SAN FRANCISCO BAY BIRD OBSERVATORY NEWSLETTER

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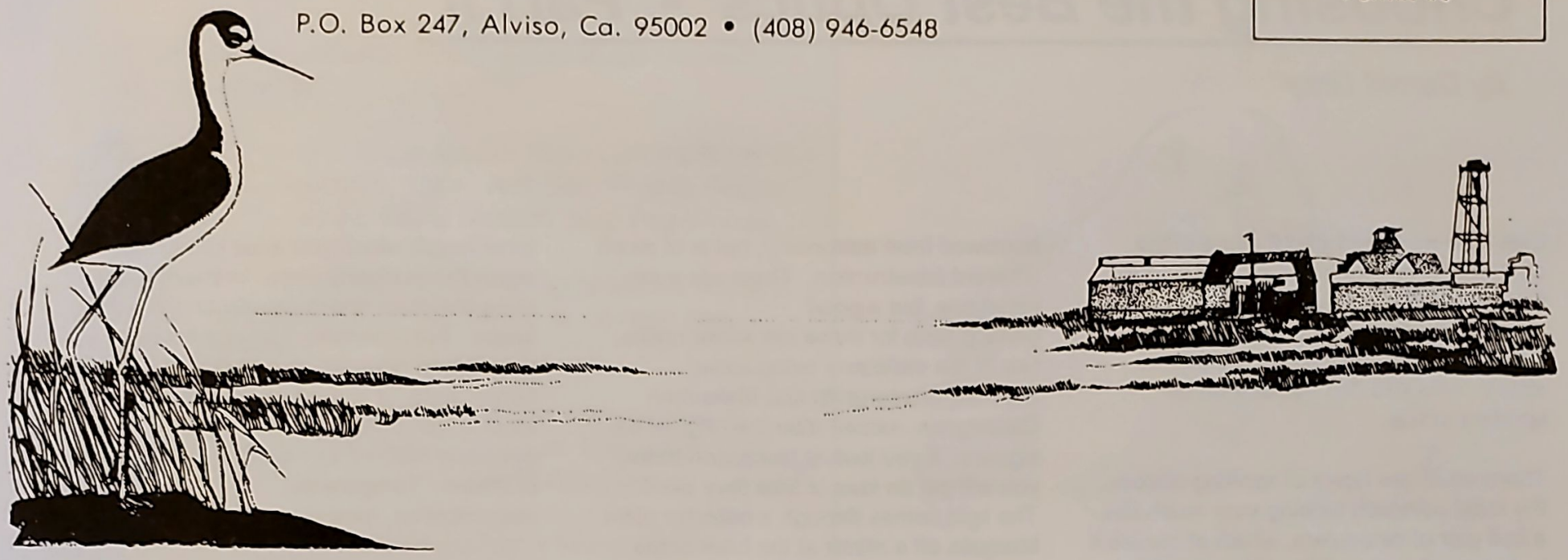


Volume 8, Number 5 September/October 1989

PRESIDENTS PERUSALS

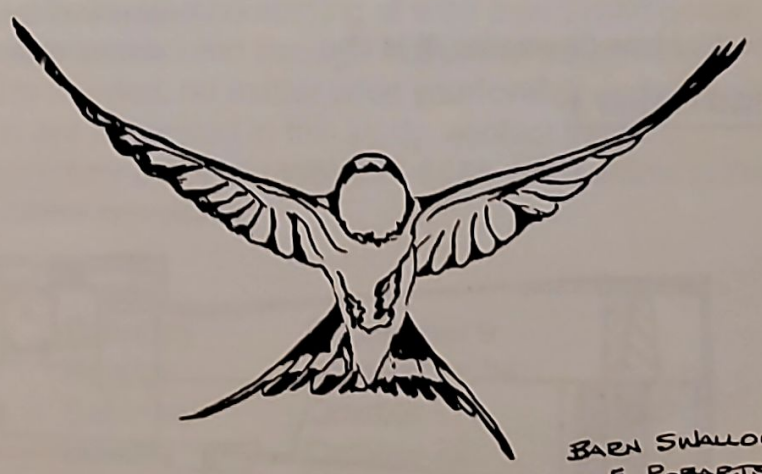
by Paul L. Noble

When I first started looking at birds, I did so for the same reasons most every other birder did. The beauty and grace of the bird are most obvious, but as I kept looking at birds at home and afar I discovered that birding became just more than looking at the birds themselves. As a birder I became very aware of the world around me and particularly the seasonal changes. The birds' migration and activities accentuated these changes.

