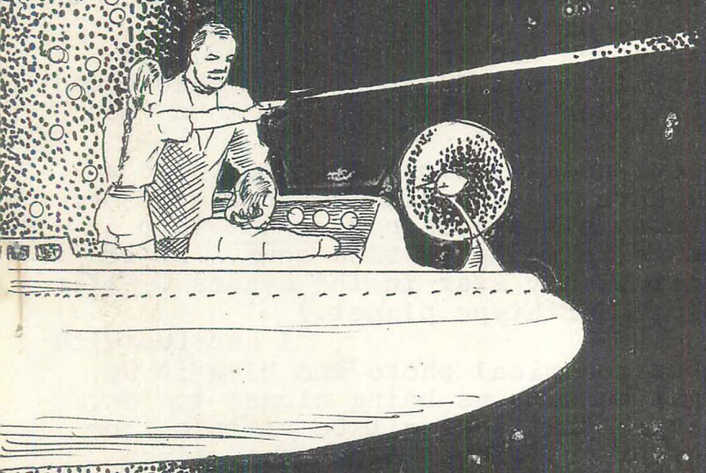
JANUARY 1964



A VIEW FROM THE BRIDGE: CELESTIAL HALO AT NEAR-LIGHTSPEED. AHEAD, THE HYADES CLUSTER — SEEN BY ULTRAVIOLET "EYES" — AND OUR FIRST STOP, A SUN AT ITS EDGE.... (PLATE 3)

THERE ON THE COVER this month, Robbie is showing a couple of interesting characters where we're going while I am busy chewing out a pair of jokers-who-shall-remain-nameless down where we are building a star chart of the Ridge. Which we have since left behind. Now, it may be that this is confusing. So I shall explain.

Last September, we began to construct a half-mile-wide starship out behind the Moon -- using 20 little liftboats to shuttle equipment & whatnot out from Earth. In October, we named that starship H.M.S. Indecontaminable and proceeded to shanghai 500 fans out to it, plus provisions for a 1,000-lightyear trip. And we took off, having everyone frozen solid in the Cooltanks, at 100 g's acceleration. So in the November issue, we had reached almost the speed of light and eased off to 1 g acceleration and thawed everybody out. In the December ish, last month, we had already reached the giant sun Regulus at the far end of our local cluster of stars, and shot off into Deep Space toward the next cluster, the Hyades.

We are now about halfway to the Hyades Cluster. We've picked out a binary star with a system of planets on the edge of that cluster, and that's what Robbie is showing 'em on the Bridge, right now. She has to show 'em on a projected view of the stars ahead of us, because those stars aren't visible to us except by scanners sensitive to deep ultraviolet radiation. In fact, the only stars we can see at this speed are in a rainbow-colored ring with the nearest stars moving through it, about 41° back from dead-ahead -- the stars suddenly appear deep blue, brighten to yellow-white, then fade to deep red and disappear.

At this point, our acceleration has dropped to a mere 0.1 gravity; and presently, we shall have to take all the furniture off the floor and put it on the ceiling, because this starship does not turn itself around tailfirst to decelerate. And we're going to slow down. We're going to visit one of those planets at that binary star in the Hyades Cluster. (In case you're wondering, it will not be an Earthtype planet.)

I had fun with that view of the Hyades, tho. I took an astronomical photo and blew it up, displacing the stars somewhat as they might be with us being closer to 'em, adding a mess of far-distant background stars that wouldn't be visible from Earth, and -- completely omitting the big, bright orb of Aldebaran, since that giant sun is only 53 lightyears from Earth and is in our own cluster while the Hyades are a cluster about 35 lightyears in diameter with its center roughly 130 lightyears from Earth. 'Twouldn't do to have Aldebaran in there!

However, on all this trip out we've had things to do. And it hasn't been until now, when we're way out from our own cluster and halfway to the Hyades, that I've had a chance to publish the results of all that work. So here we are building a star chart of our cluster, even tho we've left it behind .... and next month, I'll show you a composite of all the photographs we took of our cluster as we came out through it. (By then, we'll be close enough to that binary star in the Hyades to pick out the planet we want to explore.)

LAST YEAR'S FANZINES has me looking not only at my own output, here, but at the ill-sorted piles of fanzines around the house that we've received from others. We've received the majority of 'em without ever asking for them or responding in any way to their editors; we wouldn't get a tenth this many unsolicited fanzines if we weren't publishing one, ourselves, with Buck Coulson printing its address nearly every month in his fmz reviews. Apparently, the only way I can stop this influx of fanzines we do not ask for is stop having Coulson review g2, so that's what I've done. Now we'll see if it works.

The rest of 'em, of course, are fanzines we did ask for

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( ) We saw your address somewhere; this is a sample copy.

plus a few from personal friends that we were pleased to get. But this is a problem we never had 4 years ago ... if you're at all envious, you may be very much like we were in that (1) you almost never write letters to anyone, and (2) you have no intention of publishing your own fanzine. Going through the 'zines we got last year, I find they break down something like this:

MEIN OMP-F is an Ompazine - A PROPOS DE REIN is a Fapazine - GRIGNOLINO is a Sapzine - THE SHADOW FAPA is a Shapazine - SAVOYARD is an Ompazine - DETROIT IRON is another - THRU THE HAZE is an N3Fzine - MOONSHINE is a Fapazine - YEZIDEE is a Sapzine - HORIZONS is a Fapazine - ASP is the same. (Presumably we should belong to those amateur publishing associations if we wished to get these regularly; we don't belong to a single one, tho.)

LASFS NEWSLETTER is for anyone they think is interested, I guess - OUTPOST is an Ompazine also had for trades or LoCs or $1 a copy, it says - THE SCARR says nothing about how it's to be had - VIPER is an Ompazine also to be got for Letters of Comment, trade or 25¢ each; published irregularly, now - ROT says nothing about why you got it; this is the Summer 1961 issue, for chrissake! - MOTLEY doesn't say how you got it, either - LES SPINGE is 15¢ each or for trades or LoCs - TENSOR is 15¢ each or for trades or LoCs - THE GOLDEN HARP doesn't say - ISCARIOT is 15¢ each - GARDYLOO is a N'apazine also had for 15¢ each - MICROTOME is 10¢ each or maybe free - THE BUG EYE (West Germany) can only be had for LoCs or trade. (With no fanzine of your own to trade, and no letter-writing proclivities, you can only get some of these by sending money for each separate issue -- if you can find out when it's published.)

SCIENCE FICTION REVIEW has sub rates like 10 issues for $1, 22 for $2 or 45 for $4 - on the other hand, CADENZA is for trades, LoCs or 20¢ each and says "maximum subscription is one dollar" - FANTASY FICTION FIELD is 10¢ each, 13 for $1 - SKYRACK is 6 for 35¢ - STARSPINKLE is 3/25¢ - YANDRO is 25¢ each or 12 for $2.50 (renewal subs $2) - GALAXY REPORTER is available for LoCs or trades or 10¢ each, 6/50¢ and 2 years for $1 - DYNATRON is 15¢ each or 8/$1 - SCOTTISHE is an Ompazine, also for trade, LoCs or 50¢ a year - FANTASY NEWS is 10¢ each, 3/25¢ or 12/$1 - JARGON is 25¢ each, 5/$1, 11/$2 or trade or LoCs - SHANGRI-L'AFFAIRES is 25¢ each or 5 for $1 - SPECTRUM is 6 for $1 - DOUBLE BILL is 20¢ each or 6 for $1. (We've subscribed to 5 of these and got the others for nothing.)

Now, if you're the kind of person I've described here, I don't know if it's exactly fair that we should get these fanzines for nothing when you don't and, in some cases, can't. Sometimes I think what someone ought to do is publish a monthly Mailing List in some fanzine, where anyone could get their name & address on the List any time they wanted to, free. But of course, the active fans who join everything in sight don't need it, while the N3F is supposed to take care of everyone else provided they join it; I suppose fandom wants to make damned sure it can force you to join something, whether you like it or not. Or maybe I just enjoy telling 'em to go to hell.....

