ZEISS
TELESCOPES

CARL ZEISS
JENA

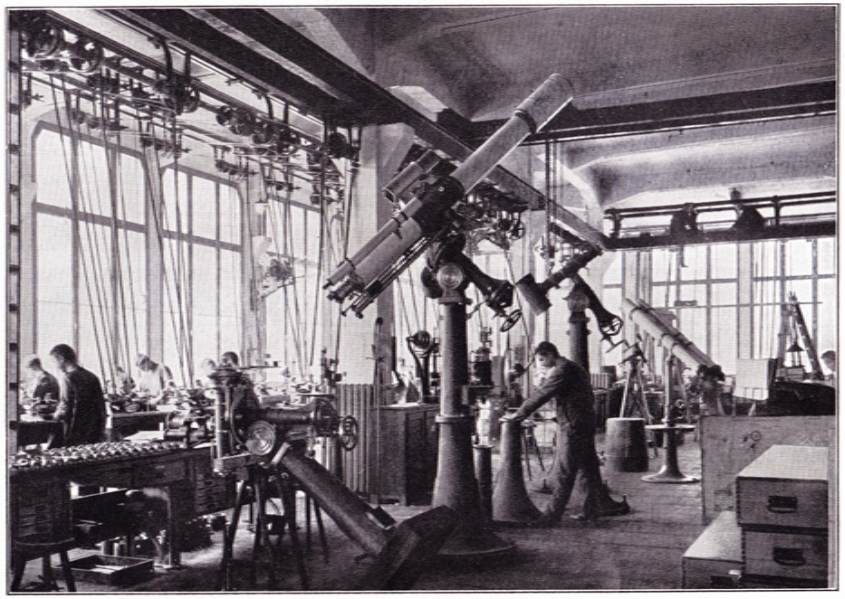
ZEISS

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Astro 80



A Corner of the Zeiss Telescope Assembly Shop. A 91

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Details of design as shown in the illustrations are subject to variations without notice.

THE LURE OF THE TELESCOPE

Unless you are familiar with the modern high-power Telescope, and all it can do, you may think of it merely as a Magnifying Instrument, used at Life-saving Stations, on Ships at Sea and in Astronomical Observatories.

Little, perhaps, do you suspect the wonderful service it renders, the treasures it holds in store for you, furnishing real enjoyment, interesting education, and a thousand and one undreamt of uses every day.

Suppose, for instance, you are interested in *nature study,* armed with a good telescope you can watch the mother-bird feed her young in the tree-tops, perhaps a mile away. Wild game, many miles off, may be observed stalking about as if at your feet.

In the *summer residence, or hotel* on the sea-front, you and your guests may observe details of passing vessels, far out at sea. You can closely follow *yacht* and *motor boat regattas* and watch fishermen at the pounds hauling in their nets, although miles away.

In the *mountains* you can visually explore otherwise inaccessible peaks, observe the scenic splendour of distant crests, and the charm of dreamy valleys far below.

On a large *estate or ranch* the movements of trespassers, workers and visitors — miles away — may be observed. Cattle round-ups may be directed, forest fires be promptly spotted and steps quickly taken to check the progress of the conflagration.

At the *golf club,* members of the links may be located quickly and their play followed closely. Take, for instance, a foursome on a putting green a thousand yards away, the Zeiss model Starmor has a field of view wide enough to include the entire putting green — enabling you to see each player hole out as clearly as if he were right in front of the club house.

BRINGING the STARS DOWN TO EARTH.

There is a wonderful fascination in gazing at stars through a perfect telescope. True — one can see and learn much without a telescope, but even an ordinary field glass discloses hidden worlds and conclusively shows the value of optical aid. Looking at the Moon through a six or eight-power "Zeiss" on a clear night the charm of her weird mountains and craters in bright relief will soon create an irresistible desire for a more powerful Telescope — one that will show the stars not only larger, but also brighter and clearer than one could ever hope to see them with the naked eye. The Moon,



9225

Zeiss Telescope at Glacier Point, Yosemite National Park, maintained by the United States National Park Service.



9199

Sun, Planets and Comets all prove most interesting objects for observation and study which is greatly facilitated by the numerous books, maps and charts now available in almost any library. "The history of astronomy teaches that much of the pioneer work has been done by amateurs usually with modest means and in unfavourable climatic conditions." The amateur's opportunities for useful work, even with simple and inexpensive instruments, have never been so numerous. (Prof. Hale, Director of Mt. Wilson Observatory.)

With the constantly increasing interest in Astronomy manifested by schools and colleges, and with the frequent references to stars and planets, made in the daily papers and magazines, a good telescope becomes an almost indispensable addition to every cultured home.

Unlimited are the uses of a good telescope!

No technical knowledge is necessary to use any of the telescopes recommended in this catalogue.

The explanations on the following pages, and the many illustrations given with the instruments merely answer the numerous questions asked by prospective users or those keenly interested in telescopy.

THE SELECTION OF A TELESCOPE

should be primarily determined by the main purpose for which it is to be used. Do you want to use it at the shore, in the mountains, on your country estate, or for astronomical observations? Do you want an easily portable model or a larger and more powerful instrument for great distances?

Some telescopes appearing in this catalogue are combination models, constructed to meet — with proper attachments, of course — both terrestrial and astronomical requirements. There are also terrestrial models, which may be employed for astronomical observations and vice versa, merely by substituting different eyepieces and accessories.

In order to secure the proper instrument, it is well worth while to familiarize yourself with the optical and mechanical features of the different models. It is the

OPTICAL CONSTRUCTION AND PERFORMANCE

of a telescope that has first to be considered, in order to make an intelligent selection.

Every telescope of this kind, described in this catalogue, has at its big end the large "objective" or objectglass.

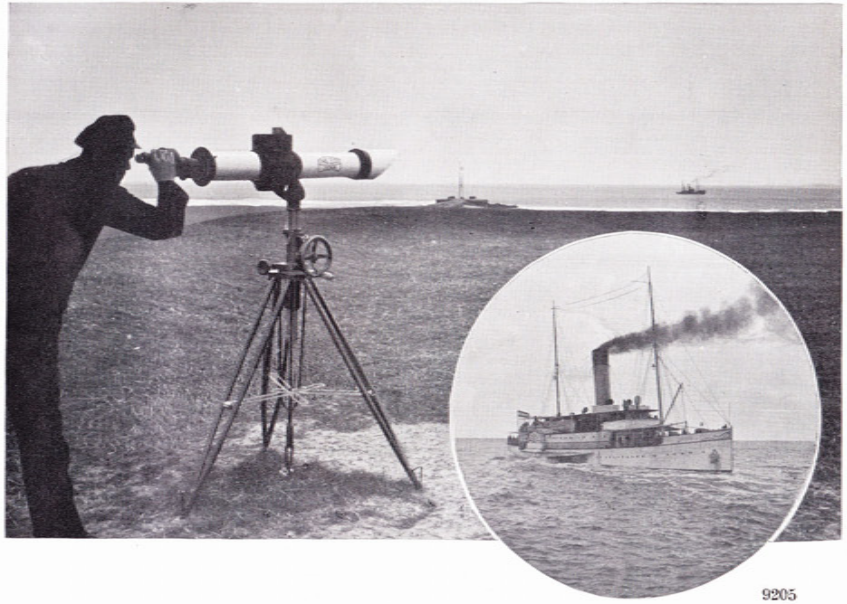
The *objective* is so important that telescopes are classified by the diameter of this lens. Thus, we speak of a three or six inch telescope. The opening of the "objective" (aperture) determines the amount of light entering the tube and the illumination of the telescope image.

Three types of objectives are employed in Zeiss Telescopes. The terrestrial telescopes, such as **Asembi** on page 16, are fitted with a fixed objective, a two-lens combination of short focus. For the astronomical telescopes there are two interchangeable types of objectives of long focus: **AS** and **B**. The AS objective is a new two-lens combination of special optical glass and superior both in correction and definition to the type of objective lenses usually supplied with such instruments. Of still higher quality is the B objective, an apochromatic three lens combination giving the best colour correction and definition obtainable.

The objective, collecting the illuminated image from without, sends it to the small end of the tube, where it is received and transmitted to the eye by the eyepiece. As will be seen in the descriptions of the various models, *three types of eyepieces* are generally furnished:

The *Huygens eyepieces,* consisting of two single lenses, are particulary useful for low and medium magnifications, and where a large field of view is desired.

The *Kellner eyepieces,* consisting of an achromatic two-lens combination and a single field lens, render a flat field of view and are especially suitable for use with terrestrial telescopes.



9205

The *Orthoscopic eyepieces* consist of a single eye lens and a triple cemented field lens. The excellent spherical and chromatic corrections make these eyepieces particularly well adapted to high magnifications.

Each eyepiece has engraved on its cap a number, indicating the magnifications in combination with the objective.

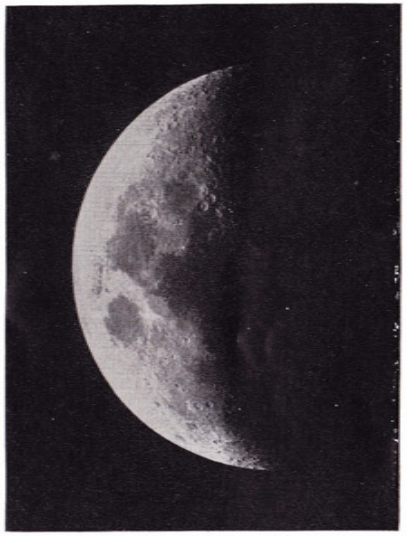
For *terrestrial observations* the eyepieces of lowest magnifications should always be used to obtain a general survey of the landscape and to spot some particular object. Higher magnifications are secured by changing the eyepieces and then focussing with the draw-tube, where necessary. It is generally best to employ low and medium powers, except under unusually favourable conditions in very clear and steady air, and when the objects are brightly illuminated.

For *astronomical observations* also the eyepieces of lowest magnifications should at first be used, for surveying of extended areas, locating a particular object and for the observation of somewhat extended, faintly luminous objects, such as nebulae, comets, etc. Surfacelike and comparatively bright objects, such as the Moon, Jupiter, Saturn, Mars and Venus, are best viewed under a moderate magnification, whilst the highest powers should be used under favourable atmospheric conditions only, for observation of the faintest stars within the limits of the instrument, of close double stars, details of the Moon surface, etc.

Bearing in mind these explanations, the meaning of such technical terms, as Magnification. Illumination and Field of View will be more easily understood.

Magnification is the ratio between the size of the object, as it appears through the telescope, and its size as seen with the naked eye. The magnification is determined by the magnifying powers of the objective and the eyepiece*).