I was out in the California Gull colony a couple of weeks ago, and seeing the gulls and their chicks in a certain stage of development I could almost to the day tell what the date was. The gull chicks were at the "runner" stage. To young to fly, but older than the "sit still and maybe he won't see us" stage. They looked hilarious waddling off the levee out into the salt ponds as one passes, only to paddle back to shore as the danger passed. In another month the entire colony will be deserted save for a few oportunists looking for leftover eggs or dead chicks. At that time one will know a change of season is about to occur. The calendar may not indicate so, but to me when I first see the shorebirds among the salt ponds in early August it is the beginning of fall.

With shorebirds the adults show up first followed by the juveniles a month later in fresh plumage. By the time one first has seen Dunlin it will be October. When the ducks begin streaming in, the first cold front and associated rains tell you that winter is here. Then in February when the ducks begin courting it will signal the beginning of spring even though snow may be visible on the surrounding hills. Before one knows the cycle has come around again. For me it makes a never boring existence. I always know what to expect as the changes are inexorable. Spring follows winter which follows fall which follows summer. The seasons change and the birds make these changes tangible.

If the reader would like to experience this tangible change, I encourage you to come out and participate in some of the Bird Observatory projects. I think you, like me, will begin to experience the seasonal changes by the comings and goings of the birds.



Mark your Calendar - Binocular/Spotting Scope Show, Saturday, October 28.

Choosing the Best Optics - Part II

by Darrell Gray

Last time we talked about some of the characteristics of binoculars and how to find the model that suits your purposes, and this month we'll extend that discussion to spotting telescopes, as well as simple tests you can perform on all sporting optics.

There are three types of spotting scopes, the most common looking very much like a half pair of binoculars, which of course it is, but much larger (Illustration 1). The difference is that you have a choice of eyepieces from the manufacturer, including zoom eyepieces in most cases. How you focus the optic varies, and some models allow viewing at an angle instead of straight through. This type is compact, rugged, and many models are available.

The second type of spotting scope IIIlustration 2) is borrowed from astronomy, and unlike the first type have no prisms, but a simple mirror. This means that the image is right side up, but reversed left to right. Viewing is done at a right angle. These scopes take more care in use and handling. The mirror assembly, the eyepiece, and the focusing mechanisms are more subject to wear and tear than the first type. But there are advantages. Your choice of eyepieces is vast, and because there is no prism to scatter light, they seem a little brighter for their size. They are, in general, reasonably priced and light weight. But they must be handled carefully.

The third type (Illustration 3) is also borrowed from astronomy, but is of much different construction. There are many variations, but a good generic term for these are mirror optics, two of the variations being called Schmidt-Cassergrain and Maksutov-Cassegrain, named after the original designers. If you look at illustration three, you will get an idea of how they work. The light comes through a collector plate, bounces off a mirror at the back of the scope, hits a little mirror attached to the correcting plate, and finally exits out the back of the scope. If you are wondering what you get for this effort, the answer is the ability to pack what would be a large telescope into a small package. These are available with front lenses of 90 to 100 mm. This means brighter images and higher powers. You generally view at a right angle, and the image is reversed left to right. Like the second type, a little more care in handling is necessary. They use widely available astronomical eyepieces. If you must have the highest power possible, these should have your attention.