Of course, you non-writing fans know you're definitely a small minority here. Most of the readers of any fanzine today are letterhacks to an extent that each might publish his own fanzine -- and there's this blind social reaction of the crowd implying that "You Gotta Publish Or You Aren't In." But in g2's particular readership, many of these letterhacks join you non-writers in preferring a cash subscription and not having to write a Letter of Comment on each issue of this 'zine. They're obliged to fill demands for so many LoCs elsewhere that they're glad to escape it here. Fanzines weren't always like this, tho.

The ones I've listed overpage aren't all we have here, being just the piles I have within reach at the moment, but I think they're a fair sampling. Some that appear not to accept subs may do so if asked; they simply didn't think it necessary to say so in print. But I don't think it's "unfair" of those editors who demand letters from their readers -- I simply consider it foolish. It's as if they want to drive you out of fandom if you won't play their little game; and since this isn't their intention or meaning at all, I can't help but wonder if there isn't some better way to do it, because this is exactly the result it has. But there's nothing really unfair about that if it doesn't become too prevalent.

But you can't judge whether or not it's "too prevalent" just by counting the number of fanzines which do or don't follow that policy. It is most certainly far too prevalent when some fans think it's mandatory for all, that it must be conformed to by any editor -- and that anyone who doesn't conform should not only be criticized, but condemned as the rascally fellow he is! It is far too prevalent when such condemnation is accepted as being just and proper by others.

It was for this reason alone that I've made such statements as I have, that it's just too damned bad I won't send g2 free to anyone who writes me a LoC. And naturally, those who had condemned my policy immediately charged that I was attacking everyone who endorsed that "free for LoCs" policy -- but by that time, I was already doing exactly that. If they thought I was going to be reduced to crying "foul!" and complaining that I was being maligned and misinterpreted, they damn well had another thought coming.

So now that's taken care of, and it's time I restated my position. If other fanzine editors want to follow any other policy, that's their problem; but if I consider it foolish, I'm going say so whenever I please. That's my problem. However, whenever anyone assumes they can force me to follow any policy while others just sit back and grin about it, that's liable to become a problem for several people before I'm done swinging the cat around here. I don't fight fannish feuds the way fannish feuds are fought if I can help it -- there's no gain, that way. I don't look for friends to take my side -- let 'em go find their own feuds, for chrissake! -- and I don't particularly mind how big a crowd my opponent gathers round. I know damned well, if he doesn't, that neither one of us is going to win, that we're both going to get hurt, and the whole silly business is a waste of time.

NOW THEN, A MELLOW NOTE is one thing I'd never anticipated for this colyum which I usually fire in short bursts and is not called "Noise" without reason. But there were some happenings of this past Holiday Season which deserve mention in print. So like it or not, you're going to have me waxing mellow here. I make no apologies for it.

This year, Karen Anderson made spiced honey ... whereupon, as with previous Holiday Seasons and fruitcakes of some note, the Andersons proceeded to make assorted & merry distribution of this largesse throughout many kingdoms and ducal keeps. I am very pleased to mention, loudly and particularly at breakfasttime, that Robbie and I were recipients of one such lot of spiced honey. A good dab of it spooned onto French toast, and I sit beaming delight not unlike some benign pet grizzly.

Of course, it doesn't quite go with the box of mixed nuts Ron Ellik sent us -- "Thought of you Gibsons the moment I saw it!" says Sir Ronel --

-- but then, Rog Phillips says that was no Xmas gift, that was just Mr. Squirrel depositing one of his winter caches with us, thassall that was. But I always had some reservations about that "Squirrel" business, myself. A bushy tail don't necessarily denote no squirrel to my mind, especially if it's chasing chickens.

If I were going on with this, I should have to mention turkeys at the Ellingtons. And Big Bill Donaho's eggnog, this time around. And Xmas dinner with a Chinese family. And Tony Boucher's sons with their younger set having a very nice New Year's Eve party, all the fellows slicked up and in suits, all the girls decked out in fashionable frocks, everyone behaving with fine social aplomb -- I remember watching 'em from the dining room where us oldsters were raising the roof with a poker game and feeling a bit reminiscent about my own younger days. Tsk.

But getting back to food, now, I should've known when Robbie started saving up those 1-lb. coffee cans that she wasn't contemplating anything practical or sensible or thoroughly tested and of proven merit. Like, for instance, building a tower out of beer cans. With coffee cans, maybe it'd lack something aesthetically such as dirty streaks of dried foam and a generally sticky appearance and those cute, little three-cornered church-key holes. Anyway, Robbie was not building anything with 1-lb. coffee cans even if they were the tall, narrow kind with plastic lids.

Maybe it was the plastic lids that did it. Anyway, she painted 'em with two coats of gloss white enamel and had me put bands of colorful, Xmas-decorated Scotch tape around 'em and inserted little, white paper doilies under the plastic lids. All eighteen of those coffee cans.

Then she proceeded to turn the whole, blamed house into a candy kitchen.

She didn't make fudge. Or pull-taffy. Or divinity, whatever that is. Or any of them other "home-made" kinds of candy. She makes big globs of stuff that fills up the refrig like pan-bread dough or maybe modelling clay, then starts rolling out little, round musket balls of around .41 caliber and giving 'em a fast dip in a saucepan of boiling hot chocolate. Then she makes a trough full of gooey mass that jells on the back porch and gets diced into little squares and jiggled around in a sackful of sugar and comes out like square gumdrops. Then she makes a batch of hard candy that doesn't pan out so well -- in fact, it came outta the pan a little like schrapnel -- and then several more batches in assorted clear colors cut in large&small chunks that have a tendency to weld into a rockhard mass, so I guess there's a bit more experimenting to be done with that one yet. I know she had ten flavors of dipped chocolates, and there were several flavors of gumdrops and maybe a half-dozen or more of the jawbreaker class.

That wasn't so bad, but she had the desk cleared off and pans of the stuff spread all over it and everything else in the study, with me and the four cats firmly shut out, except that I got tagged as pan-shuttler. I got served my meals off a small corner of the kitchen table for two weeks. And all the LoCs, subscription monies and Xmas cards (we didn't send any) were distributed in small caches all over the house. But we finally crammed all 18 cans full and loaded up the Fiat with 'em and got rid of the stuff -- well, most of it. And I'm doing a pretty fair job of getting rid of what's left. (Y'see, neither of us put on fat or need bother with diets...)

And it was just too darned awful, Robbie says, that Karen Anderson got off her fruitcake kick this year just when Robbie was preparing to show her up. Whereupon Robbie carves off another piece of French toast, slops it around in rich pools of spiced honey, and downs it with a most satisfactory slurping and lip-smacking sound.

With all that, now, this seems like a good issue to be giving you a full-page ATOM illo. You'll find it there in LOX somewhere; you may recall I discussed it some issues back. I certainly hope it's repro'd well....

