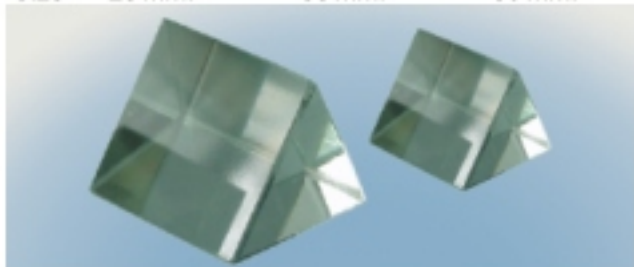


PRISM, LENSES AND MAGNIFIERS

PR-347 PRISM GLASS EQUILATERAL

Non-optically worked with polished faces, edges slightly bevelled. Nominal angles 60 x 60 x 60 deg.

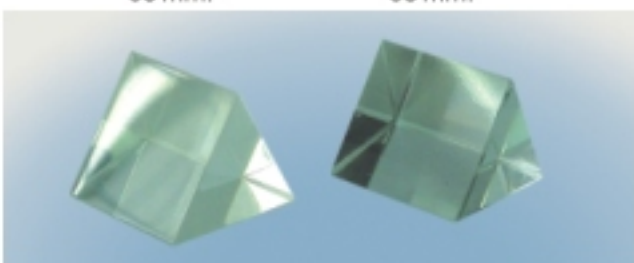
Size 25 mm. 38 mm. 50 mm.



PR-348 PRISM ACRYLIC EQUILATERAL

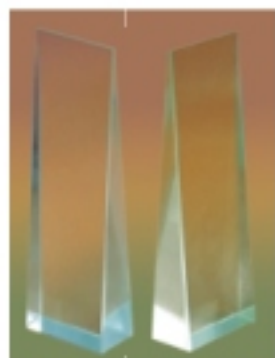
Clear acrylic polished surfaces, 60 x 60 deg.

Length	Face
38 mm.	38 mm.
50 mm.	50 mm.
63 mm.	63 mm.



PR-349 PAIR OF NARROW PRISM

Designed to provide a progression of ideas from the principles of refraction in prism to the properties of lenses. Each glass prism is in the form of a narrow isosceles triangles 10x60x20mm. base, heights, thickness. When place base to base a convex lens may be simulated, and a concave lens when vertex to vertex.



PR-350 LENSES, SET OF SIX

50 mm. diameter with ground and polished faces and ground edges. One each of double convex, plano-convex, converging concave-convex, diverging concave-concave, double concave, plano-concave. Supplied in box.



PR-351 MAGNIFIER, READING GLASS

In metal frame and handle, chrome plated, packed in cardboard box.

Diameter	Focal Length	Magnification
50 mm.	10 cm.	3.5x
50 mm.	12 cm.	3x
50 mm.	20 cm.	2.25x
60 mm.	10 cm.	3.5x
60 mm.	15 cm.	2.5x
60 mm.	20 cm.	2.25x
75 mm.	15 cm.	2.5x
75 mm.	20 cm.	2.25x
100 mm.	15 cm.	2.5x
100 mm.	20 cm.	2.25x
125 mm.	30 cm.	1.83x
150 mm.	30 cm.	1.83x



PR-352 MAGNIFIER, READING GLASS

In metal frame and bakelite handle, chrome plated, packed in cardboard box.

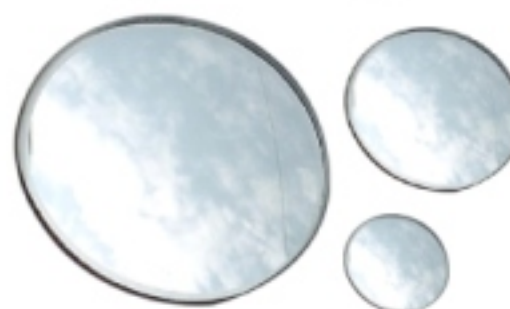
Diameter	Focal Length	Magnification
50 mm.	10 cm.	3.5x
50 mm.	12 cm.	3x
50 mm.	20 cm.	2.25x
60 mm.	10 cm.	3.5x
60 mm.	15 cm.	2.5x
60 mm.	20 cm.	2.25x
75 mm.	15 cm.	2.5x
75 mm.	20 cm.	2.25x
100 mm.	15 cm.	2.5x
100 mm.	20 cm.	2.25x



PR-353 CONCAVE MIRROR, GLASS

Optically worked, silvered back with protective coating.