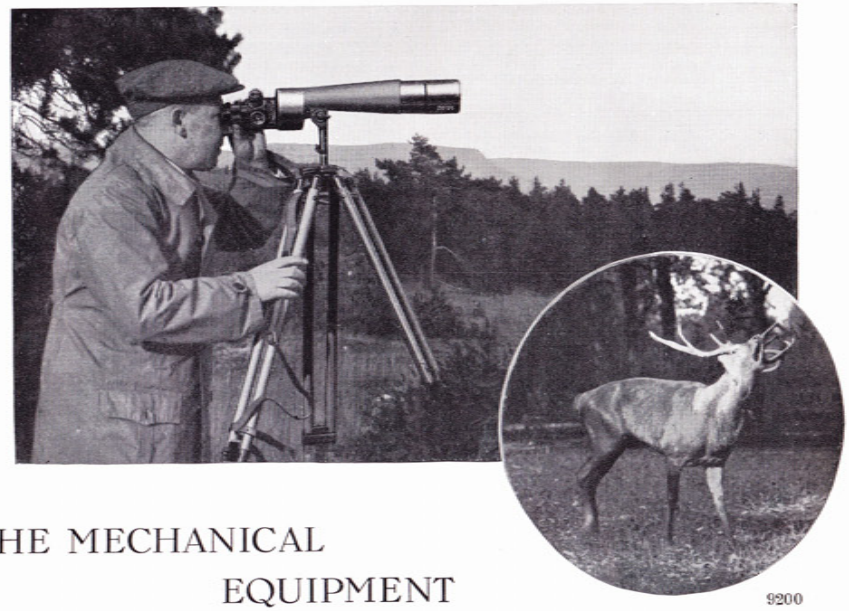
Inasmuch as the objective forms an integral part of each telescope, different magnifications are obtained by changing the eyepieces. The increase in magnification does not, however, always improve the image, for the higher magnifications necessarily reduce the illumination of the image and the area of view as well. The prevailing atmospheric conditions and the object under observation will largely determine the most suitable magnification. The *illumination* of the telescopic image naturally depends upon the luminosity of the objects and the atmospheric conditions. As far as the telescope itself is concerned, it depends upon the transparency of the optical glass, the diameters of the objective and eyepiece openings, the latter being referred to as the "exit pupil". Low magnifications will produce small but brilliant images, while high magnifications involve relatively great diffusion of light, and with the loss of illumination also a loss of details. In a dingy atmosphere, you might still obtain a good image with, say 21× magnification, whereas 60× or 80× magnification might cause complete loss of details.



9215
Moon, 6 days old, as seen trough a telescope.

Field of view indicates the area covered by a telescope, and the larger it is, the better. Its size depends primarily upon the whole optical construction of the telescope and also upon the power of the eyepiece and the resultant magnification. The larger astronomical telescopes are fitted with a "Finder", a low power telescope with a large area of view, which greatly facilitates the spotting of distant objects. It may readily be attached to the tubes of most telescopes and is fully described on page 36.

*) The magnification may readily be determined by dividing the focal length of the objective by the focal length of the eyepiece. In other words, an objective of 1200 mm focal length, used in combination with an eyepiece of 10 mm focal length, will give a magnification of 120×.



9200

THE MECHANICAL EQUIPMENT

of the telescopes listed herein has been carefully selected with a view to meeting all the requirements for general use, rather than those of professionals, whose needs are fully considered in the Zeiss catalogues specially issued for the purpose.

Mountings: Zeiss terrestrial and most of the astronomical telescopes for the use of amateurs have the *Alt-Azimuth* mounting. The tube rests in a fork, permitting an unrestricted tilting motion "in altitude". As the fork revolves around its axis, a free horizontal motion "in azimuth" is also provided. Thus, the telescope may be turned in any direction and focussed on any given point.

Slow motion: Moving the telescope up and down and sideways may simply be done by hand, and this is sufficient for all terrestrial and also simple astronomical observations. Yet, in astronomical observations it is desirable to do such movements more gradually, so as to permit of a more convenient trailing of the heavenly bodies through their respective motions. This is accomplished by the "slow motion" device. The observer may concentrate his entire attention upon the object in view and manipulate the slow motion through flexible transmission wires.

The more elaborate astronomical instruments are equipped, for the same purpose, with the *equatorial* (parallactic) mounting, in which the main axis parallels the axis of the earth, while the horizontal axis parallels the equator. The slow movements are made automatically by a driving clock or, in large instruments, by an electrically driven mechanism.

Stands and Tripods: While it is true that small telescopes, like prism binoculars, may be held satisfactorily by the observer, telescopes in excess of 10× magnification, require a firm support, free from vibration, which tends to distort and blur the image.

For small instruments a *table stand* (see illustration on page 10) may be employed advantageously, provided a steady table is used. The *wooden sliding tripod,* which may conveniently be carried, is more steady and can, therefore, be recommended for small and medium telescopes. Two types of sliding tripods are available, viz. light and strong models (see illustration page 11). They can be equipped with an extension rod to raise the telescope (see page 15).

For astronomical observations a firm mounting is of far greater importance than for terrestrial use, particularly when high magnifications are employed For this purpose a folding *field tripod* of seamless, tubular steel construction is recommended (see illustration on page 18). The field tripod has the additional advantage of being fitted with an elevating gear for raising and lowering the telescope, according to one's requirements. Where the tripods are to be used indoors, the flooring may be adequately protected by placing rubber ferrules over the points.

For the larger telescopes a *wooden pyramid stand* is supplied, mounted on casters and steadying screws. The latter may be lowered, thereby relieving the casters altogether, and ensuring absolute steadiness of the stand. All these stands and tripods allow unrestricted movement of the telescope in all directions.

ACCESSORIES

The telescopes recommended in this catalogue are equipped with accessories which have proved their usefulness by long experience. As the interest and proficiency in telescopic observations increase, the owners of Zeiss telescopes may add to their convenience and obtain better results by the use of additional accessories. These are not essential — merely desirable — as you get deeper into the fascination of telescopic observations. A compilation of accessories is given on pages 36—42.



Zeiss Telescope at Glacier Point, Yosemite National Park, maintained by the United States National Park Service. 9196

ASEROS



5714

Fig. 1. Aserrais.

1 Table stand with round base plate
2 Socket fitting
3 Clamping screw to the side motion
4 Clamping screw to the elevating motion
5 Clamping screw to the sleeve clamp
6 Objective cap
7 Extensible tube cap
8 Revolving collar for setting the telescope to the required magnification
9 Revolving collar with dioptre scale for setting the eyepiece to the observer's sight
10 Attachable yellow glass



Fig. 2. Aseros used as hand telescope 9102



9100 Fig. 3. Aseros in case.

ASEROS

$1\frac{7}{8}$ inch (48 mm) portable telescope with variable magnification from 4—20×



Fig. 4. Aserosta. 9103

THIS is one of the most compact Zeiss telescopes. A movable erecting system of lenses, actuated by a revolving collar (8 in Fig. 1), furnishes a means of conveniently varying the magnifying power. During the process of increasing the magnification, the view appears to approach the eye by a continuous motion, until the highest magnification of 20× is reached.

The variability of the magnification cannot fail to favour the use of the Aseros for many purposes, as hunting, sailing and all sports. One of the many satisfied owners of an Aseros is an Eskimo in Alaska who uses it for hunting sea otter. As for astronomical observations, it is interesting to notice, on moonless nights, the fainter stars come into view and become less distant as the magnification is increased. With the highest magnification of 20× it is still possible to recognise stars of the ninth magnitude.

Prices on enclosed price sheet. *When ordering use Codewords.*

Telescope for use in hand, in leather case (Fig. 2 and 3)	*Aseros*
Same, with metal table stand and adapter (Fig. 1)	*Aserrais*
Same, with light wooden tripod and adapter	*Aserras*
Same, with strong wooden tripod and adapter (Fig. 4)	*Aserosta*
A. Metal table stand (Fig 1)	*Starumeno*
B. Light wooden tripod	*Aserraste*
C. Strong wooden tripod (Fig. 4)	*Starudor*
Adapter to table stand and tripod (See Nos. 2, 3, 5 in Fig. 1)	*Aserramos*
Yellow glass for use in brilliant or intense light	*Aserrar*
Sight correction lens	*Aserraria*
Sun glass and objective sunshade	*Asignen*

Magnification	Objective Diameter in.	Objective Focal length in.	Diameter Exit Pupil mm	Light Transmitt. Power	Field of View in angular measure	Field of View at a distance of 1000 yds yds.	Weight Telescope lbs.	Weight Case lbs.	Weight Stand lbs.	Length of Telescope in.
4—20 ×	$1\frac{7}{8}$	9	11.5 to 2.4	130 to 6	12.5° to 2.5°	220 to 43	$4\frac{1}{2}$	2	A: $6\frac{1}{2}$ B: $3\frac{1}{4}$ C: 10	$20\frac{1}{2}$

STARMOR and STARMORBI

$2\frac{3}{8}$ inch. (60 mm) portable Terrestrial Telescope
Magnifications 12×, 24×, 42×.

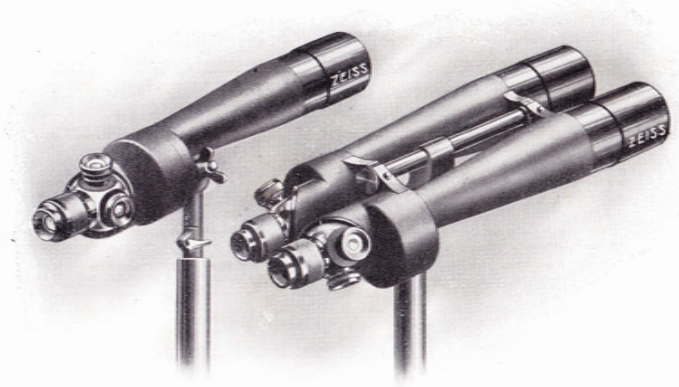


Fig. 5. Starmor. Starmorbi. 9081



Fig. 6. Starmor. 9027

STARMOR is the single tube instrument. It may be used for either the left or the right eye by giving the tube half a turn about its axis. *Starmorbi* is the double tube instrument of the same optical construction, for observation with both eyes. The eyepieces can be set to the distance between the pupils by turning the right telescope about the median line. By reason of the increased distance between the objectives, Starmorbi enhances the stereoscopic effect of the view obtained through the telescope.

These light weight and compact telescopes are excellent for all terrestrial observations. A group of workmen, a herd of animals, or a golf foursome can be observed as though they were but a few yards away. Ships on the distant horizon

STARMOR and STARMORBI

can be quickly located and distant mountain tops visually explored.

Starmor and Starmorbi give also good results as astronomical telescopes. The lunar craters, Jupiter's moons, the ring of Saturn, double stars if separated by at least 4 seconds of an arc, the nebulae of Orion and Andromeda, the crescent shape of Venus etc. may be observed.