BUILDING A STAR CHART~~

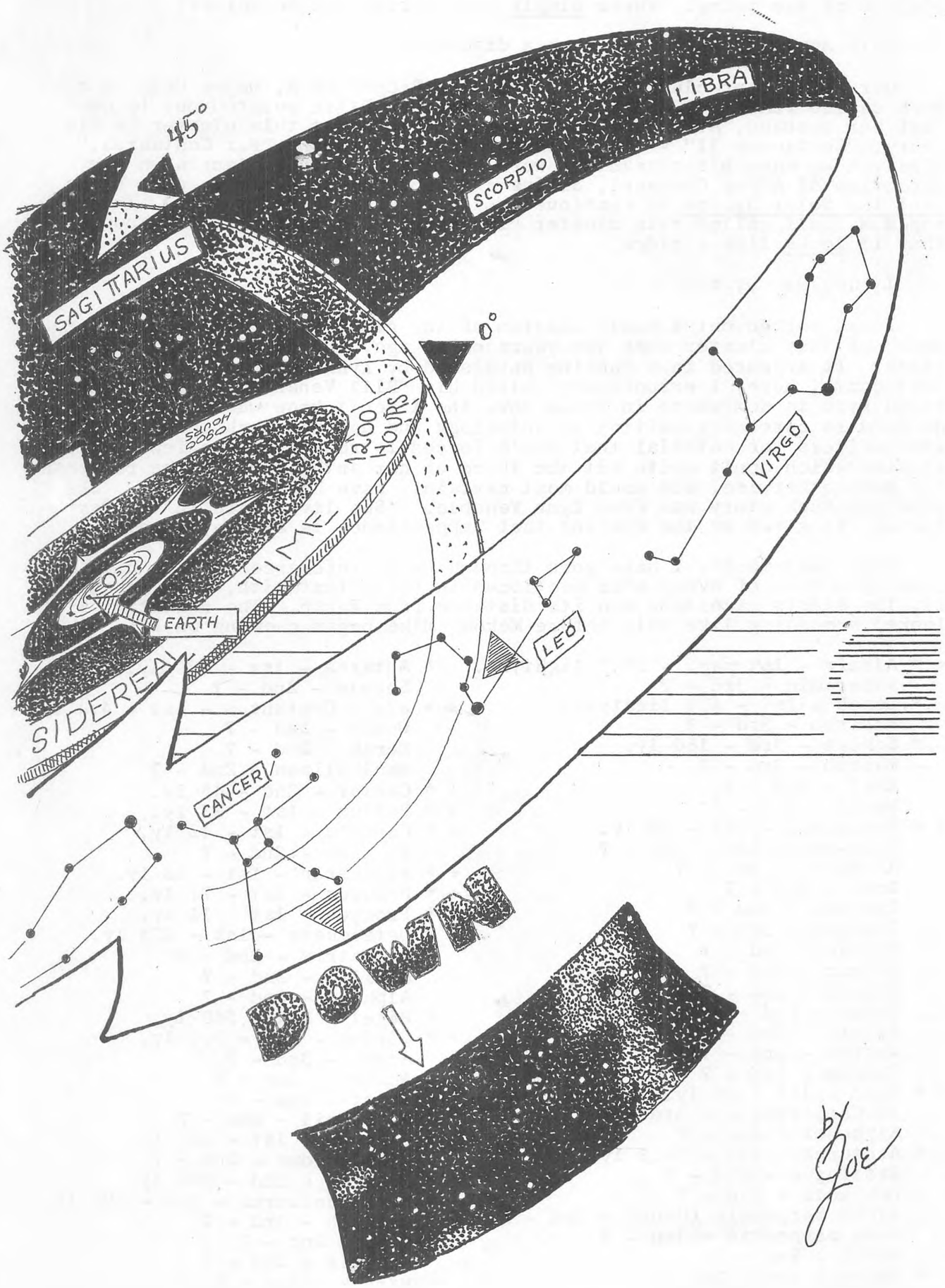
OR

THE 'UPS AND DOWNS' OF AN

INTERSTELLAR SCOUT

PART TWO OF THREE PARTS

THE ONE THING which I cannot stress enough in this business is that we'd better expect some few surprises. This is, after all, research -- and in doing research, you can make an occasional discovery. It can be something you didn't expect to find at all, yet so simple a thing that you feel stupid for not having at least suspected it all along. And it can be a major discovery which changes the whole


LIBRA
45°
SCORPIO
SAGITTARIUS
0°
SUNDAY 2000
1200 HOURS
TIME
VIRGO
EARTH
LEO
SIDEREAL
CANCER
DOWN

by Joe

picture of the thing. These simple discoveries can be murder!

This month, I have made such a discovery.

Our local star-cluster was named "The Ridge" by E. Mayne Hull in a book called PLANETS FOR SALE. (Recently, Ron Bilik pointed out to me that her husband, A.E. van Vogt, at least hinted at this cluster in his story, "Centaurus II" -- which is not the betterknown "Far Centaurus," mind you -- when his characters were hunting Earthtype planets in the direction of Alpha Centauri, Sirius and Procyon, then had to come back past the Solar System to continue exploring stars farther out.) The reason E.M. Hull called this cluster "The Ridge" was the perfectly good one that it looks like a ridge.

I thought so, too.

I had worked out a basic diagram of the giant suns forming the "backbone" of this cluster some ten years or so ago, and it did look like a ridge. It appeared in a fanzine published by Lynn Venable, in Pittsburgh; last month, here, I erroneously called him "Bill Venable" -- and I understand Lynn is somewhere in Texas now, tho I don't know where. Miriam Allen de Ford is currently editing an anthology and has had such good response from writers for material that she's forced to reject even a few excellent stories which don't quite fit the theme of her anthology; if the response had been otherwise, she would most certainly have had to use them. She says one such story was from Lynn Venable. (She lives here in the Bay Area.) It gives me the feeling that happenstance is at play here, too.

This past month, I have gone through every reference book on hand and made up a list of every star mentioned in their text with, where they gave it, the star's magnitude and its distance from Earth. The resultant list looked something like this before Mekong Mike began chewing on it:

+ * Altair - 1st mag. - 15.7 lightyrs.
  Alderamin - 3rd - ?
  * Deneb - 1st - 400 lightyrs.
  Albireo - 3rd - ?
  * Scheat - 3rd - 160 ly.
  Markab - 3rd - ?
  Enif - 3rd - ?
  Nunki - 2nd - ?
+ * Fomalhaut - 1st - 23 ly.
  Kaus-Australis - 2nd - ?
  Al Na'ir - 2nd - ?
  Indi - 3rd - ?
  Pavonis - 2nd - ?
  Tucanae - 3rd - ?
  Kochab - 2nd - ?
  Etamin - 2nd - ?
  Alkaid - 2nd - ?
  Mizar - 2nd - ?
  Alioth - 2nd - ?
  Megrez - 3rd - ?
  Phecda - 3rd - ?
+ * Vega - 1st - 26 ly.
  12 Can. Venat. - 3rd - ?
  Alphecca - 2nd - ?
+ * Arcturus - 1st - 38.3 ly.
  Rasalague - 2nd - ?
  Denebola - 2nd - ?
  alpha Serpentis (Unuk) - 3rd - ?
  nova Serpentis - 3rd - ?
  Sabik - 3rd - ?
  * Spica - 1st - 190 ly.
  Dschubba - 3rd - ?
  * Antares - 1st - 220 ly.
  Shaula - 2nd - ?
+ * alpha Centaurus - 1st - 4.4 ly.
  Dubhe - 2nd - ?
  Merak - 2nd - ?
  Menikalinan - 2nd - ?
+ * Castor - 2nd - 45 ly.
+ * Pollux - 1st - 33 ly.
+ * Capella - 1st - 42 ly.
  El Nath - 2nd - ?
+ * Aldebaran - 1st - 53 ly.
+ * Regulus - 1st - 77 ly.
+ * Procyon - 1st - 11 ly.
  * Betelguese - 1st - 275 ly.
  Bellatrix - 2nd - ?
  Alnilam - 2nd - ?
  Alphard - 2nd - ?
  * Rigel - 1st - 540 ly.
+ * Sirius - 1st - 8.6 ly.
  Arneb - 3rd - ?
  Adhara - 2nd - ?
  Phact - 3rd - ?
  Al Suhail - 2nd - ?
  * Canopus - 1st - 100 ly.
  Miaplacidus - 2nd - ?
  * Polaris - 2nd - 500 ly.
  * beta Centaurus - 1st - 190 ly.
  Ruchbah - 3rd - ?
  Caph - 2nd - ?
  Schedir - 2nd - ?
  Marfak - 2nd - ?
  * Algol - 2nd - 100 ly.