Dia. mm	Focal Length mm.
50	50
50	75
50	100
50	150
50	200
50	300
75	50
75	75
75	100
75	150
75	200
75	300



PR-354 CONVEX MIRROR, GLASS

Optically worked, silvered back with protective coating.

Dia. mm	Focal Length mm.
50	50
50	75
50	100
50	150
50	200
50	300
75	50
75	75
75	100
75	150
75	200
75	300



MIRRORS

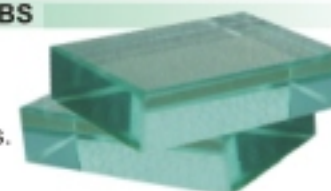
PR-355 CONCAVE MIRROR, GLASS

Optically worked, silvered back with protective coating.



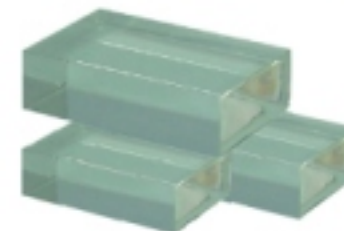
PR-356 GLASS SLABS

Clear glass with ground ends and optically worked faces.



PR-357 ACRYLIC BLOCK, RECTANGULAR

Clear acrylic all faces fully polished.
Size 75x50x18 mm.
Size 100x65x18 mm.
Size 115x65x18 mm.
Size 125x65x18 mm.



PR-358 ACRYLIC BLOCK, SEMI CIRCULAR

Clear acrylic, all faces fully polished.
Dia. x Thickness
90 x 16 mm.
90 x 25 mm.



PR-359 GLASS BLOCK, SEMI CIRCULAR

Clear glass, all faces fully polished.
Dia. x Thickness
90 x 16 mm.



MIRRORS AND LENS HOLDER

PR-360 MAGNIFIER

Fitted in plastic frame, superior quality.



PR-361 MAGNIFIER, FOLDING

Gowland type Plano-convex lens of extra white glass. Unbreakable plastic lens holder and aluminium anodized cover. Magnification 10x. Regular quality & Superior quality



PR-362 HAND MAGNIFIER

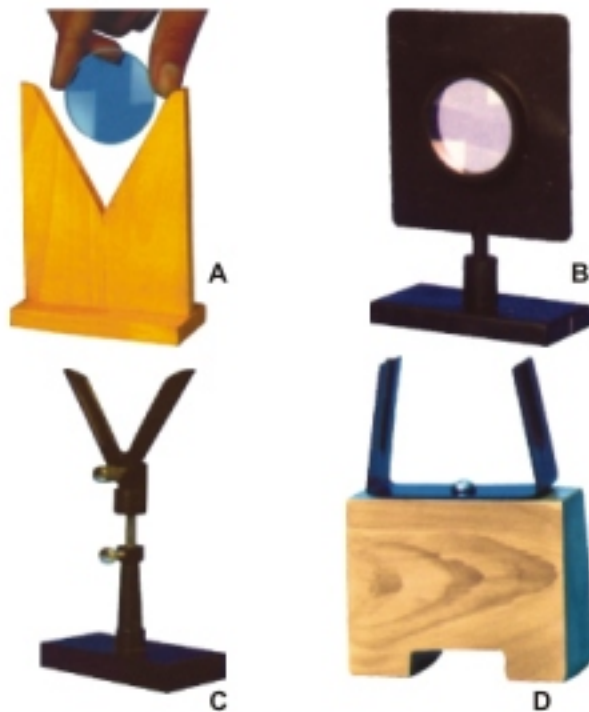
A high quality X30 magnification instrument with built-in illumination and a retractable condenser / daylight filter slide. Accurate focusing is facilitated by the provision of a rotary control, supplied complete with lens - ended bulb and protective case but without batteries.