Fig. 7. Starmorund. 9335

Prices on enclosed price sheet. *When ordering use Codewords:*

Single tube telescope in leather case, with strong wooden sliding tripod (Fig. 6) . . . . . *Starmor*

Single tube telescope in leather case, with light wooden sliding tripod . . . . . *Starmoras*

Single tube telescope in leather case, with metal table stand (Fig. 7) . . . . . *Starmorund*

Double tube telescope in leather case, with strong wooden sliding tripod . . . . . *Starmorbi*

Double tube telescope in leather case, with metal table stand . . . . . *Starubi*

A: Metal Table Stand (see Fig. 7) . . . . . *Starumeno*

B: Light wooden sliding tripod . . . . . *Starudoras*

C: Strong wooden sliding tripod (see Fig. 6) . . *Starudor*

Sun glass and objective sunshade . . . . . *Asignais*

Magnification	Objective Diameter in.	Objective Focal length in.	Diameter Exit Pupil mm	Light Transmitt. Power	Field of View in angular measure	Field of View at a distance of 1000 yds yds.	Weight Telescope lbs.	Weight Case lbs.	Weight Stand lbs.	Length of Telescope in.
12×	$2\frac{3}{8}$	$16\frac{1}{2}$	5	25	4.2°	74	Starmor $4\frac{3}{8}$	$2\frac{1}{4}$	A: $6\frac{1}{2}$	$19\frac{1}{4}$
24×			2.5	6.3	2.1°	37	Starmorbi $9\frac{7}{8}$	$4\frac{3}{8}$	B: $3\frac{3}{8}$	
42×			1.4	3.0	1.1°	17.5			C: $9\frac{7}{8}$	

ASEGUR

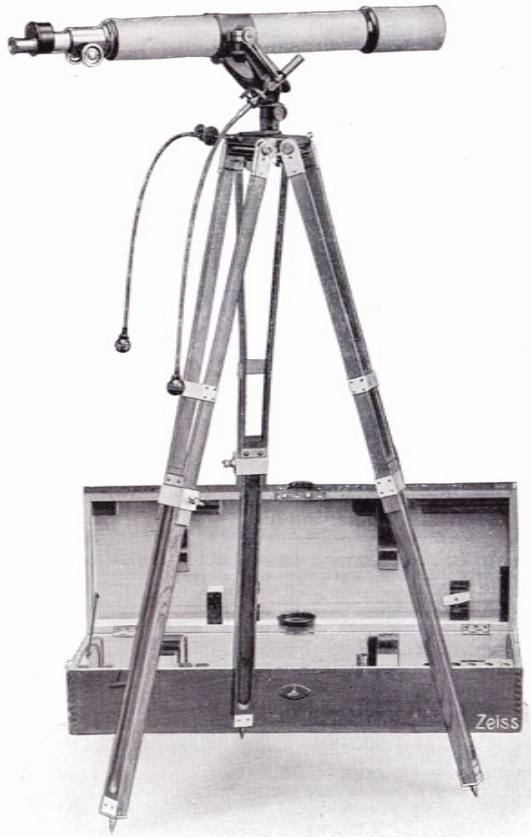


Fig. 8. Asegur. 2175

ASEGUR

$2\frac{3}{8}$ in. (60 mm) portable telescope
Magnifications 21×, 47×, 94×.



Fig. 9. Asegur. 2492 On extension rod with sun projection screen.

A combination telescope, equally well adapted for terrestrial and for astronomical purposes. Included in each equipment cited below, are:

1 objective $2\frac{3}{8}$ in. diameter, $33\frac{1}{2}$ in. focal length. 3 *eyepieces:* 1 Kellner 21×, 1 Huygens 47×, 1 Orthoscopic 94×, 1 dark glass, 1 erecting prism system, 1 eyepiece sliding sleeve, 1 tube mount with 1 eyepiece draw tube, 1 sliding wooden tripod, 1 extension rod for tripod, 1 objective sunshade.

With any one of the 3 eyepieces and the erecting prisms the instrument will prove an excellent daylight telescope in the mountains, at the shore, at the country estate etc,

Used as an astronomical telescope it will be equally satisfying especially when fitted with B-objective. The results obtained will surpass those of the STARMOR (page 12), distinguishing double stars separated by an angular distance of not less than 1.8 sec. of arc.

The telescope can be furnished with or without slow motion.
Additional accessories, e. g. binocular eyepieces, sun projection screen, see page 37.
Additional orthoscopic eyepieces would bring the magnification up to 168×.

Prices on enclosed price sheet.

When ordering use Codewords:

	AS Objective	B Objective
With tripod and with restricted slow motion, wooden case for instrument and tripod (Fig. 12)	*Asegur*	*Asalvenlo*

Magnification	Objective: Diameter in.	Objective: Focal length in.	Diameter Exit Pupil mm	Light Transmitt. Power	Field of View: in angular measure	Field of View: at a distance of 1000 yds. yds.	Weight: Telescope lbs.	Weight: Case lbs.	Weight: Stand lbs.	Length of Telescope in.
21×	$2\frac{3}{8}$	$33\frac{1}{2}$	3.0	9	2.0°	35	$15\frac{1}{2}$	$24\frac{1}{4}$	$13\frac{1}{4}$	$36\frac{1}{4}$
47×			1.3	1.7	1.0°	17.5				
94×			0.6	0.4	0.5°	9				

ASEM and ASEMBI

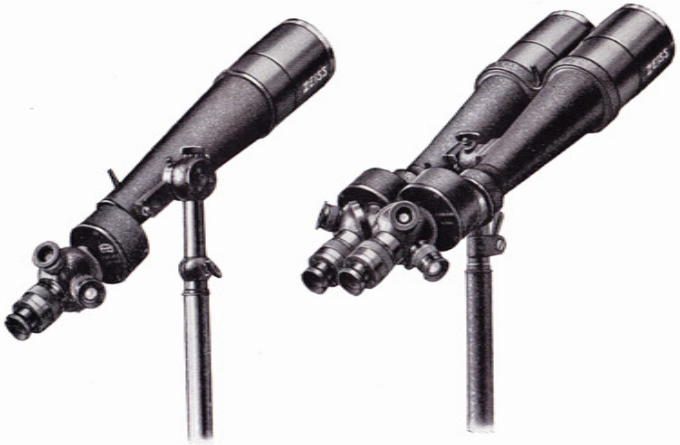


Fig. 10. Asem. Asembi. 9332



Fig. 11. Asem. 9334



Fig. 12. Asaltanti. 9035

ASEM and ASEMBI

$3\frac{1}{8}$ in. (80 mm) portable terrestrial telescope

Magnifications 12×, 20×, 40×.

As *terrestrial* telescopes the models shown here possess great light transmitting power, remarkable brilliancy and clearness of definition. They are very well suited for use in country estates, summer resorts and mountain hotels.

In *astronomical* observations these telescopes give still better results than the Starmor, owing to their larger objectives. Stars to the 10th magnitude are brought into view.

The double tube instruments impart an enhanced plastic effect. Their eyepieces are adjusted to the pupillary distance of the eyes by rotating the two prism drums. When these are in their extreme position, the instrument can be used by two persons at the same time.

Prices on enclosed price sheet. *When ordering use Codewords:*

A: Single tube instrument with strong sliding wooden tripod, complete in a wooden case (Fig. 10, 11) . . . . . *Asem*

B: Single tube instrument with strong sliding wooden tripod, instrument in knapsack, tripod in canvas bag . . . . . *Asacanda*

C: Double tube instrument with strong sliding wooden tripod, complete in a wooden case (Fig. 10) . . . . . *Asembi*

D: Double tube instrument with strong sliding wooden tripod, instrument in knapsack, tripod in canvas bag (Fig. 12) . . . . . *Asaltanti*

Sun glass and objective sunshade . . . . . *Asignamos*

Magnification	Objective Diameter in.	Objective Focal length in.	Diameter Exit Pupil mm	Light Transmitt. Power	Field of View in angular measure	Field of View at a distance of 1000 yds yds.	Weight Telescope lbs.	Weight Case lbs.	Weight Stand lbs.	Length of Telescope in.
12×	$3\frac{1}{8}$	20	6.7	45	3.5°	61	Asem $10\frac{1}{2}$	A: $17\frac{3}{8}$	$12\frac{1}{8}$	$21\frac{5}{8}$
20×			4	16	2.1°	36	Asembi $18\frac{1}{16}$	B: $9\frac{1}{2}$		
40×			2	4	1°	18		C: $18\frac{3}{4}$		
								D: 10		

ASESTARIA

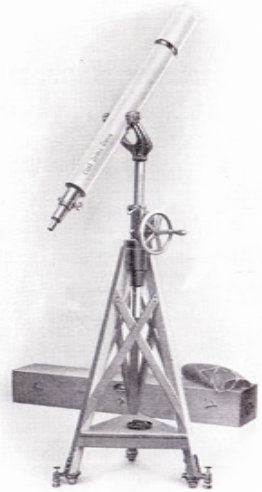


Fig. 13. Asestaria. 9229

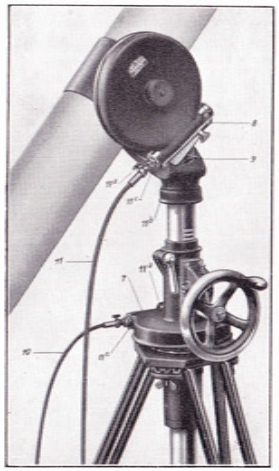


Fig. 14. Unrestricted slow motion. 9236 a

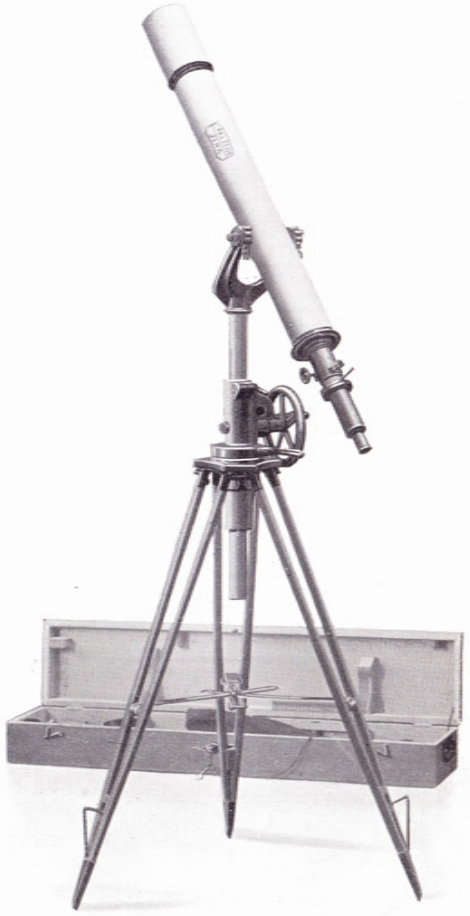


Fig. 15. Asestaron. 9197

ASESTARIA

3⅛ inch. (80 mm) combination telescope for astronomical and terrestrial observation

Magnifications 30×, 67×, 96×, 171×.

With one AS objective and four eyepieces (1 Kellner, 2 Huygens, 1 Orthoscopic), this telescope affords quite a variation of magnifying powers, combined with good illumination and a large field of view.

The outfit further includes;

1 tube mounting with eyepiece draw tube, 1 eyepiece sliding sleeve, 2 sunglasses, 1 set of erecting prisms, 1 sunshade, counterweight, elevating device attached to the tripod, cover for tripod head.

