

## NAME OF THE INSTRUMENT: SUNSHINE RECORDER

### ➤ BRIGHT SUNSHINE DURATION:

- Sunshine duration is a climatological indicator, measuring duration of sunshine in a given period for a given location.

### ➤ PURPOSE OF MEASUREMENT:

- Crops convert solar energy into chemical energy during the process of photosynthesis and transpiration. These processes required much energy.
- Since, the recording of solar radiation required sophisticated and advanced costly instruments such as pyrenometer and potentiometric recorder etc.
- Solar radiation can be estimated by using the bright sunshine duration data.

### ➤ UNIT OF BRIGHT SUNSHINE:

- Hours

### ➤ LEAST COUNT:

- 0.1 hour or 6 minutes

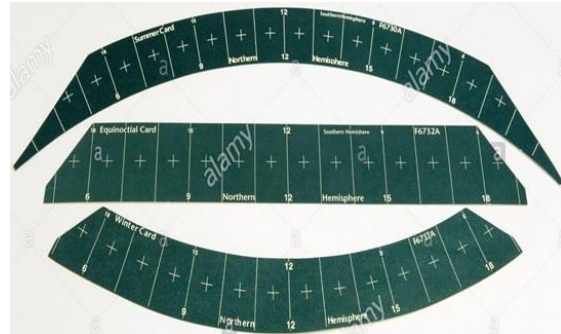
### ➤ TIME OF OBSERVATIONS:

- Remove the burnt card in the evening after sunset.
- Insert the new card in the appropriate groove before sunrise or after sunset.

### ➤ DETAILS OF EQUIPMENT:

- The name of instrument is Campbell Stokes sunshine recorder.
- The instrument consists of a glass sphere of 10 cm diameter, mounted concentrically in a section of a spherical bowl.
- Three overlapping pairs of grooves are provided in the bowl to take cards suitable for different seasons of the year.
- Short curve cards are inserted on the upper groove in winter season from 15<sup>th</sup> October to end of February.

- Long curve cards are inserted on the lower groove in summer season from 12<sup>th</sup> April to 2<sup>nd</sup> September.
- Straight cards are inserted on the middle groove during equinoxes from 3<sup>rd</sup> September to 14<sup>th</sup> October and 1<sup>st</sup> March to 11<sup>th</sup> April.



### ➤ INSTALLATION:

- The instrument is installed on a masonry pillar of 10 ft (3.04 m) above ground.
- The sphere is supported on the bowl according to the latitude of the station.

### ➤ PRINCIPLE:

- The action of the recorder depends upon the burning of the card due to heat of the sun, which are focused on the card through the glass sphere.
- The cards burn linearly because some chemical treatment is given to the cards.



- The total length of the burn is measured with the help of a time scale to obtain the duration of sunshine.