As a last note on the two astronomical types, the numbers on the scopes and eyepieces are marked a little differently, and figuring out the exit pupil and power requires an extra step or two. Because the eyepieces will fit many types and sizes of scopes, the eyepieces do not give the magnification, but instead give the focal length, or the distance from the center of the lens to where it will focus a distant object. Also, the scope has a focal length which you must know, but again this is clearly stated in the manufactures literature and is usually on the scope. For example, I have a scope of the second type, which has a front lens 60mm wide. It is marked as having a focal length of 420mm. I have an eyepiece marked as having a focal length of 20mm. To figure out magnification, here is what you do:

To find the power: Divide scope focal length by eyepiece focal length.

420/20 = 21 power

If exit pupil is equal to front lens diameter divided by power, then I have about a 3mm exit pupil.

This is a bit tricky, but literature from scope companies give the specifications for their instruments, and astronomical stores have a pocket calculator for just such purposes.

So there are your choices. A standard half of a binocular giving you a rugged compact unit, but perhaps limited eyepieces. An astronomical unit giving you a better choice of eyepieces, but requiring more care. And the folded optics, or mirror lenses giving higher power, but having the same restrictions as the second type. The good and bad news is this: the astronomical types are getting more rugged, and the standard types are offering bigger objectives, giving us many choices that weren't available just a few years ago.

One hates to admit to prejudices when trying to explain a subject, but I must admit that in spotting scopes, to me, the bigger the front lens the better. Here is why I feel that way:

1. You will be putting a scope on a tripod, so bulk and weight are not as important — the tripod will be more of a hassle than the scope.

Illustration 1

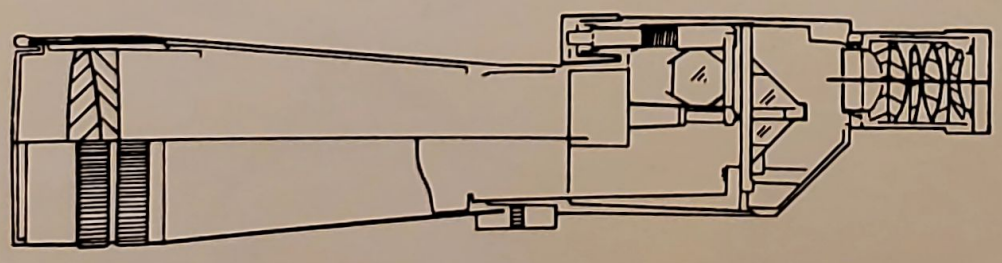
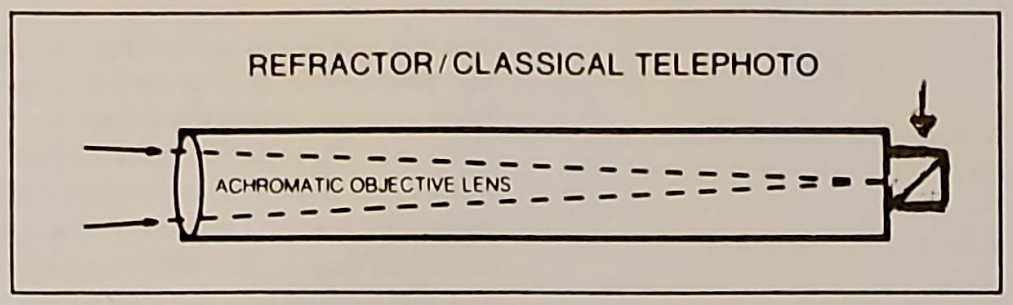


Illustration 2



Refractor

2. Most are about the same length. The ones with the bigger front lenses getting rounder, but not much longer, and are just as easy to handle.

3. With a small front lens either you stick to lower powers or you get a dimmer image, and that's not prejudice that's a fact. If you will recall from the article in the last newsletter, I said that there were three numbers that were important in binoculars: the power, the size of the front lens, and the exit pupil size, found by dividing the power into the front lens size. For example:

Power		Front Lense		Exit Pupil
7	into	35	=	5

In bright light, the pupil of your eye shrinks to about 2.5mm. The above binoculars would be quite comfortable in bright light, and also do pretty well in dim light. Now lets look at some numbers for common scopes on the market. Since you can get different eyepieces that give you different powers, I will pick eyepieces that give an exit pupil equal to 2.5mm.