For additional accessories, eyepieces, binocular eyepiece, sun prism etc. not included in the price, see pages 36—43.

The telescope can also be furnished with a B objective (see page 5) of highest correction.

As a terrestrial telescope this type gives entire satisfaction, and for astronomical observations also it will meet the requirements of the average amateur astronomer. Stars up to 10th magnitude can be discerned.

Prices on enclosed price sheet.

	When ordering use Codewords: AS Objective	B Objective
A: Telescope in wooden case on pyramid stand (Fig. 13)	*Asestaria*	*Asamiento*
B: The same with slow motion (Fig. 14)	*Asignanda*	*Asignanse*
C: Telescope in wooden case on steel tripod (Fig. 15)	*Asestaron*	*Asanarse*
D: The same with slow motion (Fig. 14)	*Asignar*	*Asignaras*

Magnification	Objective Diameter in.	Objective Focal length in.	Diameter Exit Pupil mm	Light Transmitt. Power	Field of View in angular measure	Field of View at a distance of 1000 yds. yds.	Weight Telescope lbs.	Weight Case lbs.	Weight Stand lbs.	Length of Telescope in.
30×	3⅛	47¼	2.7	7.3	1.4°	24	A: 20	40	A: 79	45¼
67×			1.2	1.4	0.8°	14	B: 31		B: 93	
96×			0.8	0.6	0.5°	9	C: 20		C: 68	
171×			0.5	0.3	0 3°	4	D: 31		D: 73	

ASESINAIS



Fig. 16. Asesinais. 9242

ASESINAIS

3⅛ inch. (80 mm) Automatic Telescope
Magnifications 30× and 30, 60 and 96×.

There are two models of these telescopes, which differ in the matter of their magnifying powers. One model magnifies 30 times at a mean viewing distance and is intended for use where the instrument is left unattended. The other model has a revolving changing nosepiece with three eyepieces giving a choice of magnifications of 30, 60 and 96×. This model meets the requirements of those cases where some of the view points are at great distances and where persons are always at hand to assist in the proper use of the different magnifications. The slot paying mechanism is the same as that of the ASESOR observation telescope (p. 22).

Prices on enclosed price sheet. *When ordering use Codewords:*

A: Telescope magnifying 30× with slot paying mechanism and field tripod as per Fig. 15 with fitted case for the telescope . . . . . *Asesorad*

B: Telescope magnifying 30× with slot paying mechanism, pillar stand as per Fig. 16, with fitted case for the telescope . . . . . *Asesorais*

C: Telescope magnifying 30×, 60×, and 96×, with slot paying mechanism, field tripod, with fitted case for the telescope . . . . . *Asesinando*

D: Telescope magnifying 30×, 60×, and 96×, with slot paying mechanism, pillar stand (Fig. 16), with fitted case for the telescope . . . . . *Asesinais*

Magnification	Objective		Diameter Exit Pupil	Light Transmitt. Power	Field of View		Weight			Length of Telescope
	Diameter	Focal length			in angular measure	at a distance of 1000 yds.	Telescope	Case	Stand	
	in.	in.	mm			yds.	lbs.	lbs.	lbs.	in.
30×	3⅛	47¼	2.7	7.3	1.4°	24	24	39	A&C: 68	49¼
60×			1.4	2.0	0.7°	15			C&B: 39	
96×			0.8	0.6	0.4°	7				

ASESOR



Fig. 17. 9336

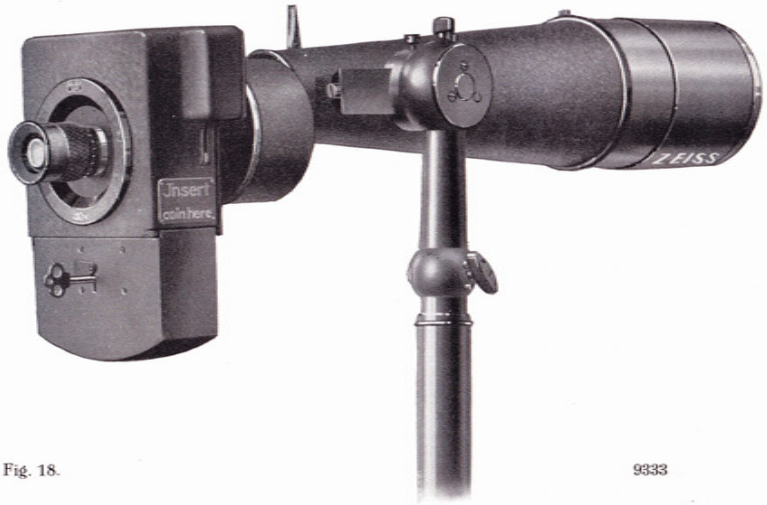


Fig. 18. 9333

ASESOR

$3\frac{1}{8}$ inch. (80 mm) Automatic Telescope

Magnification 20×

Visitors to spots with fine distant views invariably experience a desire to see distant features with a highly magnifying telescope when they find themselves on the top of a view tower, on hotel balconies, or on the flat roofs of public buildings which are open to the public. Generally, lack of space does not permit of a telescope being permanently set up in these places. The ASESOR telescope meets requirements in these circumstances in that it is only 58 cm. ($20\frac{1}{8}$ inch.) long. The instrument is furnished with a folding tripod stand (Fig. 17) or with a stationary sheet metal pillar (Fig. 16), as may be preferred. Neither stand requires a base exceeding 18 inch. in diameter. The automaton is self-winding, and the insertion of the coin opens the field of view for a space of two minutes. The slot paying mechanism may be adapted to suit any given coin, or the Zeiss slot-coin may be used (p. 42).

Prices on enclosed price sheet.

When ordering use Codewords:

A: Telescope with slot paying mechanism and tripod stand, Fig. 17, with fitted case for the telescope and stand . . . . . *Asesor*

B: Telescope with slot paying mechanism and pillar stand as per Fig. 16, with fitted case for telescope and slot paying mechanism . . . . . *Asesinador*

Magnification	Objective		Diameter Exit Pupil	Light Transmitt. Power	Field of View		Weight			Length of Telescope
	Diameter	Focal length			in angular measure	at a distance of 1000 yds	Telescope	Case	Stand	
	in.	in.	mm			yds.	lbs.	lbs.	lbs.	in.
20×	$3\frac{1}{8}$	$19\frac{5}{8}$	4	16	2.1°	37	$12\frac{1}{8}$	$17\frac{1}{2}$	A: 12 B: 33	$21\frac{5}{8}$

ASENGLAR

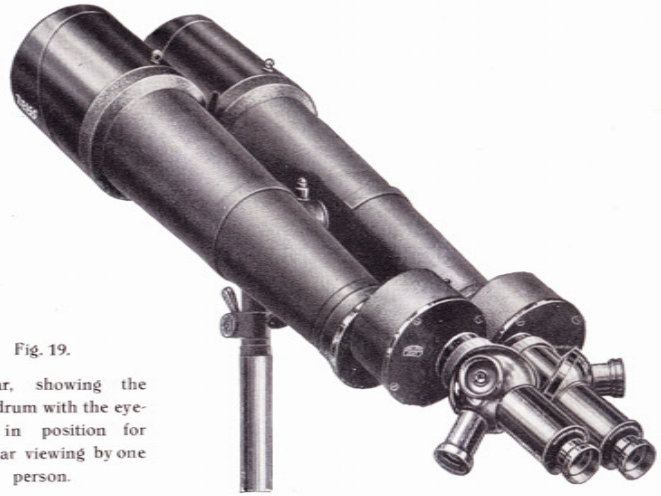


Fig. 19.

Asenglar, showing the prism drum with the eyepieces in position for binocular viewing by one person.

9243



Fig. 20.

Asenglar, showing the prism drums swung outwards so as to separate the eyepiece revolvers as far as practicable for viewing by two persons.

9244

ASENGLAR

$4\frac{1}{4}$ inch. (110 mm) Binocular Observation Telescope

Binocular telescope of greatest light-transmitting capacity and of maximum magnifying power

Magnifications 15×, 30×, 50×.

The objectives and the revolving eyepiece changers with three powers are permanently attached to the telescope. The stand is in the form of a collapsible tripod with an extension rod. The telescope and the stand are accommodated in a fitted case. The ASENGLAR model surpasses the ASEMBI telescope (p. 16) in its light transmitting capacity; in addition, it affords higher magnifications and is therefore better adapted for viewing the landscape in a failing light. Its light transmitting capacity is such that details of far distant objects may be distinguished in the depth of night. Thanks to its small dimensions the telescope may be set up on view points with very limited accommodation, as frequently happens to be the case, for instance, on view towers and in enclosed observation stations on high mountains and on the sea coast.

In the starry heavens, especially on clear moonless nights, faint objects, such as nebulae and star clusters, can be distinctly seen with the ASENGLAR thanks to its great light transmitting capacity and high magnification. Stars may be seen without difficulty down to the 10.8th magnitude.

The greater distance between the objectives as compared with the eyepieces imparts a noticeable relief effect to the scene as seen through the ASENGLAR.

All three eyepieces are sharply focussed jointly by means of a collar between the revolving nosepiece and the prism drums. The distance between the eyes is varied by turning the two drums. When the latter are turned outwards (Fig. 20) till they come to a stop they allow two persons to look through them with one eye.

Prices on enclosed price sheet. *When ordering use Codewords:*

A: Double Telescope with folding tripod stand, with fitted case for both . . . . . *Asenglar*

B: Double Telescope with folding tripod stand. The telescope is accommodated in a knapsack and the tripod stand in a canvas case . . . . . *Asenglo*

Magnification	Objective		Diameter Exit Pupil	Light Transmitt. Power	Field of View		Weight			Length of Telescope
	Diameter	Focal length			in angular measure	at a distance of 1000 yds.	Telescope	Case	Stand	
	in.	in.	mm			yds.	lbs.	lbs.	lbs.	in.
15×	$4\frac{1}{4}$	$29\frac{1}{2}$	7.3	53	3.1°	54	31	A: 26	17	$33\frac{1}{8}$
30×			3.7	18	1.4°	24		B: 17		
50×			2.2	5	0.8°	14				

ASALUMEN – ASALTUR



Fig. 21. Asacar. 9230



Fig. 22. Asaltur. 9232



Fig. 23 Asadul. 9203

ASALUMEN – ASALTUR

4¼ inch. (110 mm) Monocular and Binocular Observation Telescopes

Magnifications 33×, 52×, 72×.

With 3 focussing eyepieces in triple revolving eyepiece head, attached to the tube. Tripod with elevating gear. – Objective and eyepiece are integral parts of this telescope.

Both the single and the double tube instruments are excellent for terrestrial observation, and also give good results as astronomical telescopes. The five brightest satellites of Saturn, for instance, and other stars up to 10.8 magnitude are discernible.