PR-363 LENS HOLDER

Wooden, to take lenses or mirrors up to 76mm diameter. Comprising an upright 100mm high, with a V shape slot to hold a convex or concave lens, mounted on a rectangular base 100x50mm. An index mark is engraved on each end of the base.

- A. **Lens Holder** : Comprising metal holder with sides grooved to hold lens or mirror of 50mm diameter.
- B. **Lens Holder** : Round made of unbreakable PVC material, to take lens or mirror of 50mm diameter.
- C. **Lens Holder** : Cast light metal, for lenses upto 25mm to 63mm diameter, with V-arms mounted on stem 9.5mm diameter.
- D. **Lens Holder** : Spring pattern, to hold lens or mirror of 50mm diameter, V-groove in centre of holder. Mounted on 6mm metal rod which fits into standard optical bench mounts and stands. Supplied with bakelite base.



PR-364 PLANE MIRRORS, GLASS MOUNTED

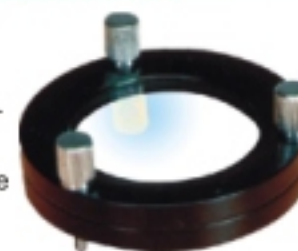
Silvered back with protective coating, mounted on wooden block 20 mm. thick approximately.

- 75 x 25 mm.
- 75 x 50 mm.
- 100 x 75 mm.
- 150 x 25 mm.
- 150 x 50 mm.



PR-365 NEWTON'S RING APPARATUS

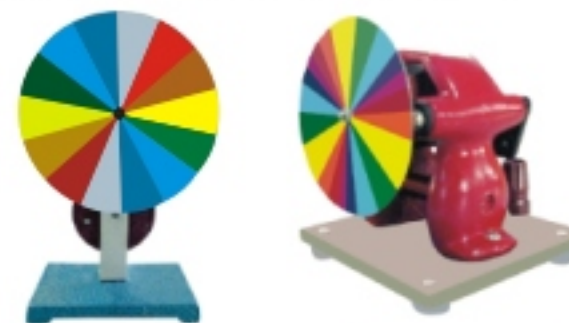
Pair of glass plate, optically polished, one plane the other plano-convex mounted together in metal frame. Pressure between plates adjustable by three brass nickel plated screws.



PR-366 NEWTON'S COLOUR DISC

As above, but with metal disc 200mm, mounted on metal stand and driven by belt with the help of driving wheel fitted with a handle, can be clamped on table.

Newton's Colour Disc Motorised are also available, as per picture motor mechanism.



HAND DRIVEN

MOTOR MECHANISM

PR-367 DIRECT VISION SPECTROSCOPE

RDV-1 A complete and light weight direct vision spectroscopy without wavelength scale, for observing visible radiations from 400 to 750 nm.

RDV-2 A compact visible spectroscopy with wavelength scale which allows the direct reading of spectral length and employs a prism for dispersion. It is also useful for flame test of basic radicals (sodium, strontium, potassium, copper etc.) There is a single eyepiece and independent focussing tube for the graticule, which carries an index at 590nm. with "D", marked right below the scale, (corresponding to the wave length of sodium light) can be calibrated to a known light source by adjustment of knurled screw. The amount of light admitted to the spectroscopy can be regulated by a variable slit, adjusted by a knurled ring round the rating tube.