Power	Front Lense	=	Exit Pupil
20	50		2.5
24	60		2.5
32	80		2.5

These powers are nice and bright in good light — a dim day or higher power and your view through the scope starts to darken. Most people put up with somewhat of a dimmer image to gain the higher powers. After all, the scope is on a tripod making for a steady view, but all in all the larger front objectives give you a broader range of powers and a brighter image. Most manufacturers offer several choices in eyepieces, and powers ranging from 15 to 60. Personally, I feel the lower the power you can tolerate is better than too high a power, especially for viewing over a long period of time.

Testing Them Out

The following tests are for all optics and can be easily performed. For binoculars, start by adjusting the binoculars to fit you. If you are wearing eye glasses, fold down the rubber cups for a better view. Then spread the binoculars — they all have a hinge between the two halves — until you can comfortably see through them. Next, most binoculars have one eyepiece that can be adjusted, and it is usually marked from plus to minus. Cover that half with your hand or a lens cap and look through the other side. Don't close your eye, or you will be squinting! Find the focus adjustment for the binoculars and focus on a far object and get it as sharp as you can. Now cover that side, and without touching the focus look through the other side. Rotate the eyepiece adjustment until the same object is sharp. Now check the setting on the eyepiece adjustment — that is the setting you will use for that pair of binoculars. The adjustment is there to balance any difference in your eyes. For example, with my glasses on, my setting is 0, but without my glasses it is -1. If you intend to use your binoculars with and without glasses, do this twice.

Alignment (Binoculars Only)

With both sides properly focused on a far object, center an object in the field of view. Alternately close each eye, and see if the centered object seems to jump — if it does the binoculars are not properly aligned.

Close Focus

This would seem simple, but there are a couple of catches. With binoculars, try with and without glasses — there can be a difference. With scopes, try the eyepieces you intend to use most often, and again with and without glasses.

Field of View & Eye Relief

Eye relief is often stated by manufacturers as a number, but for now let's say it's the ability to see as wide a field with glasses as without glasses. Try looking with the eye cups folded down, through the optics with eyeglasses or sunglasses on. Then fold the cups up, and try again. Some optics will show no difference in width of field, and others will show a considerable difference. Field of view, however, is a comparison. Two pair of 7 x 35 binoculars can have different fields of view, and two 60 mm scopes at 20 power can have different fields of view. But, if you must wear glasses, this is complicated by the ability of the optics to deliver that image to you. In general, small binoculars and high power scopes have the worst eye relief. However, most people seem not to mind a little loss of field if they can comfortably see through the optics.

Sharpness

This is a comparison test, and is fairly straightforward. Just be sure to compare apples with apples — compare 7 power binoculars with 7 power binoculars, not with 10 power. Do the same with scopes. Focus on a highly detailed pattern and look for the smallest detail you can see. Pick something with lines if possible, and try for an object that challenges the optics. Then compare. With a scope, compare 60mm scopes at the same power — don't compare a 60mm with an 80mm at the same power, because the 80mm will be brighter and you can get fooled. With binoculars, often the total design — the weight, shape, and feel of the binoculars aid in the sharpness, simply because you can hold some designs steadier. There are giant binoculars with superb optics, such as 11 x 80s that offer wonderful eye relief, a large image, and weigh a ton. They are very sharp — if you can hold them up.

Straight Lines and Color Fringing

These are two very different characteristics, but can be tested at the same time. Find a straight line, such as a power line that fills the entire field. Try to get a good

Continued on page 4

contrast difference, such as a bright sky and a dark line. Focus on the line in the center of view and then look carefully at the corners of the image. Does the line bend upwards or downwards? Then look along the line. Do you see a secondary color just above or below the line? Both these faults should be non-existent.