Almach - 2nd - ?
Mirach - 2nd - ?
Alpheratz - 3rd - ?
Hamal - 2nd - ?
Sheratan - 3rd - ?
Algenib - 3rd - ?
Menkar - 3rd - ?

Deneb-Kaitos - 2nd - ?
Acamar - 3rd - ?
alpha Doradus - 3rd - ?
* Achernar - 1st - 70 ly.
* alpha Crucis - 2nd - 220 ly.
* alpha Herculis - 3rd - 800
* Mira - (variable) - 165 ly.

Mike is our fat Siamese -- full name: Mekong Rice Whiskey Mike -- and he doesn't really eat paper; he just likes to keep his dentures clean and it's unfortunate that his old man, Ming Fu, didn't develop the same habit in kittenhood. Ming Fu recently had 7 teeth pulled.

As I compiled the above list of stars, I marked those (*) that I'd found distances for. Then out of those, I marked the ones (#) which belong in our local cluster of suns -- but this took a bit more research. If I merely took all stars within, say, 100 lightyears I should have included Achernar, Algol and Canopus.

But to diagram the locations of these stars, you've got to find which direction each of them is from Earth, too. For this, you need one of the standard star charts of the Earth's sky. Mine is the WORLD STAR CHART No. 9574 published by the American Map Co., Inc. These charts show the stars visible to the eye in Earth's sky, and it's marked out in a grid similar to any map except that degrees of Longitude are replaced by hours of Sidereal Time and degrees of Latitude by angles of declination; then there's some gobbledygook about how you figure out which hunk of the chart shows the stars in your sky wherever you are at whatever time of year it is.

What it boils down to is using your wristwatch dial for a compass -- assuming you happen to wear a 24-hour wristwatch -- and with zero-hour pointing in a certain direction, you proceed to say that star is at 6 o'clock and that star is at 1830 hours and so on. And rather than just saying it's at "6 o'clock high" you say it's at 0600 hours and 52° North; or if it's "6 o'clock low" you would maybe say it's at 0600 hours and so-many-degrees South.

In using this for interstellar navigation, we at least don't have to bother about where somebody is on Earth at whatever time of year. We don't even have to bother with North or South; we can simply call those directions Up and Down. A moment's study of a standard star chart will show that (for some reason I'm not bothering to look up) Earth's astronomers have decided (centuries ago, no doubt) that "zero-hour" should point somewhere smack in the middle of the constellation Pisces, with the rest of the constellations of the Zodiac marching around this clock-dial. So that's our flat plane of directions -- it's the Ecliptic Plane, of course, with all the planets of our Solar System orbitting in it, so the astrologers have Mars in Taurus and Jupiter in Virgo and junk like that. Straight up from this clock-dial are the Big and Little Dippers and the North Star; straight down are the Milky Way, the Coal Sack, the Magellanic Clouds and the Southern Cross.

As you've seen here, I drew all this up ... and you might notice that we're viewing it from a position slightly "high" and at approximately 1600 hours. I'm going to use approximately this same position from now on, just backing off far enough to take in the whole star-cluster.

Using a standard star chart, we can make up a new list of the stars within this cluster. As you see, I included Achernar, Algol and Canopus in this list:

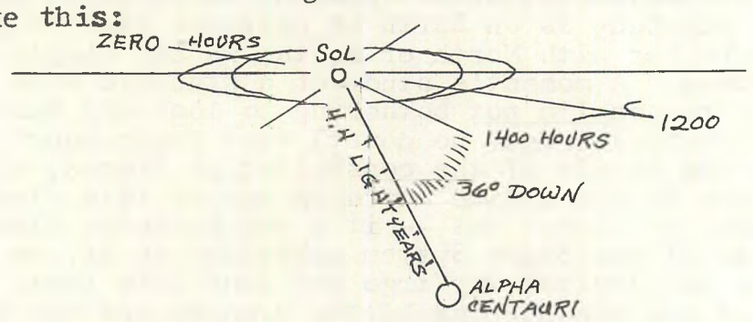
Alpha Centauri	4.4 lightyears	14 Hours 3 Minutes	36°4' Down
Sirius	8.6 lightyears	6 Hours 42 Minutes	16°38' Down
Procyon	11. lightyears	7 Hours 36 Minutes	5°23' Up

Altair	15.7 lightyears	19 Hours	47 Minutes	8°43' Up
Fomalhaut	23. lightyears	22 Hours	54 Minutes	29°56' Down
Vega	26 "	18 "	34 "	38°44' Up
Pollux	33 "	7 "	41 "	28°10' Up
Arcturus	38.3 "	14 "	12 "	19°30' Up
Capella	42 "	5 "	12 "	45°56' Up
Castor	45 "	7 "	30 "	31° Up
Aldebaran	53 "	4 "	32 "	16°23' Up
Regulus	77 "	10 "	5 "	12°16' Up
Achernar	70 "	1 "	35 "	57°32' Down
Algol	100 "	3 "	5 "	41° Up
Canopus	100 "	6 "	22 "	52°40' Down
Spica	190 "	13 "	22 "	10°51' Down
Antares	220 "	16 "	25 "	26°18' Down

One look at these figures, and I drew the line at Regulus. Achernar was out. The next nearest of the giant suns to it would be Aldebaran in clockwise direction, but Aldebaran's 16 degrees Up while Achernar's more than 57 degrees Down -- and with them 53 and 70 lightyears out, respectively, you know they aren't anywhere near each other at all. So Achernar is way down there by itself, while Aldebaran has the other giant suns located around it forming the distinct pattern of an open cluster.

Algol is off in the same general direction as Capella, but it's almost twice as far out, which makes it a little 2nd Magnitude sun 'way out on the fringes of the cluster. Canopus is the same as Achernar, too far down to be in the main group. With it, I threw in Spica and Antares to show that the giant suns nearest our cluster are pretty widely scattered down in that direction. There's a neighboring cluster, down there; it includes 10 stars in the constellation Scorpius and 4 stars in the Southern Cross, and Antares is one of them. So is Acrux, or alpha Crucis (being one of those 4 stars in the Southern Cross) which by odd chance also happens to be 220 lightyears from Earth. That makes it the second-farthest neighboring cluster beyond ours. I call it Kapteyn's Cluster, after its discoverer, though he calls it the Scorpius-Centaurus group.

I used to take a list of our cluster's giant suns, like the above one, and try to doodle a little diagram of their locations. It would start out something like this:

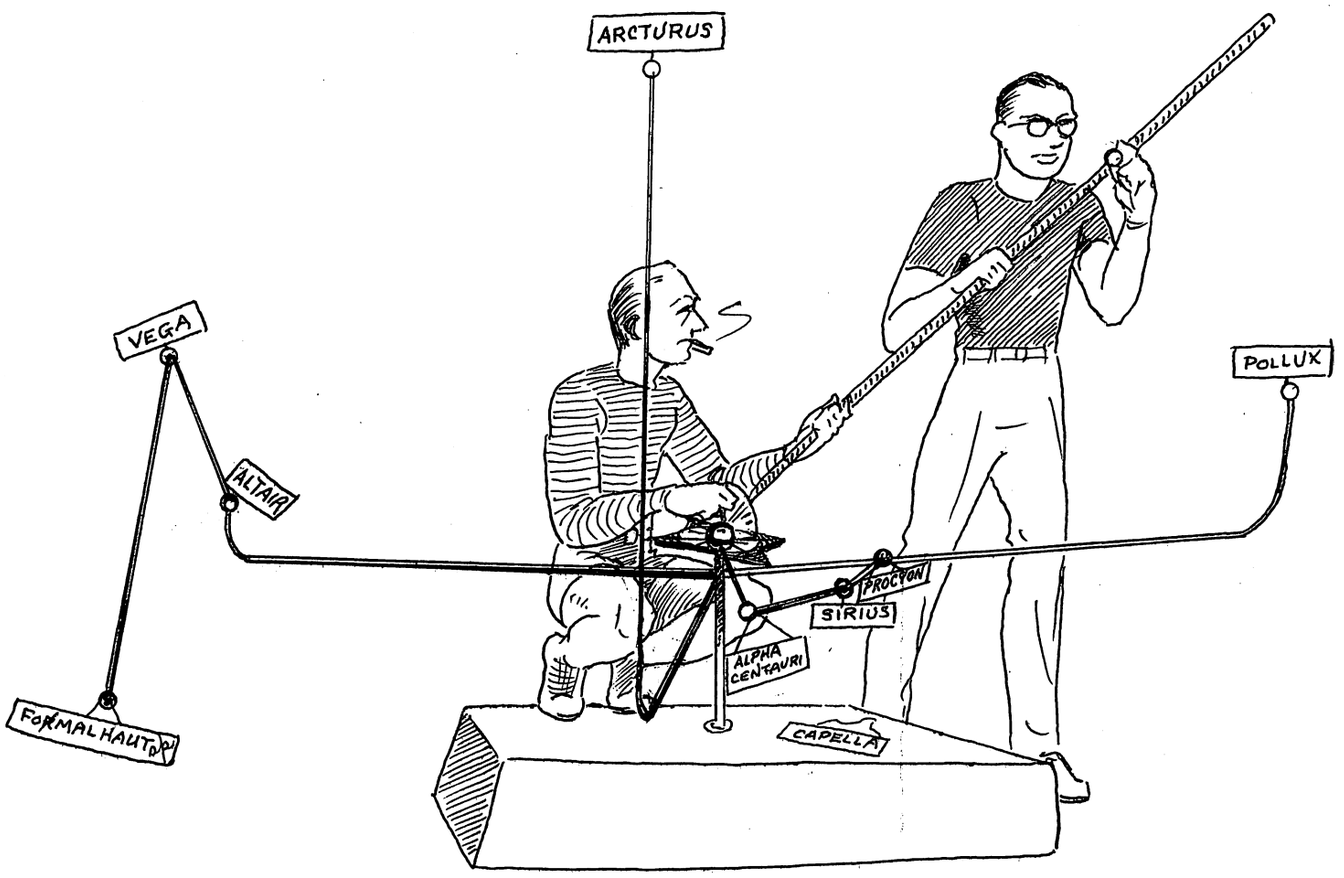


Then I would trace these two stars onto another sheet of paper and, measuring angles and distances from Sol again, locate the next giant sun, Sirius. Then Procyon. And so on.

You can see by the list that, after Fomalhaut, I'd have them strung out in locations above the clockdial plane, with two of them on Fomalhaut's side and the rest strewn past Sol roughly between 6 and 9 o'clock. None of their angles are very high, and their distances scatter them out in a rough string.

This is undoubtedly what E.M. Hull did, too. The resultant pattern looks somewhat like a ridge, such as you might find in mountainous foothill country.

And it's wrong!



The above two fans-who-shall-remain-nameless (and I'll have something to say to those two, soon as I'm finished here) are building a star chart in the only correct way it can be done. This is the chart of our cluster which we must have in our starship. At this particular moment, as you see, they're plotting the location of the star Capella. Using a long pole marked off in lightyears (to scale, of course) one of them tilts the pole 45°56' up in a direction of 5 hours, 12 minutes. The other one holds a marble out at the 42-lightyear mark until a third guy with the welding rig steps in and runs a black metal rod out there to hold the marble in place.

The important this is how I managed to draw that illustration. In this thing, 3-dimensional perspective is absolutely critical -- and I've found that you cannot visualize that perspective accurately enough in any drawing on a flat sheet of paper. You wouldn't have Fomalhaut down that low; you most certainly wouldn't show Arcturus (19°30' Up) so goddamned high as that. But they should be there!

What I did for these illos was raid Robbie's materials for Xmas decorations and build myself a model of the cluster. I took a 5" styrofoam disc for a base, stuck a used-up office ballpoint pen into it, and speared a 3" styrofoam ball on top of that. Then I cut some lengths of steel-core wire to scale (1 centimeter = 1 lightyear) and poked them into the ball at the specified angles. The outer tip of each wire signified a star's location. I sat this model on our livingroom table, studied it, and drew a star-traveller's view of it.

Hold g2 at an angle, now, and you'll see the final result there. And I am reasonably certain this is one thing E.M. Hull did not do -- build a model. But styrofoam wasn't available 15 years ago, either. You can now see the actual shape of our cluster, and it's enough to prompt anyone to ask, "What shape?"

I've moved that model around and viewed it from all angles, and it most definitely does not look like a ridge. It looks more like the lights of some rustic mining camp, scattered all over a steep hillside.

However, there is a shape there; you can't see it. It can't be shown adequately in an illustration like this, no more than a photograph of our 3-dimensional star chart would show it. If you were actually looking at the star chart itself as these fans-who-shall-remain-nameless have built it, you could perceive that shape at once.

And there is a way.....

Reason I've drawn the ship's star chart like this is the way I visualized having it constructed. I had those guys mold the marbles for the respective stars out of various minerals that fluoresce in ultraviolet light -- what's often called "Black Light" -- and since different minerals glow with different colors, we can pick the mineral for each "star" marble which will fluoresce in the proper color for that star.

Just switch off the lights in the chamber where the star chart's built and switch on the "Black Light" lamp, and there it is -- you're looking at the giant suns in our cluster.

You could walk around it, view it from all sides.

You could feel your way cautiously in among the black supporting rods and look around from a position inside the cluster.

You'd see its shape then, all right.

But these giant suns aren't all of it, by any means. I've suggested that they would be the "backbone" of the cluster, but that doesn't mean all the other suns are packed close around those giants. I've been back talking to the guys in the Radio Astronomy Department and they've pointed out two things about this.

First, most of the suns in our cluster (they admit there is one) are small, dim suns that can only be seen with a telescope -- and some of 'em are even too faint for that. Our Sun is about midway between the brightest and dimmest types of stars, and we're a little short on really bright stars in our local neighborhood. We've got a lot of faint ones. In fact, we may never know exactly how many suns are in our cluster until we get a ship out there. Some are just too damned faint.