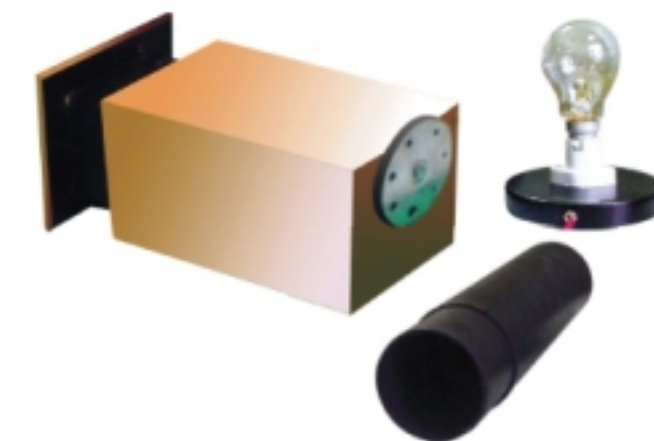
RDV-2

RDV-1

LIGHT COLOUR

PR-368 PIN HOLE CAMERA

To illustrate images produced by small apertures. Comprising a polished wooden box with a ground glass screen at one end and a hole at the other.



PR-369 TOTAL INTERNAL REFLECTION APPARATUS

To demonstrate the total internal reflection in a perspex tube is form of (1) turn coil whose dia. about (120) mm; dia. of the tube in a perspex tube about (8) mm. Fitted on the wooden board with laser source.



LIGHT REFLECTED UNDER DARK CONDITION

PR-370 RAY BOX

A ventilated lamp house having an open front with extended sides finned externally for heat dissipation and vertical internal grooves to accommodate a slit plate and cylindrical lens. It has a light source comprising 12 volts, 21 watts lamps in a holder with one meter of twin flex having banana plugs. Complete with metal plate having single and triple slits and whitened on one side and other side black matt. Operates on 12 volts power supply. Without lens.

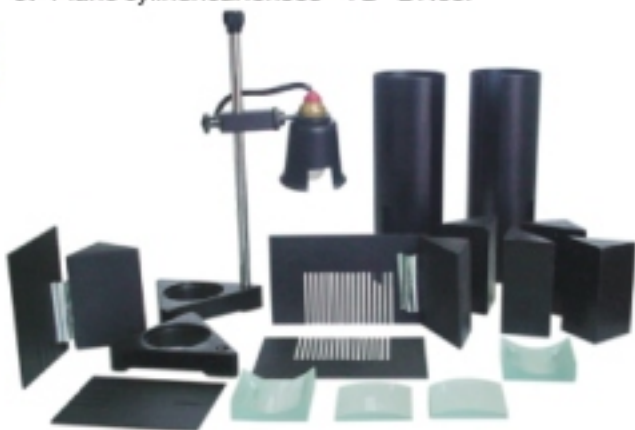


RAY OPTIC KIT

PR-371 RAY OPTIC KIT

A versatile kit of components for ray optics experiments. Investigations possible include linear propagation of light rays, focusing of rays by cylindrical lenses, focusing of multiple rays showing aberration, law of reflection, refraction in water, prisms etc. Containing the following:

- A. Lamp holder of 12V-24W lamp and stands - 2 Nos.
- B. Housing shields - 1 Pair
- C. Combined single and triple slit plate - 2 Nos.
- D. Multiple slit combs - 2 Nos.
- E. Holders for combs and slit plates - 2 Nos.
- F. Wooden light barriers - 4 Nos.
- G. Plano cylindrical lenses + 7D - 4 Nos.
- H. Plano cylindrical lenses + 10D - 2 Nos.
- I. Plano cylindrical lenses + 17D - 2 Nos.
- J. Plano cylindrical lenses + 7D - 2 Nos.



PR-372 LAMP AND STAND

Comprising a 12 volt, 24 watts lamp in a conical lamp house mounted on an adjustable boss. The lamphouse has cut-outs on its side, giving a clear passage for the light while restricting the amount of stray illumination. The assembly is supported on a rod with a triangular cast base.



PR-373 HOUSING SHIELDS WITH SLOTS



Used to eliminate extraneous light from the lamphouses, they are provided as a right and left handed pair of metal, in open-ended cylindrical form, open length-wise to pass over the lamphouse boss and with a slot at one end to permit the light to pass. Finished in matt black.

PR-374 SLIT PLATE, SINGLE, TRIPLE AND MULTIPLE SLIT COMB

A metal plate with single slit cut into one edge and three slits. Centres cut into the opposite edge. Finished in matt black.