The double instrument (Fig. 22) renders a striking stereoscopic effect. The eyepieces can be adjusted to the pupillary distance of the eyes or can be separated sufficiently to permit two persons to use the telescope simultaneously. The double telescope is specially suited for locations where it is possible to visually tour the country or the sea for many miles.

Telescopes with slot paying mechanism have made telescopic observation a profitable business in many countries.

Prices on enclosed price sheet.

	When ordering use Codewords: Single Tube Instrument	Double Tube Instrument
Telescope in wooden case on pyramid stand	*Asalumen (a)*	*Asaltur (e)*
Same with slot paying mechanism	*Asacar (b)*	
Telescope in wooden case on steel tripod .	*Asadul (c)*	*Asalti (f)*
Same with slot paying mechanism	*Asalir (d)*	

The small letters in brackets behind the Codewords refer to weights below.

Magnification	Objective: Diameter in.	Objective: Focal length in.	Diameter Exit Pupil mm	Light Transmitt. Power	Field of View: in angular measure	Field of View: at a distance of 1000 yds. yds.	Weight: Telescope lbs.	Weight: Case lbs.	Weight: Stand lbs.	Length of Telescope in.
33×	4¼	51¼	3.3	11	1.3°	22	a & c: 31	38	a & b: 83	59
52×			2.1	4.4	0.8°	14	b & d: 39	55	c & d: 66	
72×			1.5	2.3	0.6°	10	e & f: 88	132	e: 105 f: 86	

ASESTEN

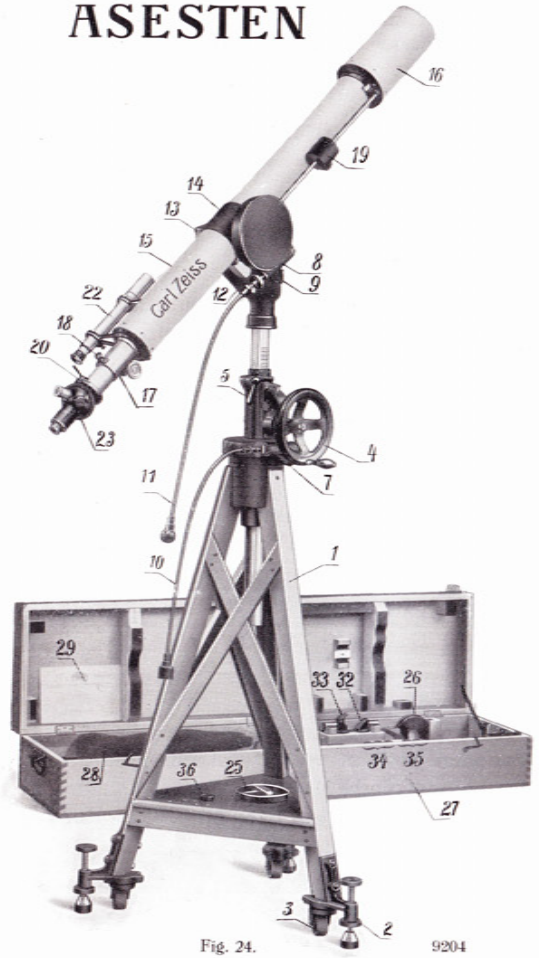


Fig. 24. 9204

1 Pyramid stand
2 Footscrew with lock nut
3 Caster
4 Elevating gear with rack and pinion motion
5 Clamp for elevating gear
7 Horizontal slow motion by wormwheel, with disengaging worm for coarse motion in azimuth
8 Altitude slow motion by wormwheel, with disengaging worm for coarse motion in altitude
9 Clamping screw for slow motion in altitude
10 Flexible shaft for actuating slow motion in azimuth
11 Flexible shaft for actuating slow motion in altitude
12 Telescope fork
13 Trunnion slip
14 Telescope sleeve
15 Telescope
16 Dew cap
17 Eyepiece draw-tube with rack and pinion motion
18 Clamp for eyepiece drawtube
19 Counterpoise
20 Changing device
22 Finder
23 Triple revolver
25 Lens cap
26 Sunshade for objective
27 Fitted case for all telescope parts
28 Cover case for elevating gear and telescope fork
29 Directions for keeping telescope in good order
32 Zenith prism
33 Herschel sun prism
34 Astro eyepieces
35 Sun and moon glasses
36 Lens cap for finder

ASESTEN

4¼ inch. (110 mm) Astronomical Telescope
Magnifications 33×, 66×, 132×, 184×, 275×.

Included in the equipment are:

1 AS or B objective of 4⅜ inch. aperture 65 inch. focal length
1 Kellner eyepiece $f = 2$ inch.
2 Huygens eyepieces $f = 1, \frac{1}{2}$ inch.
2 Orthoscopic eyepieces $f = \frac{11}{32}, \frac{7}{32}$ inch.
1 Sun glass
1 Moon glass
1 Set of erecting prisms
1 Tube mounting with
1 Eyepiece draw-tube
1 Eyepiece sliding sleeve
1 Changing device
1 Triple revolver
1 10× Finder
1 Dew cap
1 Sunshade
1 Counterpoise
1 Fitted case for telescope
1 Box for accessories
1 Elevating gear for stand
1 Cover for stand head.

This instrument has proved to be an excellent equipment for earnest amateur work. Sun, Moon, Planets, Nebulae, double stars if separated by at least 1 sec. of arc, Jupiter's moons and numerous other wonders of the starry sky will disclose themselves to the observer's eye. — With additional accessories, such as slow motion, binocular eyepiece etc., the working field and the ease of manipulation can be further increased.

With the erecting prism included in the equipment, a terrestrial telescope of striking efficiency is available.

Prices on enclosed price sheet.

	When ordering use Codewords: AS Objective	B Objective
A: Telescope in wooden case on pyramid stand . .	*Asesten*	*Asaneis*
B: The same with slow motion (Fig. 24)	*Asignaren*	*Asignaria*
C: Telescope in wooden case on steel tripod . . .	*Aseus*	*Asantam*
D: The same with slow motion	*Asignarol*	*Asignasen*

Magnification	Objective Diameter in.	Objective Focal length in.	Diameter Exit Pupil mm	Light Transmitt. Power	Field of View in angular measure	Field of View at a distance of 1000 yds. yds.	Weight Telescope lbs.	Weight Case lbs.	Weight Stand lbs.	Length of Telescope in.
33×	4¼	65	3.4	11.6	1.3	23	A: 35	53	A: 79	65
66×			1.7	2.9	0.8	18	B: 48		B: 103	
132×			0.9	0.8	0.4	7	C: 35		C: 66	
184×			0.6	0.4	0.2	4	D: 48		D: 92	
275×			0.4	0.2	0.2	3				



Fig. 25. Asaliter. 9221



Fig. 26. Asadiemos. 9209



Fig. 27. Asal. Binocular Telescope on column used by two observers. 9195

ASALITER – ASAL

5⅛ inch. (130 mm) Monocular and Binocular Observation Telescope

Magnifications 35×, 58×, 116×.

With triple revolving eyepiece. Objectives and eyepieces are integral parts of the telescope and cannot be interchanged with other objectives and eyepieces.

The double instrument can be used by one person with both eyes, or by two persons at the same time with one eye only. – For public observation platforms the instruments can be equipped with a slot paying mechanism, restricting automatically the observation time. (See page 42).

These telescopes, due to their large size and high-power optical equipment, have a still wider field of application than the preceding models. Mainly intended as terrestrial telescopes, they can be used for astronomical observations as well and will help to enrich your hours of leisure.

Prices on enclosed price sheet.

	When ordering use Codewords: Single Tube Instrument	Double
Telescope in storing case on column with protection hood	*Asaliter (a)*	*Asal (e)*
Same with slot paying mechanism	*Asalirco (b)*	
Telescope in storing case on steel tripod	*Asediaste (c)*	*Asalux (f)*
Same with slot paying mechanism	*Asediemos (d)*	

The small letters in brackets behind the Codewords refer to weights below.

Magnification	Objective: Diameter in.	Objective: Focal length in.	Diameter Exit Pupil mm	Light Transmitt. Power	Field of View: in angular measure	Field of View: at a distance of 1000 yds. yds.	Weight: Telescope lbs.	Weight: Case lbs.	Weight: Stand lbs.	Length of Telescope in.
35×	5⅛	68½	3.7	14	1.2°	21	a & c: 55	a–d: 125	a, b & e: 374	A–D: 80
58×			2.3	5.3	0.7°	13	b & d: 68		c & d: 88	
116×			1.1	1.2	0.4°	6	e & f: 132	e & f: 132	f: 110	E & F: 79

ASEVERA

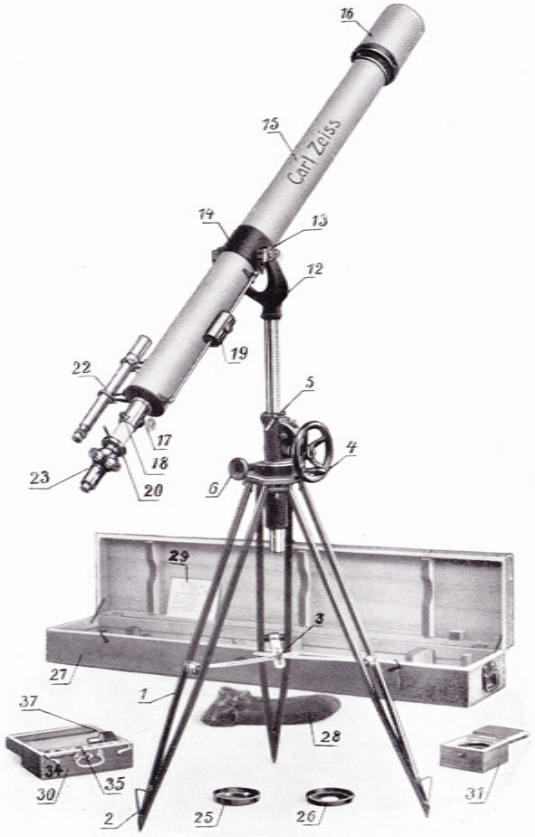


Fig. 28. Asexerais. 9207

1 Field tripod
2 Tread
3 Stays with clamping screw
4 Rack and pinion elevating gear
5 Clamp for elevating gear
6 Clamp for rotation in azimuth
12 Telescope fork
13 Trunnion clip
14 Telescope trunnion sleeve
15 Telescope
16 Dew cap
17 Eyepiece draw-tube with rack and pinion motion
18 Clamp for eyepiece draw-tube
19 Counterpoise
20 Changing device
22 Finder
23 Triple revolver
25 Lens cap
26 Objective sunshade
27 Fitted case for telescope
28 Cover for elevating gear and telescope fork
29 Directions for keeping telescope in good order
30 Small polished wooden box for eyepieces and accessories
31 Small polished wooden box for telescope objective
34 Astro eyepieces
35 Dark glasses
37 Erecting prisms

ASEVERA

5⅛ inch. (130 mm) Astronomical Telescope

Magnifications 39×, 78×, 156×, 216×, 279×, 390×.