Contrast

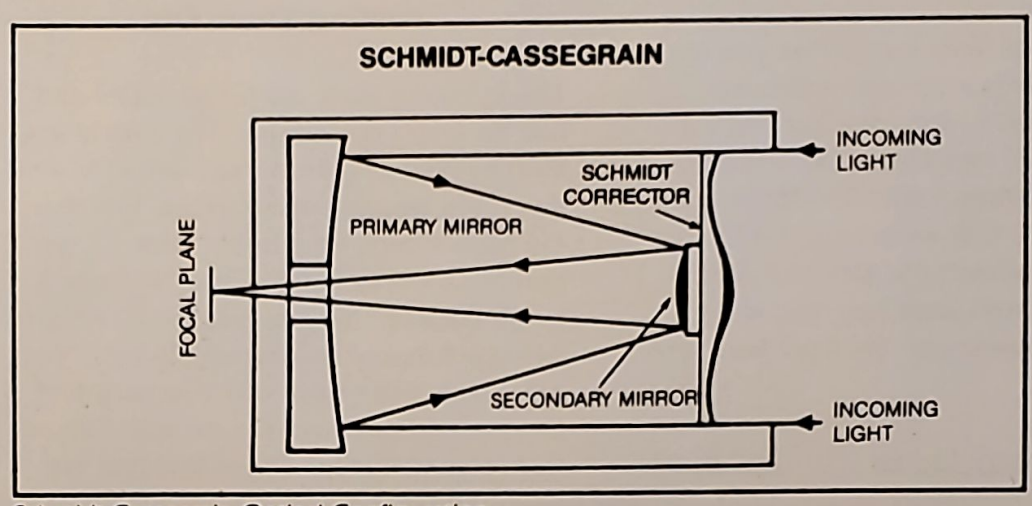
Imagine being in front of a dirty window and looking out. Everything looks O.K. until you open the window — suddenly there are brighter colors everywhere! Look into the shadows. Suddenly there are details that were not there. Everything stands out sharper, clearer, and better defined. This is contrast, and in comparing optics it is very important, especially when the light is low. When comparing optics try looking at a subtle area, such as a shaded area. Does one instrument make the area look more vivid than another? Does one make the difference between colors more intense? Can you see into shadows better? This is what contrast does for you. As always, compare optics of similar specifications.

Edges

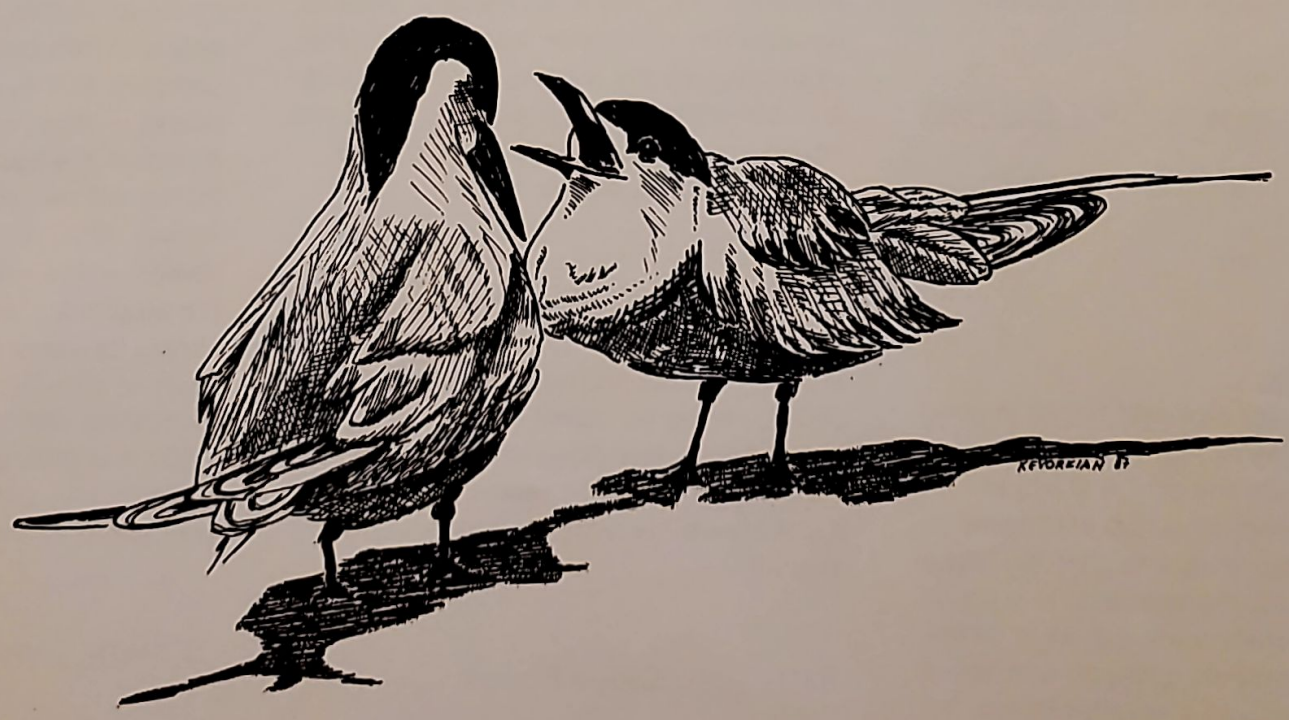
Be sure in doing any tests to check right to the edge of the field — the center is the easy part — getting it right the whole way across the field is the hard part.