PR-375 HOLDER FOR SLIT PLATES

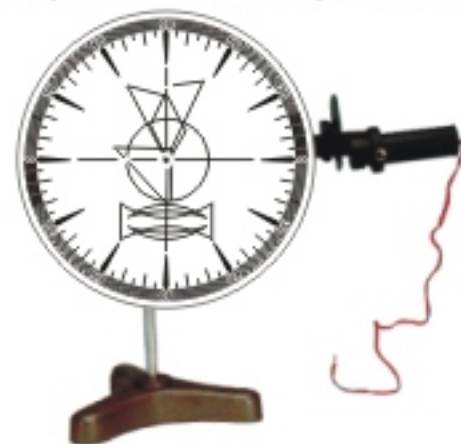
A wooden block, triangular in section with a spring clip, to hold the slit plate, attached to one face. Finished in matt black.



PR-376 HARTLEY'S OPTICAL DISC ROTATABLE

A 30 cm. diameter white painted steel disc marked from 0 to 360° at every 1°, with center mark, on a stable cast iron base. The main disc and the lamp house (with 12V, 24W bulb) can be rotated and held in any desired position. With the lamp house, a rotatable disc with single, double, triple and quadruple slits and with adjustable lens carrier with lens for divergent, parallel or convergent light beams is provided. Optical elements provided for reflection are 50x25mm. plane glass mirror and a polished plated metal cylindrical mirror. Optical element for refraction are semicircular, bi-convex, bi-concave, right angle prism and a trapezoidal acrylic blocks. These optical elements have powerful magnets attached for fixing of blocks to the disc.

Set of 6 optical elements, packed in case for use with optical disc.



PR-377 OPTICAL BENCH

Comprising a wooden baseboard 1.1mx115mm. with a 1m scale divided in millimeters and figured every centimeters, fixed along the front edge and complete with the following accessories:

2 White-face object & receiving screens each comprising a white card having an aperture and index, in a black metal frame 150x100mm with an index mark at the end.

1 plane mirror 150x100mm mounted on a wooden base as above.

4 Lens holders, each comprising a wooden upright with a 'V' shaped slot to hold lenses up to 75mm, diameter, mounted on a wooden base 100x50mm with an index line at the end.

1 Needle mounted vertically in a short wooden rod in the center of a wooden base 100x50mm.

1 candle holder.

The optical center height of all the components is 100 mm above the base board.



PR-378 ACCESSORIES FOR OPTICAL BENCH

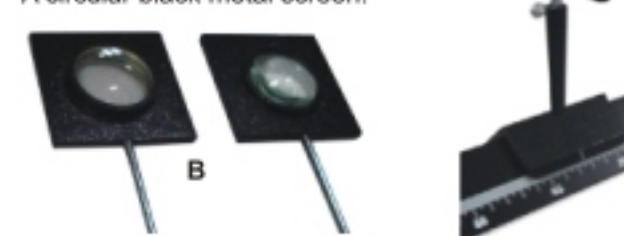
The following accessories are provided with 6mm. mounting rods, where necessary, to fit optical benches. The lengths of the rods and the sizes of the components have been designed to provide a common optical centre.

PR-378A LENS HOLDER, ADJUSTABLE

V-section with hinged arms to take any lens.

PR-378B OBJECT SCREEN

A circular black metal screen.



OPTICAL BENCH AND ACCESSORIES

PR-379 MATT WHITE SCREEN

Made of metal and finished in white matt colour, with a cut-out in one side to locate over meter rule. Can be used in vertical or horizontal position.



PR-380 STAND FOR OPTICAL BENCH ACCESSORIES

Comprising a metal pillar with a hole and lock-screw, mounted on a heavy base. An index line is engraved on one side of the base.



PR-381 LAMP

A 240V 15W white B.C. pygmy lamp in a conical lamp house. Mounted on a 6mm. metal rod. Supplied complete with twin flex.