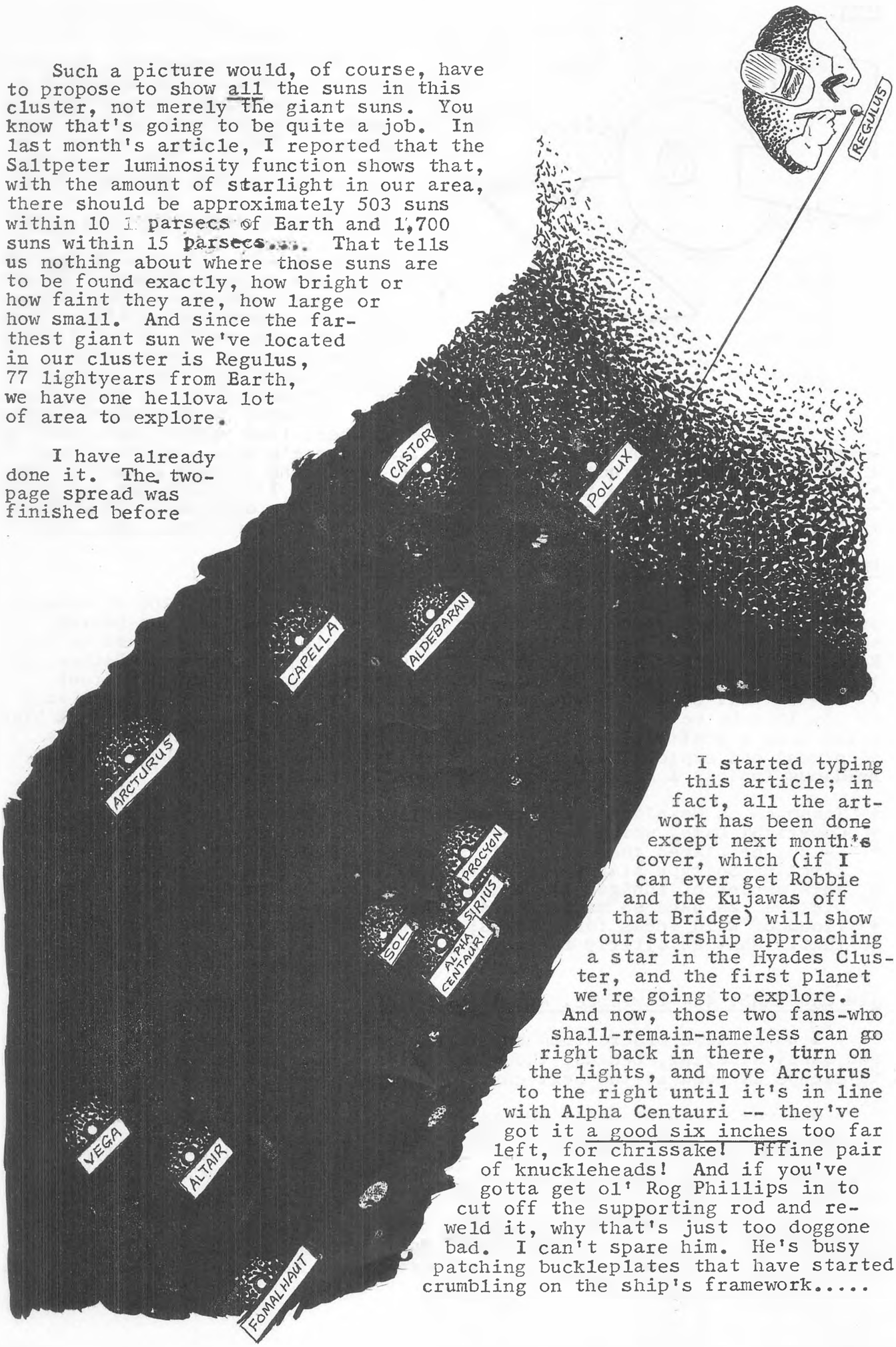
Second, these little suns just scatter out every whichway. They don't much follow any general path nicely marked out by the giant suns like big lights along a superhighway. But the giant suns do pretty much denote the general area filled by our cluster; even the faint, little suns thin out pretty much between this area and the next big cluster.

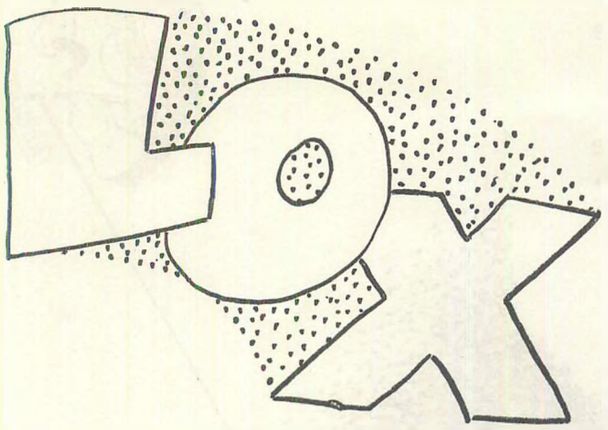
Those Radio Astronomy guys are somewhat interested in faint suns.

But as I say, there is a way to show you the general shape of our cluster -- I mean, without you having to build yourself a model of it. Remember, I said that at the conclusion of all this, I would show how this cluster looks in space. I would do a two-page spread showing it as if we had taken photographs on our trip out, and all these photographs were laid out in one giant, composite picture of the cluster.

Such a picture would, of course, have to propose to show all the suns in this cluster, not merely the giant suns. You know that's going to be quite a job. In last month's article, I reported that the Saltpeter luminosity function shows that, with the amount of starlight in our area, there should be approximately 503 suns within 10 parsecs of Earth and 1,700 suns within 15 parsecs..... That tells us nothing about where those suns are to be found exactly, how bright or how faint they are, how large or how small. And since the farthest giant sun we've located in our cluster is Regulus, 77 lightyears from Earth, we have one hellova lot of area to explore.

I have already done it. The two-page spread was finished before I started typing this article; in fact, all the artwork has been done except next month's cover, which (if I can ever get Robbie and the Kujawas off that Bridge) will show our starship approaching a star in the Hyades Cluster, and the first planet we're going to explore. And now, those two fans-who shall-remain-nameless can go right back in there, turn on the lights, and move Arcturus to the right until it's in line with Alpha Centauri -- they've got it a good six inches too far left, for chrissake! Fffine pair of knuckleheads! And if you've gotta get ol' Rog Phillips in to cut off the supporting rod and reweld it, why that's just too doggone bad. I can't spare him. He's busy patching buckleplates that have started crumbling on the ship's framework.....





...So I said to Robbie, "You know what I'm gonna say in LOX, this month? I'm gonna start right off, saying, 'Do not write us any more letters! Stop, halt, desist! No more for a while. Like, wait for the signal -- I'll tell you when!'"

And Robbie says, "You will not!"

So this is how it is. I believe we've got a bigger stack of Letters of Comment here than we've ever had since we started publishing. What got into you people, I don't know; and every one of these letters is saying something! Wait, now, must be a few exceptions to that. Yes. I've got some brief scribbled notes in there from people just renewing
+ their subscriptions or starting one...and there's a parting note from ol'
+ Bob Tucker, who is not gonna renew, he says. And I guess a couple wrote
+ just to be writing. Yep, two such letters like I see in other lettercols
+ but anyway they were tempted to write. Gawd, I'm deluged!!! This means
+ I have to chop 'em, you know, and just print parts of 'em. Like this:

FRITZ LEIBER, 511 Drexel Drive, Santa Barbara, Calif.:

You've got me into trying to think a bit more sensibly and detailedly of such matters and even to studying a bit the 3D layout of the nearer stars--though to be honest I've never been at all clear as to whether the Ridge of your Ridge Stars is in the Bay Cities or the heavens. Either way they're provoking and stimulating and so are your own writings thereof. (I see in Vol. 3, No. 1, you're promising to map the Ridge (?) Stars soon in g2; I'll be waiting. I take it you've read Heinlein's TIME FOR THE STARS which does a pretty fine job on a lot of this, I've always thought; his ship went out exploring in the direction of Cetus (old tau there) and Eridanus (unless I misrecollect they took in epsilon).)

+ Inasmuch as Heinlein's reference sources necessarily predated the book's
+ Copyright Date, which I believe was 1956, I suppose I ought to praise it
+ -- but he played that same, old song about looking for Earthtype planets
+ circling Soltype stars. By george, wait'll I start exploring planets in
+ this series of fun&games! Worse yet, I think he presented a very limited
+ picture, as have so many others. There's not enough to it to provoke a
+ flood of wild ideas for stories; but a real look at those stars can do
+ that. What an utterly fantastic picture it is, when you see all of it!

JIM CAUGHRAN, 414 Lawrence, Ann Arbor, Mich.:

I won't take orders from anyone who can't compute an orbit - I suggest you start studying, because the whole thing sounds like a gas, and I'd like to escape as much as the next guy.

However, I doubt we'll get as far as our imagination - it takes time to get places, even subjective time. Figure that at 100 percent, $E = mc^2$ efficiency, all one's mass is used accelerating to lightspeed. (Even if you don't use the ship's mass as fuel, you've got problems.) And at $\frac{1}{2}$ light speed, or the like, subjective/objective time ratio is not significant.

Incidentally, the fannish news of the year might go unnoticed, unless I mention it. Barnard's star (BD +4°.3561, $17^h52^m.9$, +4°25', 1900) - the second nearest known stellar system, was noticed to be wobbling in its path.