Included in the equipment are:

1 AS or B objective, 5⅛" aperture, 77" focal length
1 Kellner eyepiece $f = 2$ inch.
2 Huygens eyepieces $f = 1$, $\frac{1}{2}$ inch.
3 Orthoscopic eyepieces $f = \frac{1}{3}$, $\frac{9}{32}$, $\frac{5}{16}$ inch.
1 Sun Glass
1 Moon Glass
1 Yellow Glass
1 Erecting Prism
1 Tube Mounting with
1 Eyepiece draw tube
1 Changing Device
1 Eyepiece sliding sleeve
1 Triple Revolver
1 10× Finder
1 Sunshade
1 Counterpoise
1 Case for telescope
1 Elevating gear for tripod
1 Box for accessories
1 Cover for tripod head.

Still more powerful than the 4⅜ inch. astronomical telescope (page 28), this equipment will disclose many wonders of the immense Universe. Details of the surface of Sun and Moon are shown in bold relief. You can explore the surface of Mars: Jupiter's four bright satellites are clearly recognisable; planets and double stars appear before your eyes, which cannot be recognised with smaller instruments. Stars up to 11.2 magnitude are discernible.

The same instrument, with the erecting prisms, will serve as well for terrestrial observations.

Prices on enclosed price sheet.

When ordering use Codewords:

	AS Objective	B Objective
A: Telescope in wooden case on pyramid stand (see Fig. 22)	*Asevera*	*Asaphes*
B: The same with slow motion (see Fig. 24)	*Asignaste*	*Asignatura*
C: Telescope in wooden case on steel tripod (Fig. 28)	*Aseverais*	*Asarabacca*
D: The same with slow motion (see Fig. 24)	*Asigneis*	*Asignemos*

Magnification	Objective: Diameter in.	Objective: Focal length in.	Diameter Exit Pupil mm	Light Transmitt. Power	Field of View: in angular measure	Field of View: at a distance of 1000 yds. yds.	Weight: Telescope lbs	Weight: Case lbs.	Weight: Stand lbs.	Length of Telescope in.
39×	5⅛	77	3.3	11	1.1°	19	A: 62	A: 70	A: 114	77
78×			1.7	2.9	0.6	11	B: 77	B: 79	B: 122	
156×			0.8	0.6	0.3	5	C: 62	C: 70	C: 88	
216×			0.6	0.4	0.2	4	D: 77	D: 79	D: 95	
279×			0.5	0.3	0.2	4				
390×			0.3	0.1	0.1	2				

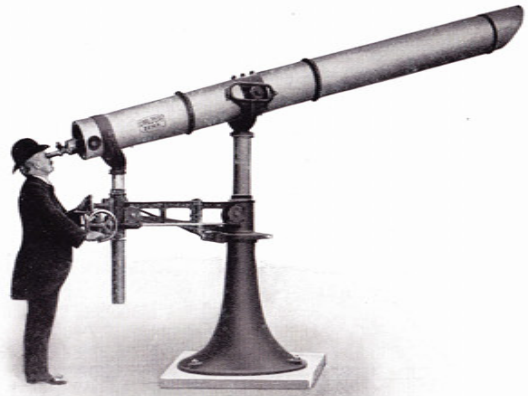


Fig. 29. $8\frac{3}{4}$ inch. Observation Telescope. Magn. 70×, 120×, 200×. 9239
With triple revolving eyepiece. Tube length 169 inches. Codeword: *Asalado.*



Fig. 30. $9\frac{1}{2}$ inch. Observation Telescope with triple revolving eyepiece. Magn. 60×, 90×, 144×. 9194
Made in 3 sections for convenient transportation. Stand collapsible. Codeword: *Asalak.*

EQUATORIAL TELESCOPES



Fig. 31
$3\frac{1}{8}$ inch. Equatorial. 9213

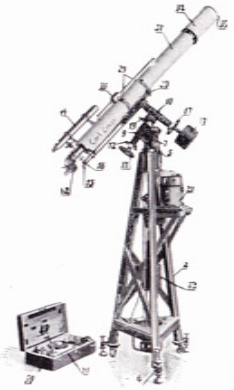


Fig. 32.
$3\frac{1}{8}$ or $4\frac{1}{4}$ inch. Equatorial.
9206

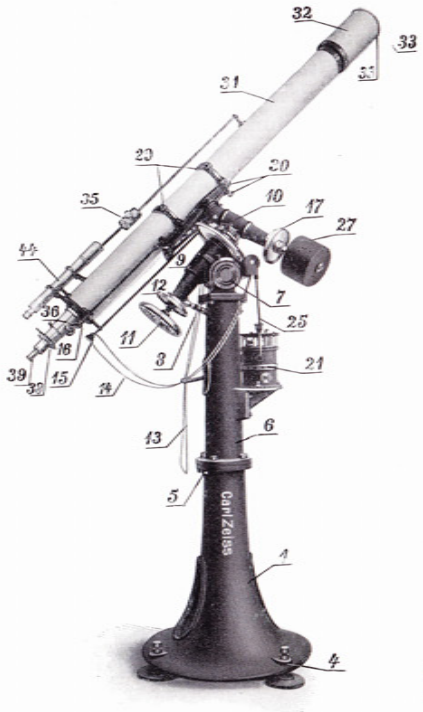


Fig. 33. Equatorial
of $4\frac{1}{4}$ or $5\frac{1}{8}$ inch. aperture.

Refractor
Tube length 72, 87 inch.
Height of Telescope 77 inch.
9202

Details of Zeiss Refractors on application

ACCESSORIES

(Prices on enclosed price sheet)

Finder: A small prism monocular may be attached to the tube of the smaller terrestrial and astronomical instruments. It affords a large field of view and therewith the possibility of easily locating the special object of observation with the telescope. This attachment is desirable on astronomical instruments.

The monocular field glass used in this finder may be readily detached and used independently for many other purposes, such as hunting, on ocean voyages, at races, athletic contests, etc.

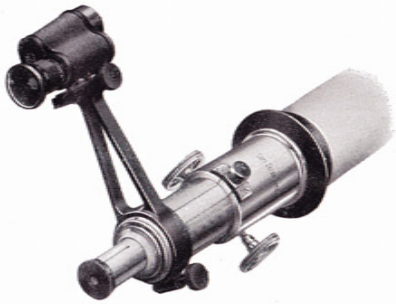
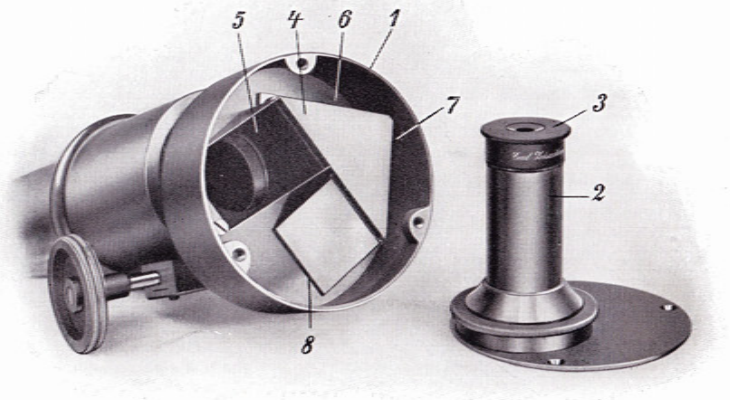


Fig. 34. Codeword: *Ascentar.* 9233

Erecting Prisms: The objective produces in the telescope tube an inverted image. For astronomical observations this inversion is immaterial and, therefore, all astronomical eyepieces simply transmit this inverted image to the observer's eye. Amateur astronomers soon get used to it, and the astronomical maps even show the sky in the same inverted position. For terrestrial use, however, it would be confusing to see everything upside-down, and terrestrial eyepieces, therefore, reverse the image. If astronomical telescopes are used for terrestrial observation, the reversion of the image is accomplished by erecting prisms, which form part of their outfit.



1) Prism Box
2) Eyepiece Sliding Sleeve
3) Eyepiece
4) Erecting Prism with
5–8) four reflecting surfaces.

Fig. 35. Set of Erecting Prisms. 2266

ACCESSORIES

(Prices on enclosed price sheet)

The Zenith Prism enables the user to observe stars high in the heavens without the discomfort of having to bend the head back in order to look through the sharply tilted telescope. The path of rays is reflected at right angles, which allows one to be seated in front of the telescope and look down at the image in the prism (1) instead of looking upward into the tube. The prism screws to the eyepiece drawtube and admits of the use of all astronomical eyepieces from 50 to 5 mm focus.

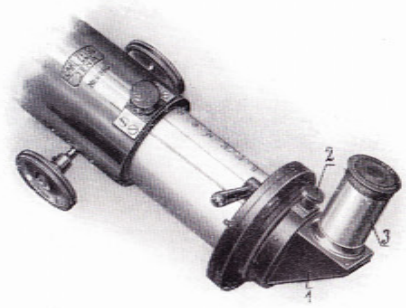
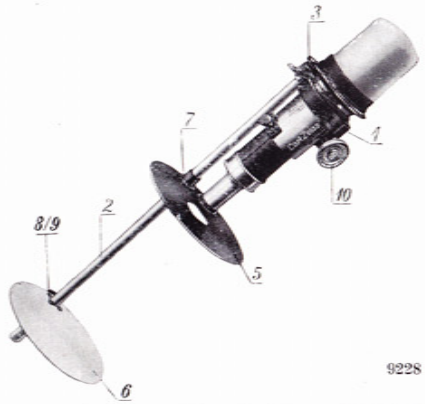


Fig. 36.

Zenith prism with changing attachment. 2345 Codeword *Ascesso.*

Sun Projection Screens to project the image of the sun upon a white screen. The screen may be covered with a sheet of white paper upon which the image of the sun with its spots may be traced with a pencil.



9228

Fig. 37. Sun Projection Screen attached to the 60 mm ($2\frac{3}{8}$ inch.) Asegur Telescope.