PR-382 LIGHT BOX AND OPTICAL SET

This kit is very useful for reflection, refraction, and colour mixing experiments. The light box consists of a light source (12V, 24W lamp), producing convergent, divergent, or parallel beam. On one end, an adjustable cylindrical convex lens (for parallel beam) and on the other end, a triple aperture system for colour mixing experiments (lateral aperture are provided with adjustable hinged mirror). All aperture in the box are provided with vertical channels to hold slit plates and colour filters. The optical set includes:

- A. 10 acrylic blocks
- B. Set of three mirrors
- C. 2 slit black plates one with three narrow slits at one end and one narrow at other end.
- D. Black plate with four narrow slits at one end, one wide slit at the other end.
- E. Set of seven mounted colour filters.



SPECTROMETER, & TRAVELLING MICROSCOPE

PR-383 INTERMEDIATE SPECTROMETER

This is a robust instrument designed specifically for student use which is capable of very high performance. The main structure is of heavy cast metal, with bright plated fittings.

Scale : The 150 mm. diameter circle with protective shield is fixed to the telescope movement and the table is attached to the double ended vernier which reads to 1 minute of arc. Both telescope and table rotation fine adjustment screws, and release of a clamping screws enables adjustment of both movements to be made by hand.

Collimator : Mounted on fixed and fitted with 178 mm. focus achromatic objectives, 25 mm. clear aperture. Also fitted is a unilaterally adjustable slit, 7 mm. long.

Telescope : Mounted on moveable pillar and fitted with 178 mm. Focus achromatic objective, 25 mm. clear aperture. Also fitted is a 8x Ramsden eyepiece and a glass crossline graticule. Both the telescope and collimator have rack and pinion focussing. Means are provided for levelling the axis of both optical units and for squaring them to axis of rotation.

Prism Table : The table is marked with lines to assist placing the prism with respect to the table levelling screws.

OTHER MODELS ARE AVAILABLE IN DIFFERENT SIZES

RSP-630 Spectrometer 6" circle, 30 seconds of an arc.

RSP-701 Spectrometer 7" circle, 1 minute of an arc.

RSP-730 Spectrometer 7" circle, 30 seconds of an arc.



PR-384 STANDARD READING TELESCOPE WITH SCALE

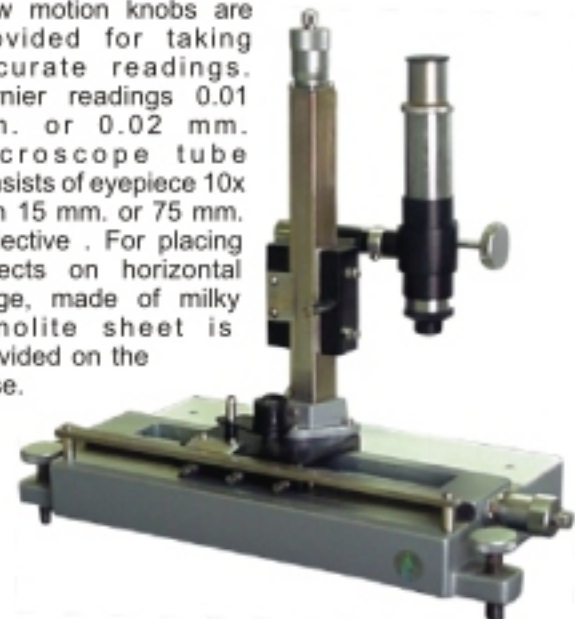
The telescope is mounted on a specially designed carriage with support ring to stop abrupt falling. The carriage is fitted with two adjustable screws for precise vertical and horizontal positioning. This arrangement is mounted on a 25mm dia. 450 mm long steel pillar, fitted on a cast iron base with leveling screws. A scale holder is provided with scale.



PR-385 TRAVELLING MICROSCOPE

are designed to meet the requirements of Research, Colleges, Schools and Industrial laboratories. They are used for accurate measurement of the diameters of different objects. They are also used in Physics Laboratories for more accurate determination of small variation in the liquid levels, Manometers, the refractive index of liquids as well as in surface tension & viscosity experiments.