After a lot of calculations - he took into effect the differences between the ways different observers set their telescopes - he came out with a planet. The planet has about a 24 yr period, mass about 1.6 Jupiter's(!), and a very elliptic orbit - eccentricity about .6, semi-major axis 4.42 A.U. The average surface temperature is estimated as 60°K - that's cold - so there's likely no chance of habitants.

Reference for that was van de Kamp, Astronomical Journal v.68 (1963), pp 515-521.

+ I've got your orbit computed to a nicety. Ready? (1)Exactly
+ what do you mean by "stellar system" here? Way I heard it, this
+ is the first time we've found a planet circling a sun that's all
+ by itself, like our own sun is, rather than being in a system of
+ two or more suns. But maybe I heard wrong? And you realize the
+ catalog number doesn't give the one fact we'd want most about
+ Barnard's Star -- its exact distance from here in lightyears.
+ My source, PICTORIAL ASTRONOMY, gives its distance as 6.1 light-
+ years with a magnitude of 9.7, and any planet circling a 10th
+ magnitude sun is gonna be damned cold, methinks. (2) You must
+ consider the main "fueltank" for a ramjet starship such as ours
+ to be something like 2 miles in diameter - the range of our elec-
+ tromagnetic "scoop" - and, figuratively speaking, 186,000 miles
+ long. The mass which this "fueltank" feeds into our ship's thrust
+ is at a static pressure (mean average) of one hydrogen atom/cm.^{3}
+ so figure out the number of cubic centimeters and you'll have the
+ total mass that "fueltank" holds. It adds up to quite a few tons
+ of mass. And at $\frac{1}{2}$ the speed of light, the "fuel-feed" to our
+ ship's thrust is 50% of that mass per second. Finally, the time
+ contraction which doesn't become significant at much below light-
+ speed also means that the "increased mass" phenomena and its
+ consequent fuel problems isn't significant until then, either.
+ But I'll hoist you into your orbit right after I'm done with
+ this next letter....

POUL ANDERSON, 3 Las Palomas, Orinda, Calif.

Turn about is fair play. Since you're currently raking sf authors over the coals for failure to do their homework, brace yourself, boy. Some corrections to your own writing seem in order.

It wasn't me who recommended STELLAR POPULATIONS to you. What I probably did mention was ASTRONOMY, Vol. II, by Russell, Dugan, and Stewart, a standard and invaluable text.

Here you can find out how stellar distances are actually obtained. The triangulation method is good only out to a few light-years, then the angles become too small to measure. You can extend your measurements somewhat further by statistical analysis of the proper motions of globular clusters. With data like this, you get functions like the period-luminosity relationship in Cepheid variables, and so deduce the distances of such stars. Associated stars -- in the same cluster, for instance -- can be assumed to be at essentially the same distance, and that's how you get the absolute magnitude of a non-variable. The mass-luminosity relationship, originally worked out for binaries of known distance, is extended to cover single stars. And so on and so on, all much too complicated to explain here. One point worth making, though, is that distances are in general known only with a probable error of several percent. Likewise proper motions. Which adds up to a very considerable absolute uncertainty, when you start covering interstellar distances! I don't envy your ship's navigator.

I may be wrong, but your writing gives the impression that you aren't sure what parallax is all about. Look, it's simple. The parallax of a star is just that which it exhibits as seen from either side of Earth's orbit. Even when this angle is toosmall to measure

and the value must be derived indirectly, it's still given in such terms. Now a parsec is the distance at which a star would show a parallax of one second of arc. So to get the distance of a star in parsecs, you simply take the reciprocal of the parallax in seconds. $\pi \geq .100$ means "distance of 10 parsecs or less."

In order to use a star catalogue, you also have to know the classification system. I won't bore you with my own lecture on this; but for your information, "dM5 or later" means "dwarf star of spectral class M5 -- cool and reddish -- and on down through still cooler and redder types." Russell, Dugan, and Stewart will tell you about this, too.

\+ Poul, the interstellar distances which usually concern astronomers
\+ are way beyond anything we're concerned with, here in our own home
\+ cluster of suns. How far do you assume "a few" lightyears to be?
\+ Present observatory equipment would certainly have no trouble at
\+ all measuring an angle as minute as a tenth of a second of arc,
\+ would it? So distance can be determined by triangulation of two
\+ angles of sight at least out to 10 parsecs, or 32.6 lightyears,
\+ can't they? And didn't I say you sight in one angle; then wait
\+ 6 months to sight in again, when the Earth's on the other side of
\+ the Sun? What else is that but taking angles of sight on either
\+ side of Earth's orbit?
\+
\+ All these details are no doubt interesting and such would've been
\+ loaded into an article on our cluster back when I was reading Asf
\+ for the articles (rather than SCIENTIFIC AMERICAN for the adver-
\+ tisements) -- but it's no good here. The last time you and I got
\+ wound up here, I began to get letters asking what we were talking
\+ about; sure, it was simple as highschool physics, but a lot of
\+ people never had highschool physics!
\+
\+ I've come to the conclusion that anytime I expect readers to grasp
\+ even so basic a concept as $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$, or even that .5 x .5 = .25,
\+ I'm asking too much of them. I must break it down to simpler terms
\+ than that. Then anyone who cares enough can go diffusing himself
\+ with knowledge from oudt mit das reference works -- or sit back and
\+ wait for someone like you to write in about it. But I cannot
\+ assume that even a sizable minority of readers will care that much!

I am frankly skeptical of the existance of your Ridge. A two-dimensional diagram such as you offer is no good in representing three-dimensional space. ((+You know it!+)) Besides, you show only a handful of local stars. The latest reference available to me says that 55 stars are known within a 5-parsec radius of us; or 42 if you count binaries and triples as single systems. They're fairly well scattered over the celestial sphere.

\+ And that's not much use, either -- there could be as many as 250
\+ suns within 16 lightyears, some so faint an Earthbound telescope
\+ can't even detect them, much less get their parallax. The diagram
\+ I used was just sufficient for the use I made of it: showing that
\+ the Sol/Alpha Centauri distance is not the shortest between suns
\+ in this sector. A 3-D model would've done better, but I didn't
\+ need to be that emphatic just to prove a relatively minor point.

If any structure like your Ridge can be identified, I still don't see where it has much importance to sf. Typically, the hero goes to some specific star or stars; and he can find stars in abundance in any direction. The fact that some directions may be more thickly populated than others seems of mostly academic interest. Given faster-than-light travel, you can go anywhere. With sub-light travel, you'd probably just visit one star at a time and then come home again.

\+ And no matter what kind of travel it is, you have just mentioned
\+ two basic story-themes. Two, and no more.

Of course, in the case of a sublight Grand Tour of the sun's

ATTENTION, ALL HANDS: Notices are now posted on all hatches leading to Supply Decks P, Q, and R proclaiming them Unsafe and Off Limits To All Personnel. Only select crews of volunteers are permitted into those areas temporarily to remove stores from them to other Supply Decks still deemed safe. Our ship's framework has begun showing rather serious effects of metal fatigue; all efforts are being directed toward determining the basic cause of this, its rate of progression as related to applied stress, and what can be done about it. There is no cause for alarm ... yet. Captain, H.M.S. Indecontaminable

* * * * * * * * * * * * * * * * * * * *

neighborhood, such as you are describing, its exact layout is of importance. But this is not the only possible sf plot, y'know.