Sun Projection Screen for Telescopes of 60– 80 mm aperture. Codeword: *Aschiera*
" " " " " " 110–130 mm " " *Aschierana*
" " " " the finder telescope . . . . . " *Asegundese*

ACCESSORIES

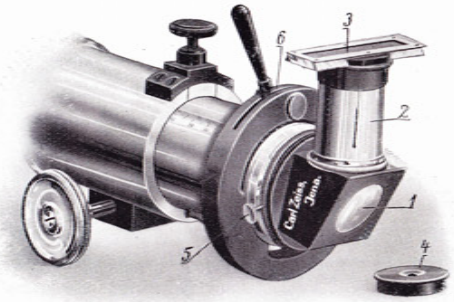


Fig. 38. 2334

Herschel Sun Prism with Absorbing Wedge

1 Reflecting prism
2 Sliding sleeve for eyepiece, f = 25 to 5 mm (1 to $\frac{3}{16}$ inch.)
3 Absorbing wedge
4 Eyepiece cap
5 Clamp to rotation about axis of telescope
6 Changing attachment

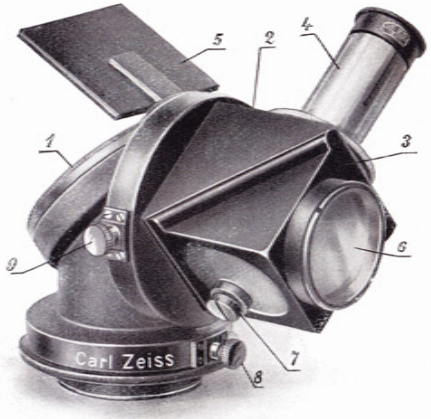


Fig. 39. 2352

Colzi Polarising Sun Prism

1 Glass mirror
2 Glass prism
3 Liquid prism
4 Sliding sleeve for eyepieces, f = 25 to 5 mm (1 to $\frac{3}{16}$ inch.)
5 Safety mirror
6 Transparent membrane
7 Screw plug
8 Clamp to rotation about position axis
9 Clamp to prism rotation for varying the intensity

Sun Prisms. The telescopes for astronomical and terrestrial observation are rendered available for observation of the sun by being fitted with dark glasses and a sunshade for the objective. These admit only of the intensity being reduced to a certain invariable proportion. Moreover, it is impossible with these simple devices to obviate comparatively intense heating. It is therefore always preferable to employ for solar observations so-called sun prisms. These have the advantage, in the first place, that the intensity can be varied within wide limits and that undue heating of the eyepiece is obviated, besides which they admit of the sun being viewed with the head in a convenient attitude. We make two models of sun prisms, viz, the Herschel sun prism, in which the intensity is moderated by means of a movable absorption wedge, and the Colzi polarising sun prism, in which the intensity is modified by the rotation of the prism body (2) with respect to the glass mirror (1). In the latter case the intensity is therefore moderated without the interposition of an absorbing glass, in consequence of which the Colzi prism exhibits the image of the sun in its natural colours.

Prices on enclosed price sheet. *When ordering use Codewords:*

Herschel Sun Prism with absorbing wedge for eyepieces of 50—5 mm focus, with eyepiece sliding sleeve, in case. Required tube shortening 40 mm . . . . . *Aschiare*

Colzi Polarising Sun Prism for eyepiece of 50 to 5 mm focus, with eyepiece sliding sleeve, in case. Required tube shortening 100 mm . . . . . *Aschhok*

ACCESSORIES

(Prices on enclosed price sheet)

Binocular Eyepieces: Many telescope users are unaccustomed to observe with one eye, and their eyes may become fatigued through muscular strain. It is also generally admitted that in consequence of the habitual use of both eyes details in the telescopic image are less perfectly perceived by monocular vision than is the case when both eyes participate. A single tube telescope may be given the advantage of the double telescope by equipping it with a binocular eyepiece. There is a terrestrial and an astronomical binocular eyepiece. Both double the image for observation with two eyes. Besides this, the terrestrial binocular eyepiece also erects the image into the natural position. For any desired magnification two astronomical eyepieces of like focal length should be specified in the order.

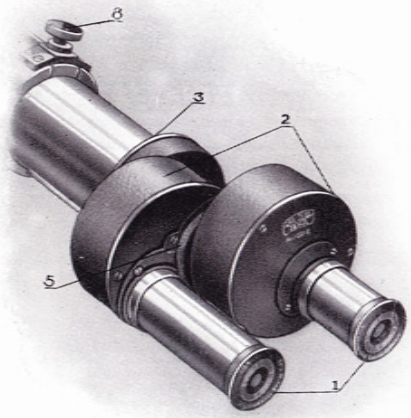


Fig. 40. 9220

Binocular Eyepiece for terrestrial viewing, available for use with eyepieces from 25 to 5 mm focus. (Parts 2, 3, 5.) Codeword: *Ascetaria.*

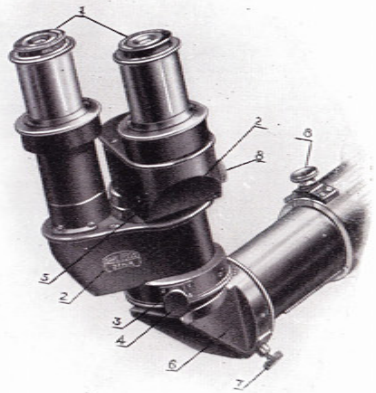


Fig. 41. 9223

Binocular Eyepiece for astronomical observations, available for use with eyepieces from 50-5 mm focus. (Parts 2, 3, 4, 5.) Codeword: *Asgol.*

1 Interchangeable astronomical eyepieces;
2 Reversing prisms in fig. 40. Non-erecting prisms in fig. 41.
3 & 4 Clamps for rotation about the position axis.
5 Scale for varying the distance between the eyes;
6 Zenith prism (Codeword: *Ascesso*).
7 Clamp for same.
8 Clamp for focussing attachment.

ACCESSORIES

(Prices on enclosed price sheet)

Triple Eyepiece Revolver (Parts 1, 3, 5 of Fig. 42) . . Codeword: *Ascensae*

The eyepiece mounting revolves so that the observer can very easily change from one to another eyepiece. For astronomical observations the revolver should be screwed to the draw-tube direct, without the erecting prisms shown.

1 Triple revolver
2 Kellner eyepieces, f=40 mm ($1\frac{9}{16}$ inch.), made to unscrew, for direct use without revolver
3 Sliding sleeve for
4 Eyepieces, f=25 to 5 mm
5 Index to rotation of revolver
6 Erecting prism
7 Changing attachment.

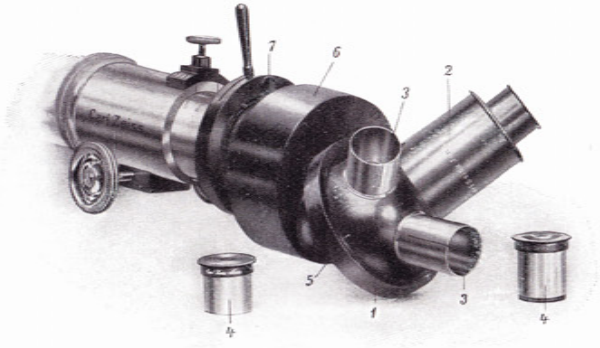


Fig. 42. 9238

Changing Attachment

1 Clamping ring
2 Changing collar
3 Clamping lever
4 Rack and pinion focussing attachment on eyepiece draw-tube,
5 Clamp focussing
6 Two small round-headed screws for taking up gear in (4)
7 Extension piece for eyepiece draw-tube
8 Eyepiece sliding sleeve for astro eyepieces
9 Unscrewing eye cap for astro eyepieces.

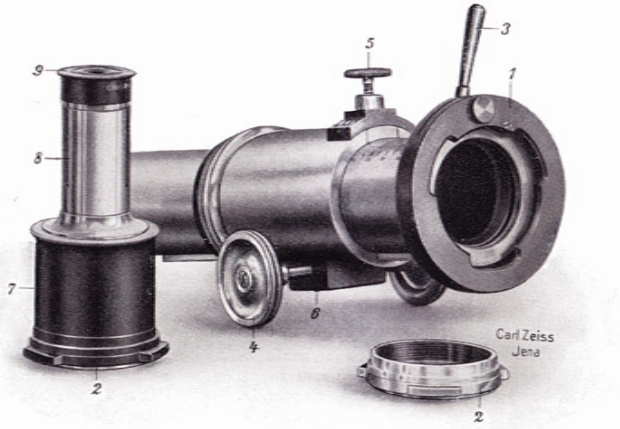


Fig. 43. 9241

Changing Attachment: A device to easily clamp eyepieces and prisms to the tubes of Zeiss telescopes, eliminating the rather tedious process of screwing them into position. A separate changing collar is required for every eyepiece or other accessory.
Codeword: Changing device (Parts 1 and 3): *Ascaliarum.* Codeword: Changing collar (Part 2): *Ascalon.*

ACCESSORIES

(Prices on enclosed price sheet)

Absorbing Filters to fit the eyepieces, of neutral or tinted glass for observation of brilliant objects.

	Sun Glass, light	Moon Glass, light	Moon Glass, dense
Codewords:	*Ashame*	*Asharia*	*Ashaming*

Coloured Glasses to fit the eyepieces, for the elimination of colours by absorption. In observing brilliant objects, such as Sun, Moon, Planets, they enhance the clarity of the image by accentuating contrasts.

	Red Glass	Yellow Glass	Green Glass	Blue Glass	Mars Glass
Codewords:	*Ashine*	*Asialiem*	*Asiana*	*Asianer*	*Asialia*

Revolving Disc of Coloured Glasses with five different glasses for rapidly changing the colours, viz. neutral tint, red, yellow, green, blue. Codeword: *Aschera*

Slot Paying Mechanisms

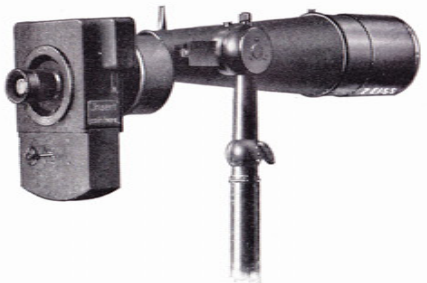


Fig. 44. 9339
View Telescope 20×80 with slot paying mechanism. Codeword: *Asgat.*

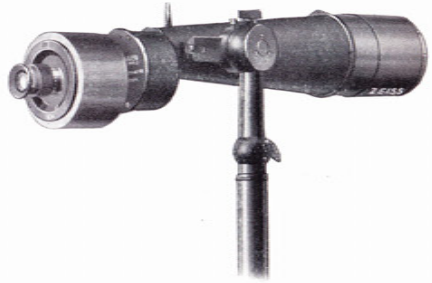


Fig. 45. 9330
The same Telescope with alternative fitting in place of the slot paying mechanism.

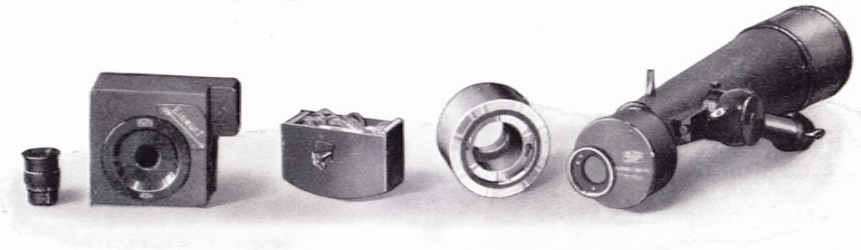


Fig. 46. Separate Parts of the Slot Paying Mechanism. Codeword: *Asgat.* 9338

1 Prism reversing combination.
2 Slot paying mechanism.
3 Screws for the attachment of Part 2 or 4 to the prism reversing combination (1).
4 Alternative to the slot paying mechanism (2).
5 Eyepiece with dioptre scale and attachment disc.
6 Coin box. When attached to 2 and closed it locks Part 5 to Part 2.
7 Locking screw for the attachment of Part 4 to Part 1.

