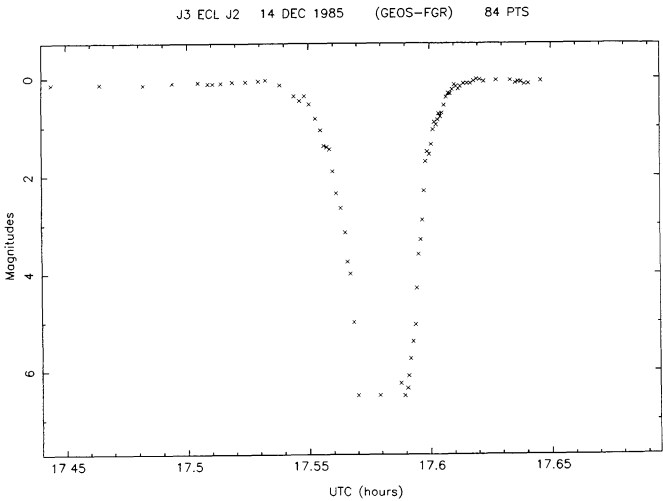
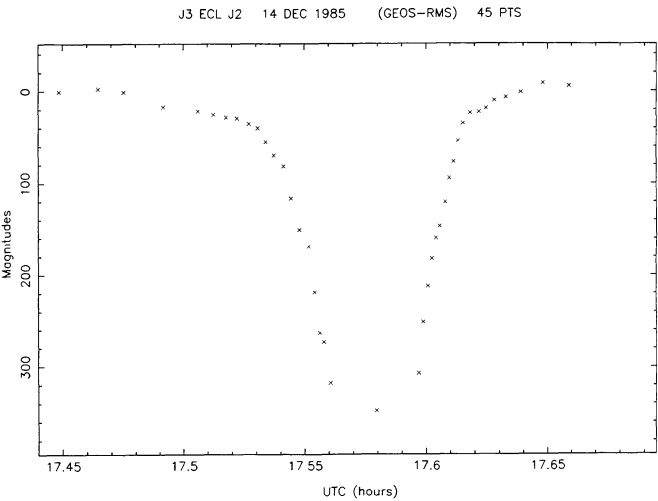
J3 ECL J2 14 DEC 1985 (CERGA) 1681 PTS



J3 ECL J2 14 DEC 1985 (GEA-MOLLET) 506 PTS

J3 ECL J2 14 DEC 1985 (MONT CHIRAN) 58 PTS





| PREDICTION | begins  | maxi.    | ends     | Magn.<br>drop |
|------------|---------|----------|----------|---------------|
|            | h m s   | h m s    | h m s    |               |
| E-2 (1)    | 17 9 47 | 17 12 7  | 17 14 24 | 0.293         |
| E-3 (1)    | 17 9 52 | 17 12 10 | 17 14 28 | 0.294         |
| (1)        | 17 9 51 | 17 12 10 | 17 14 28 | 0.308         |
| G-5 (2)    | 17 9 49 | 17 12 6  | 17 14 28 | 0.277         |

DECEMBER 16, 1985

J2 Eclipses J1 (partial)

| OBSERVATIONS: |    |    |     | (C-O)<br>G-5<br>(sec) | Inst. | Apert.<br><br>(cm) | Recept. | Elevation   |            | Dist.<br>to<br>Jup.<br>in R <sub>J</sub> | Obs.<br>Cond. | Filter | Time<br>inter.<br>(sec) |      |
|---------------|----|----|-----|-----------------------|-------|--------------------|---------|-------------|------------|------------------------------------------|---------------|--------|-------------------------|------|
|               |    |    |     |                       |       |                    |         | Jup.<br>(°) | Sun<br>(°) |                                          |               |        |                         |      |
| MONT-CHIRAN   | h  | m  | s   | 0.218                 | +13   | T                  | 100     | PAM         | +23        | -12                                      | 4.2           | [2]    | V                       | 9.1  |
|               | 17 | 11 | 57  | ±0.017                |       |                    |         |             |            |                                          |               |        |                         |      |
|               |    |    | ± 4 |                       |       |                    |         |             |            |                                          |               |        |                         |      |
| BARCELONA     | h  | m  | s   | 0.344                 | +16   | T                  | 41      | PM          | +26        | - 9                                      |               | [2]    | V                       | 1.4  |
| GEA-MOLLET    | 17 | 11 | 54  | ±0.041                |       |                    |         |             |            |                                          |               |        |                         |      |
|               |    |    | ± 7 |                       |       |                    |         |             |            |                                          |               |        |                         |      |
| AIX EN PROV.  | h  | m  | s   | -                     | +24   | T                  | 15      | V           | +23        | -12                                      |               | [1]    | -                       | 26.0 |
| GEOS-RMS      | 17 | 11 | 46  |                       |       |                    |         |             |            |                                          |               |        |                         |      |
|               |    |    | ± 5 |                       |       |                    |         |             |            |                                          |               |        |                         |      |