The above tests are simple, but will weed out truly terrible optics. There are so many good instruments available today that it is silly to get something that doesn't suit your needs, or is of poor quality. I hope you can attend the Scope and Binocular Show on Saturday, October 28, from 1:00 - 5:00 p.m. at the Environmental Education Center in Alviso (see enclosed flyer). You will have a chance to handle and check out optics from many companies, and compare them in an outdoor setting. Hope to see you there.

Illustration 3



Schmidt-Cassegrain Optical Configuration



SFBBO TECHNICAL REPORTS

SFBBO has contributed time and data to the following technical reports:

1. The Effects of A Small Aircraft Airport On the Birds of the Palo Alto Baylands, 1984. Authors: Virginia Becchine, Phyllis Browning, Kathy Hobson and Peg Woodin.

2. South Bay Discharge Authority Comparative Marsh Study, 1984-1985. Authors: David W. Jensen and Nancy Norvell.

3. A Biological Survey of Fish & Invertebrate Use of Plummer Creek, South San Francisco Bay, 1986-1987. Authors: David G. Lonzarich and Kathy Hobson.

4. South Bay Dischargers Authority Water Quality Monitoring Program, South San Francisco Bay Avian Botulism Study, 1982-1986. Authors: Peg Woodin, Kathy Hobson and Susie Formenti.

5. A Biological Survey of the Vegetation of Plummer Creek, South San Francisco Bay, 1987. Authors, David G. Lonzarich and Kathy Hobson.

6. Avian Botulism and Wildlife Surveys Within Artesian Slough and Coyote Creek, 1988. Authors: Kathy Hobson and Peg Woodin.

7. Breeding Season Survey of Salt Marsh Yellowthroats Geothlypis trichas sinuosa in the San Francisco Bay Region, 1986. Authors: Kathy Hobson, Peter Perrine, Edward B. Roberts, Marti L. Foster and Peg Woodin.

We would like to thank all the volunteers that have made these publications possible. Without your help they would have not been possible. These publications are available at the Bird Observatory. A personal copy can be obtained for the cost of copying the report.