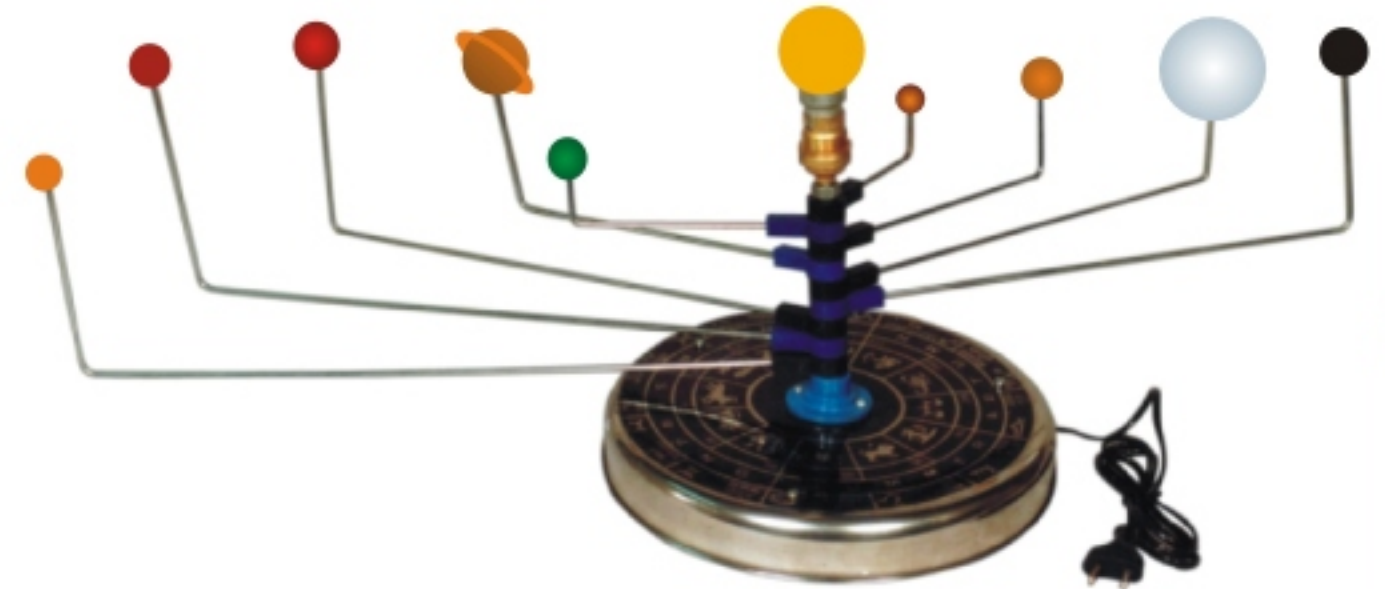
The travelling microscope consists of a cast iron base with machined vee-top surface and is fitted with three levelling screws, one being fixed the microscopes can travel Horizontally 22 cm. and vertically 15 cms. with the help of slides. Two slow motion knobs are provided for taking accurate readings. Vernier readings 0.01 mm. or 0.02 mm. Microscope tube consists of eyepiece 10x with 15 mm. or 75 mm. Objective. For placing objects on horizontal stage, made of milky cenolite sheet is provided on the base.



SOLAR SYSTEM MODELS

PR-386 SOLAR SYSTEM MODEL

To demonstrate the overall shape of the solar system, the main movement of the planets and moon and the shape and direction of their orbits. This small apparatus has the planets from Mercury to Saturn on revolving arms and the moon free to rotate around the earth. The larger planets are bigger than the smaller ones but this model is not to scale. Made of rigid plastic with diagram.



PR-387 SOLAR AND LUNAR ECLIPSE APPARATUS

Solar and Lunar Eclipse Apparatus, fitted on metal base. The earth with its axis inclined and always pointed the same direction revolving round the sun and the moon revolving round the earth.



PR-388 SOLAR SYSTEM MODEL

Solar System Model with Nine Planets, Electric operated fitted on wooden Base with the name of planet Average distance from sun, time of revolution, unit of Earth's mass and the number of moons.