+ And that makes three basic story-themes -- with this being a
+ rather poor third, being one you'd hardly expect to use for
+ very many interstellar yarns. Man, you've been hitting that Nor-
+ wegian beer too much! First, you don't explain why any kind of
+ angles should ought to be called "parallaxes" and not something
+ else; neither does Webster's Collegiate. Then you infer that
+ you're going to spend the rest of your career writing interstellar
+ tales which are nothing but variations on two basic themes, with
+ maybe just one more as a faint possibility. Pfui! Your own
+ writing belies that.
+
+ What I'm endeavoring to present here is a whole, new fictional
+ Pacific Ocean with all sorts of solid, real basis for South Sea
+ Adevntures (you've got me foaming at the mouth again) and Lost
+ Cities In The Jungle and Mysteries of the Far East and even Lost
+ Civilizations, to mention but a few -- and what, in effect, do you
+ say about it? You say it doesn't help much in writing detective
+ stories about San Francisco! No sir, it won't do. You are no mere
+ Andre Norton rehashing some nice, old AMAZING stories in more
+ suitable lengths for pocketbook publication. (Okay, I said that;
+ you didn't.) And it was your criticism of 2-D sketches that spark-
+ ed my own vague suspicions about 'em, so I had to build a 3*D model
+ of the so-called Ridge. Now, give me time to present my conclu-
+ sions about all this. That's for next issue, here.

Another thing -- do a little arithmetic before attempting that whipcrack maneuver around Regulus. At 0.9 c, your spaceship is moving so fast, with so much energy, that a star would have to be much bigger than theory allows to exert any significant gravitational influence.

Like, taking your own value of 150 Sols for the mass ((+Correction: I said it was 150 times brighter, quoting my references accurately -- and simply assumed what its mass might be!+)) of Regulus, and looking up Sol's escape velocity -- hell, I can't find it now, but a rough calculation gives me 385 miles per second -- and remembering that this value is proportional to the square root of mass, and making no allowance whatsoever for the fact that Regulus has a much greater diameter than Sol -- anyhow, no matter how generous we are, we can't allow Regulus more than about 4600 m.p.s. of velocity change, which is less than 3% of the ship's speed. If you want to go into vector analysis and find out just exactly what changes Regulus can make in your orbit, that's your problem, man. It's messy. But I've told you already that the changes won't amount to much.

+ Um, yez -- that's all very interesting, Mr. Anderson. But before
+ I ask your help in getting Jim Caughran to do that messy vector
+ analysis for us, kindly do me the favor of doodling up how very
+ difficult it may be to change course on a shipload of human cargo
+ at 0.9 c velocity, and how much we'd enjoy any sort of help at
+ all doing it. Then guess how close we'll trim Regulus' atmosphere

+ to feed a good chunk of extra mass through our ship's "ramjet"
+ drive, giving a boost in the tail (but not too much of one, not
+ trimming it too close) which Regulus' gravitational pull alone
+ could not give us.

All in all, your search for a new direction in stf is admirable, and you've come up with some interesting notions. But I suggest you dig a little deeper before getting too detailed. If nothing else, you may then feel a bit of sympathy for us dirty ole pros.

+ Flattery will get you nowhere. What's worse, tho, is dirty ole
+ pros like Poul Anderson can write interstellar tales gallumping
+ around the whole, blamed galaxy like it's a Sunday in the Park
+ and serious, constructive young faaans like James Caughran don't
+ raise a single eyebrow. But let me attempt a halfway decent li'l
+ scouting trip in my faaanzine and ...!BNGY!!! Now, is that right?
+ I ask you. Is that justice? Fffine thing!

DON FRANSON, 6543 Babcock Ave., North Hollywood, Calif.

No, Warner is wrong, I haven't reformed. I'm only in FAPA because I'm in N3F. I think it's a good apa as apas go, but I'm still not enthusiastic about apas as a medium of communication. It's like interstellar radio, with a huge time lag between comments. #I used to have two complaints about apas, and I just realized that they compliment one another, and so cancel each other out. One, that I couldn't get apazines and felt I was missing something. Two, that after having seen a few SAPS and FAPA mailings, I felt that they didn't say anything, for all their bulk. So, how could I miss what they were saying, if they didn't say anything? That's my solution to the apa problem. Don't fight 'em, just don't join 'em. Live and let live. May you do likewise.

+ It still seems to me that my previous comments quite clearly re-
+ ferred to fans -- "like Robbie," remember -- who have not yet dis-
+ covered that, and consequently still feel they're missing something
+ and naturally resent it. I didn't say I still miss 'em.

#Are there really so many non-fanzine fans in fandom, when you deduct ex-fanzine fans and pre-fanzine fans? Didn't you know that Madle published a fanzine? So did Bloch. Name names, Joe.
P.S. I always cut the bottom two inches off my g2s, so they fit in my fanzine stacks.

+ I wouldn't by any stretch of imagination call Sam Moskowitz a fan-
+ zine fan, today -- yet Sam once ran a whole, blamed Manuscript
+ Bureau for fanzines. So Bloch and Madle published; all right, when
+ did they publish? What was fandom like then, compared to what it's
+ like now? Very-very-VERY few "non-fanzine fans" I've ever known
+ who had anything whatever to do with fanzines, and those few who did
+ prefer you not to mention it in mixed company. Nor does it seem to
+ include any more oldtime fans than "fanzine fandom" does. As for
+ its size, I won't say anything so foolish as you should look for
+ them at conventions. You can find 50 fans in LA who never read fan-
+ zines and have nothing to do with LASFS; about the only time you
+ might see them together is at an annual party at Forrie's. Then
+ there are the fanclubs' mailing lists -- not their membership lists,
+ mind you. And the stf/fantasy collecting fans who're known to such
+ dealers as Steve Takacs, Gerry de la Ree and Ben Stark. And ...
+ oh, they exist all right.

BUT THIS IS ALL I have time&space for, this month -- which leaves out much I wanted in this issue's LOX. Letters from Don Fitch and Harry Warner both present excellent data on fanzine & apa publishing; and I have replies which make for a good, sound discussion. It will have to wait. Much other fun&games from Lewis Grant and Stan Woolston and Roy Tackett are in this pile of letters that remain. That, too, must wait.


LONDON
IN
'65
ATOM

And there's still far more LOX here, from so many of U, about so many more things I enjoyed and yearn to comment on -- like the human aspect of our interstellar trip, not just the technical angles! But wait, see what we're going to be getting into here next. And so many good things are happening to some fine fannish ones -- Bjo Trimble and Miriam Knight pregnant, Betty Kujawa learning to pilot that airplane; I don't know who to commiserate with most -- John, Jerry or Gene.

Why, there's even the Xmas present I got for our Siamese cats -- a toy bear trap!

Works, too!!! I tried it, myself -- right after I saw Robbie try it as I knew she would -- but all these happenings must need be left for another time.

And there's a few letters from newcomers asking what in blazes this is all about -- what's "apa" and "BNF" and all that jazz -- and how long has this been going on?? I'd enjoy answering those queries and watch F.M. Busby or somebody else get all upset again, but maybe I shouldn't, not like that. A straight query deserves a straight answer. The only answer I can give this issue, for lack of space, time & money to pay for this thing, is that science-fiction fandom simply takes a little time to "catch on" to, it has its own jargon, it's been around for some 30 years and still doesn't amount to much, and I rather hope it never will.

Besides that, there's the rest of the letters. A caustic comment here, a rather intriguing suggestion there, a mere casual remark that tempts me to write reams of reply ... what am I to do with all this?

I should send 'em all to Colin for publication in his fanzine's lettercol, with him answering them -- but that wouldn't do too well, what with his letters in the batch and him answering himself on questions he asked me! Tsk.

Maybe we should junk the whole thing and start over. Or maybe I should be selective and just publish g2 for a select group of fans I select and coldly ignore anyone else -- well, don't some editors do that? But no, that's no fun; neither are their fanzines.

I tell you what I am gonna do. I am gonna do whatever I blamed well feel like doing. How-zat?

And I hope and trust you are the same. Now all I gotta do is that unmentionable cover illo for next month ... lessee, now -- approaching a sun on the near side of the Hyades cluster, and, um, decelerating .....

TO: ROSEMARY HICKEY
2020 MOHAWK
CHICAGO 14, ILL.

FROM: JOE & ROBBIE GIBSON
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