Slot Paying Mechanisms



Fig. 47. 9248

Visitors to points whence a fine view is obtainable almost invariably like to see more of the panorama spread out before their eyes with the aid of a highly magnifying telescope. This enables owners of large telescopes to make a profit out of their instruments by fitting them with a slot paying mechanism. The latter may be adapted for any given coin, a specimen of which should be sent when ordering the instrument. In many cases it is advisable to make use of a special slot coin (Fig. 48), with the advantage that the charge for the use of the telescope may be varied at different seasons and for the rush hours. The machines are appropriately set for a period not exceeding two minutes, experience having shown that the telescope is never used longer than two minutes.

The ASGAT slot paying mechanism may be employed in conjunction with a great variety of telescopes, but more particularly with those models which are equally well adapted for astronomical and terrestrial observations. Fig. 47 shows the ASGAT mechanism as attached to the ASEGUR telescope for astronomical observations.

Prices on enclosed price sheet.

	Codeword:
A: Slot paying mechanism without winding mechanism (Fig. 46)	*Asgat*
B: Alternative for the slot paying mechanism when using the telescope without the latter	*Asgiato*
C: 100 Zeiss slot-coins of brass (Fig. 48) . . .	*Asiduo*
D: 100 Zeiss slot-coins of zinc (Fig. 48) . . .	*Asiduose*



Fig. 48. 9245
Zeiss Slot-coin.

Gross weights for Sea Transit and Cubic Measure of Packing

Page	Codeword	Gross weight lbs.	Cubic measure of packing cub. ft.	Page	Codeword	Gross weight lbs	Cubic measure of packing cub. ft.
11	*Aseros*	11	—	27	*Asalumen*	375	42
11	*Aserrais*	22	—	27	*Asacar*	420	42
11	*Aserras*	15	—	27	*Asadul*	375	28
11	*Aserosta*	20	3½	27	*Asalir*	420	28
13	*Starmor*	32	3½	27	*Asaltur*	550	55
13	*Starmoras*	22	3½	27	*Asalti*	506	41
13	*Starmorund*	29	3½	29	*Asesten*	570	64
13	*Starmorbi*	66	3½	29	*Asignaren*	600	64
13	*Starubi*	66	3½	29	*Aseus*	510	57
15	*Asegur*	110	7	29	*Asignarol*	530	57
15	*Asalvenlo*	110	7	29	*Asaneis*	570	64
17	*Asem*	120	7	29	*Asignaria*	600	64
17	*Asacanda*	100	7	29	*Asantam*	510	57
17	*Asembi*	175	11	29	*Asignasen*	530	57
17	*Asaltanti*	120	7	31	*Asaliter*	1020	67
19	*Asestaria*	350	42	31	*Asalirco*	1030	67
19	*Asignanda*	365	42	31	*Asediaste*	570	60
19	*Asestaron*	350	42	31	*Asediemos*	600	60
19	*Asignar*	371	42	31	*Asal*	1150	85
19	*Asamiento*	350	42	31	*Asalux*	730	70
19	*Asignanse*	365	42	33	*Asevera*	550	64
19	*Asanarse*	350	42	33	*Asignaste*	570	64
19	*Asignaras*	365	42	33	*Aseverais*	550	64
21	*Asesorad*	220	35	33	*Asigneis*	570	64
21	*Asesorais*	200	35	33	*Asaphes*	550	64
21	*Asesinando*	220	35	33	*Asignatura*	570	64
21	*Asesinais*	200	35	33	*Asarabacca*	550	64
23	*Asesor*	132	7	33	*Asignemos*	570	64
23	*Asesinador*	175	11	34	*Asalado*	1408	148
25	*Asenglar*	154	11	34	*Asalak*	1210	69
25	*Asenglo*	100	7				

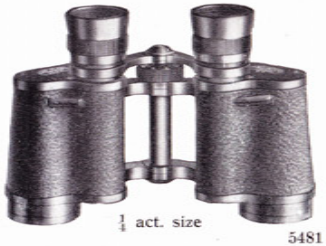
ZEISS PRISM BINOCULARS



¼ act. size 5478

TELEX 6×

Large field of view, good light transmitting capacity



¼ act. size 5481

SILVAREM 6×

Twin focussing model. Exceptional light transmitting capacity



⅓ act. size 5224

MONOCULAR SIMPSILV 6×



¼ act. size 5470

BINOCTAR 7×



¼ act. size 5482

DELTRENTIS 8×

Universal Wide-angle glass, with an exceptionally large field of view



¼ act. size 5483

DELTRINTEM 8×

Like the adjoining model, but with twin focussing

ZEISS PRISM BINOCULARS



5471

¼ act. size

DELACTIS 8×

Wide-angle glass of exceptional light transmitting capacity



5184

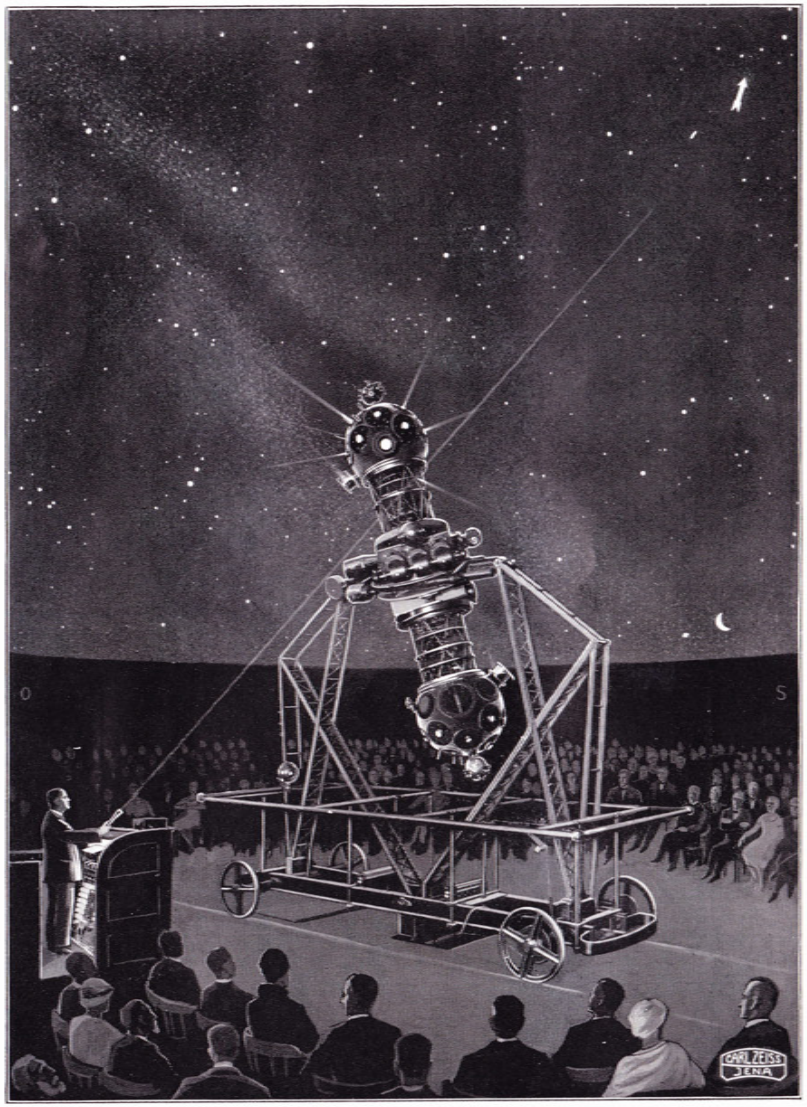
¼ act. size

DEKAR 10×

The prism binoculars shown on these two pages are selected on account of their good light transmitting power and their large field of view, which makes them suitable for both terrestrial and astronomical observation.

They comprise only a few of the 22 different models of Zeiss binoculars.

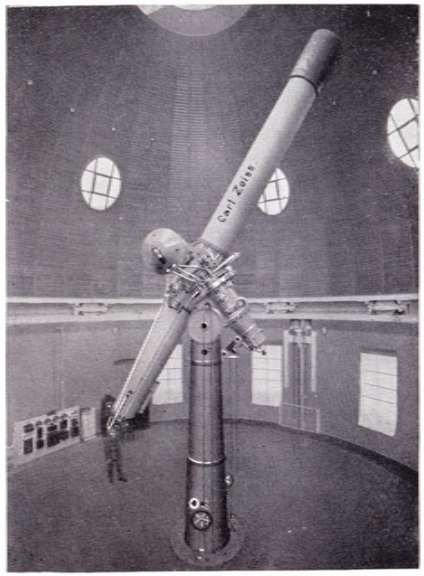
The full range
of
Zeiss Binoculars
is contained in the Zeiss Binocular catalogue, which may be had free on application.



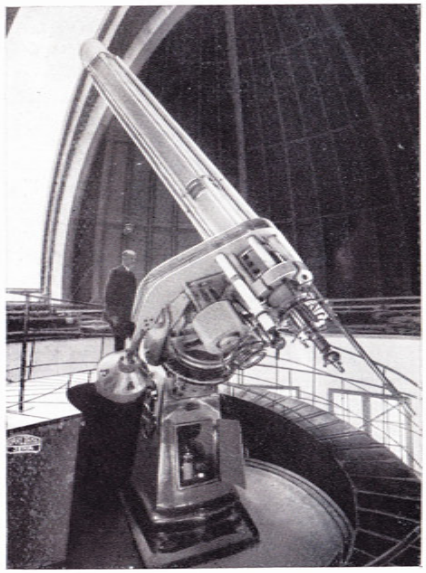
THE ZEISS PLANETARIUM

9301

An apparatus which projects by a battery of lenses the procession of over 5000 stars and the intricate movements of the sun, moon and planets on the interior of a dome, producing an impression absolutely true to nature.



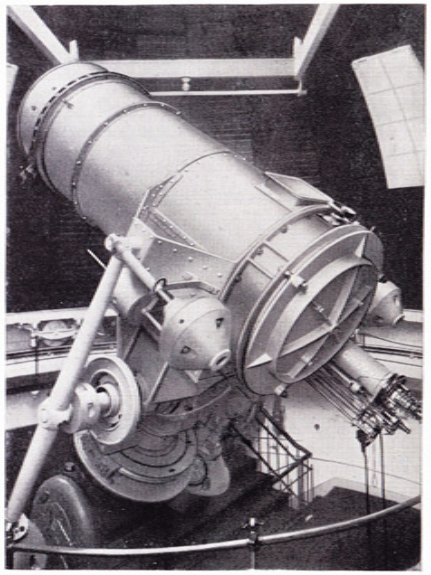
25½ inch. Refractor of Berlin-Babelsberg with Rising Floor in its lowest position. 9216



12 inch. Refractor of the German Museum at Munich. 9219



49 inch. Reflector of the Observatory at Berlin-Babelsberg. 9212



39¼ inch. Reflector of the Hamburg Observatory at Bergedorf. 9217

CARL ZEISS
JENA



CARL ZEISS JENA / 1928

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