The Knapp Study

Survey trips for the Knapp Study are continuing everyother weekend starting at 9:00 a.m. Listed below are dates scheduled through November 1989. Your help is needed, no matter what yourlevel of experience. If you are interested in this study, contact the Bird Observatory office at (408) 946-6548. (See article in the May/June newsletter)

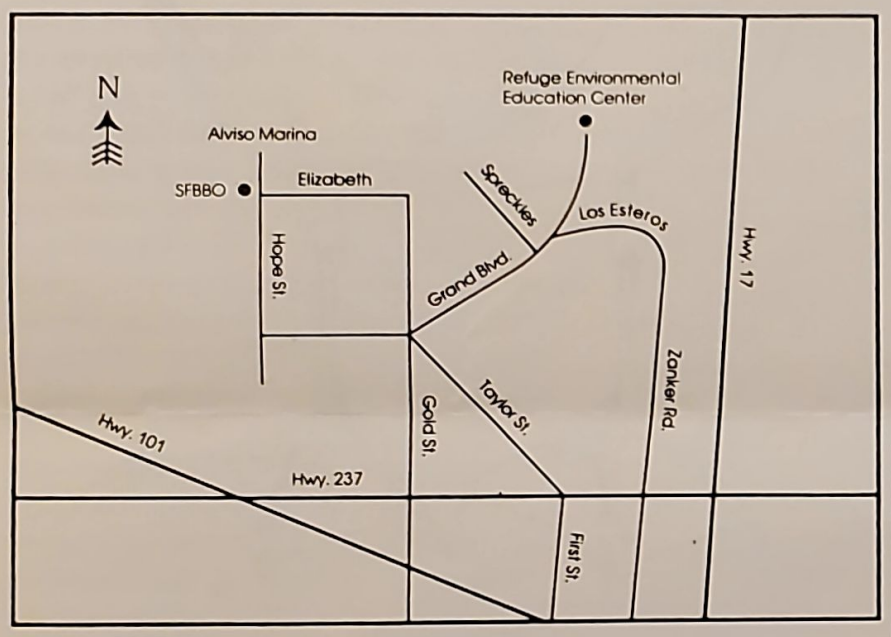
Saturday	September 9
Sunday	September 24
Saturday	October 7
Sunday	October 22
Saturday	November 4
Sunday	November 19

The Bird Observatory is located at 1290 Hope St. in Alviso. The office is open from 1-5 pm weekdays and some weekends. But before stopping in, call (408) 946-6548 and check the schedule.

The General Membership meetings are typically held on the first Thursday of each month, but are sometimes changed due to the availability of the speaker. The program starts at 7:30 pm at the San Francisco Bay National Wildlife Refuge Environmental Education Center in Alviso.(see map) The Board meetings are open to the membership and are held monthly. Call the Observatory office for dates and times.

The newsletter is a bimonthly publication. Send contributions to the editor: Susie Formenti, 16675 Buckskin Ct., Morgan Hill, CA, 95037.

The San Francisco Bay Bird Observatory is a non-profit corporation under IRS statute 501(c)3. All memberships and contributions are tax deductible.



SFBBO GENERAL MEETING PROGRAMS FOR 1989-90

General membership meetings are held on the first Thursday of the month (unless otherwise noted) at 7:30 p.m. at the San Francisco Bay National Wildlife Refuge Environmental Education Center in Alviso. (see map).

October 5, 1989	Clark Blake, Research Geologists, USGS. Topic: Geologic History of the San Francisco Bay Region.
November 2, 1989	David Suddjian Topic: Santa Cruz Breeding Bird Atlas.
December 7, 1989	Don Starks, SFBBO Executive Director. Topic: Gull Identifiction
January 4, 1990	Louise Accurso Topic: Her masters work on ducks of the San Francisco Bay.

* Denotes meetings not held on the 1st Thursday of the month.

OCTOBER PROGRAM SPEAKER

The speaker for the October 5th General Meeting Program will be Clark Blake, a Research Geologists for the U S Geological Survey. Clark will speak about the Geologic History of the San Francisco Bay Region starting with the older Mesozoic (160-60 million year old) rocks that underlie most of the area and then proceed to the younger deposits, culminating in the formation of the Bay and the current tectonic regime. Join us for this informative talk and a different view of the Bay

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I would like to join ☐ Renew my membership ☐ in the San Francisco Bay Bird Observatory.

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Make checks payable to SFBBO. Your gift membership is tax deductible.

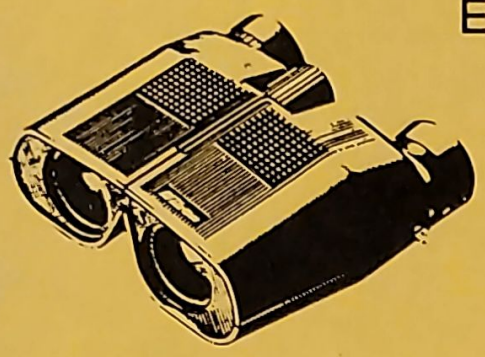
Student/Senior	$10
Regular	$15
Family	$20
Associate	$50
Contributing	$100
Sustaining	$200
Life	$400 *
Patron	$2000 *
Corporation	$500 *

* Single payment becomes part of an endowment fund.

SCOPE AND BINOCULAR SHOW

SATURDAY, OCTOBER 28, 1-5 p.m.

at the San Francisco Bay National Wildlife Refuge
Environmental Education Center in Alviso



FREE TO THE PUBLIC

Come see and handle the latest in spotting scopes and binoculars from top manufacturers such as:

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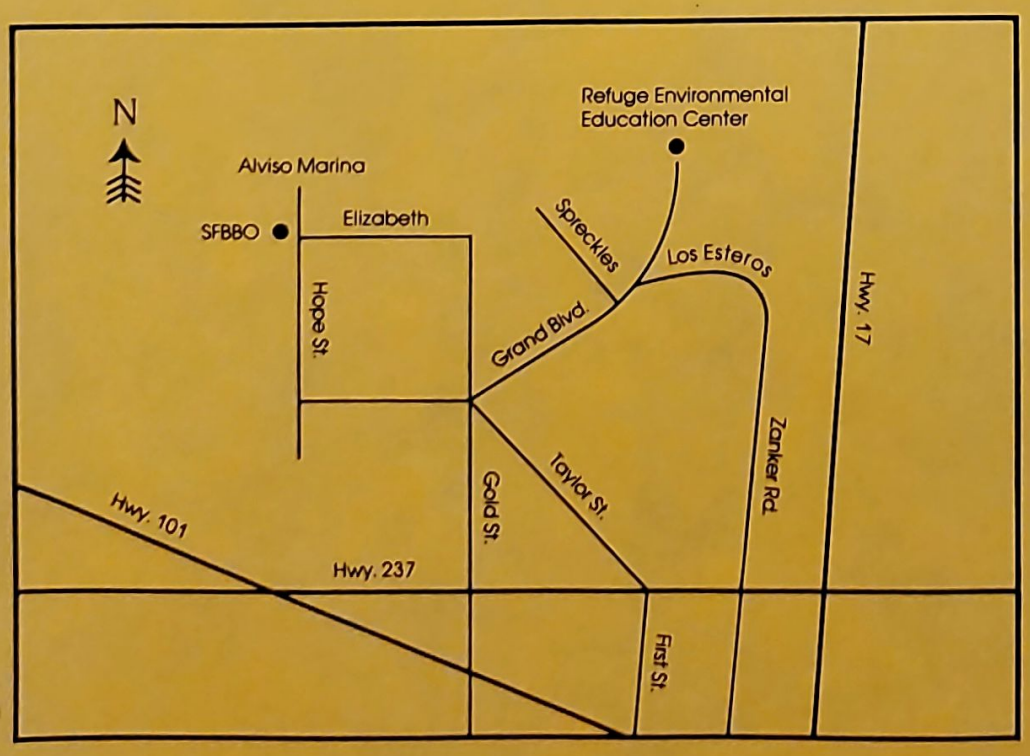
- Free Lectures
- Free Demonstrations
- Free Doorprizes
- Outdoor test patterns for comparing the latest and best in sport optics

Lectures on use and selection of optics - 1:00 P.M. and 3:00 P.M.

Demos on optic care and cleaning will be held all afternoon



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For further information call (408) 946-6548 or write:

San Francisco Bay Bird Observatory

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