

INDIAN SPACE RESEARCH ORGANISATION
ISRO

TELEPHONE : 77076 79271-2 77641-2
TELEGRAM : ISRO
T E L E X : 012-261

C/O PHYSICAL RESEARCH LABORATORY
NAVRANGPURA, AHMEDABAD-9. INDIA

May 31, 1972.

Dear Sundara Rajan :

Thank you very much for your letters. I was at Bombay from 10th May 1972 to 21st May 1972 in connection with Navigation Study Group meeting - going in person to various people - shipping, Air India, etc. Partly I was glad that there is some interest on their side. However in the global level it looks navigation satellite will never come through commercial approach of US dreading other countries.

Fortunately I could meet and brief new SSTC Director Dr. Brahm Prakash in Bombay. He is at Veli from 22 May 1972 to 31st May 1972. Everything ^{coming} under Space Technology will be under him and he will be ex-officio Commission members. Technically he is going through the various projects and proposals for the first time. I do not know whether TCFC will survive in some form or other. Something positive for me may have to come through him.

Reorganization of ISRO is imminent. May be Department of Space and Space Commission. Dhawan likely to take charge in July. Looks like about 10 "Directors" (1800-100-2000 below Joint Secretary and above Deputy Secretary) position in staff function at Commission office. Similar to Dr. Nerurkar in Electronics Commission: Science, application technology, finance, personnel, planning and so on. No executive powers but lot of behind the scene activities for such people. PDB, EVC may be opting for some. But snag is these posts are at H.Q. H.Q. may be at Trivandrum or Bangalore (The pendulum has swung to Bangalore since last week). SITE may be at Ahmedabad but under whom not known. EVC/PDB may be offered UN Space Expert post for two years at \$ 30 K. as per the latest information. Then Wg. Cdr. Rao may be asked to run SITE and run all Ahmedabad Units (ESCES, SCSD, ESD, MASEG ?). No direct approach to Chairman except through the chosen one.

Calla got a narrow escape. Till further orders can continue at Ahmedabad. May have to move to SSTC and report to Brahm Prakash. May get orders to look after ELD(R) & ELP in place of BRR if needed as CBI enquiry is prolonged for years.

contd..2.

Thank you for your comments. EVC brought some with him.

Yesterday I met Dick and spent a lot of time discussing ATS-F, INSAT, etc. Sanjeev is on honeymoon trip to Gulmarg. Will be back on third week of June.

About the "references" in US for my work EVC told he could not meet anyone there as they were busy with ATS-F review and has instructed PPK to ask them to write!

Before that reorganisation may come. New Chairman, Commission and umpteen procedural delays !

URR has come back from Moscow. MGK was here last Saturday and it looks SSD may move after all to Bangalore if final decision is taken at PM level but when no one knows. USSR gives solar panels, Ni-cd cells, Taperecorder (endless loop) and Thermal coatings and calculation and vibration testing. Indian soldering and welded aluminium structure loaded with US COSMOS devices (about 1.5 million dollars) completes the program.

If still GSFC library rules are not very rigid due to austerity measures you can get me the following - (Microfiche will do):

N-70	-	10849
N-71	-	10639
N-71	-	10839
N-71	-	10840
N-71	-	10627
N-71	-	10626

Earlier before leaving I had asked for some microfiche on space shuttle control along with the ones you had sent to me. I don't know if they were not available at that time. You can check if they are lying in my name somewhere.

I could not but laugh at the way A design for INSAT had been written - I mean PPK portion especially on modifications. Spot beam and all. I was hurt after seeing Multipactor being covered without reference or acknowledgement to you. May be there are going to be more free foreign exchange dollars to go down the chain.

Dick told that COMSAT is willing to take Indians - especially ground station at our cost in parametric amplifiers and power amplifier chains. Pant is planning to send some people.

August 1 is go/No go date for "Fairchild Training" program. EVC hopes Russo-American relation will soften the Indo-American estrangement by that time. A very short time constant !

Please convey my best wishes to all.

Yours sincerely,

R.M. Vasagam

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C/O PHYSICAL RESEARCH LABORATORY
NAVRANGPURA, AHMEDABAD-9. INDIA

June 15, 1972

Dear Sundara Rajan,

Received your letter. As indicated by you I am giving the NASA numbers for the reports I had asked earlier :

N69-33699 for NASA CR - 86197
N69-33700 for NASA CR - 86199

Unfortunately NASA CR -86198 could not be traced in the listing for the year 1969. May be they have not yet listed at that time.

These reports deal with a unified C & G system. As a phased effort (above reports are for phase II) it was done. Phase I reports in 4 volumes are :

N 68 - 12250
N 68 - 12345
N 68 - 12383 (Vol.4 on detailed design is not listed).

These are all by TRW.

Sanjeev is back and he will join back tomorrow. Kiran is on leave prior to his marriage on 16th June at Bombay.

Our Communication Study Group meeting was held on 7,8,& 9th June for "mailly" finalising the report. But much of discussion was on R & D programs, outlay and action plan and so on.

Dhawan has taken over as Chairman Space Commission and Secretary to Department of Space. Officially ISRO still exists till it is taken over by DOS (expected by July 1, 1972).

It looks that Mr. HGS Murthy has been "nominated" by India for the UN expert post. He is yet to be selected amongst 4 or 5 such nominees from other countries.

About BRR, he is under suspension and enquiry is on (no one knows when it will be over). Now TCFC Chairman is in charge of that Division assisted by Sandlas for ELD(R) and Oulak for ELP.

UR R's plans for shift and independant unit has not yet been cleared. The first task is to build the 175 Kg satellite for Indo-Soviet joint project by 1974 Jan. I don't know whether it is realistic target date (about 18-20 months with no facilities and bulk of electronics to be imported from USA).

I hope that ATS-F review would have been over by now and some firm date has been set for the launch.

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My best wishes to Vijay and Mrs. Rajan. Please convey
my regards to all.

Yours sincerely,

R.M. Vasagam

(R.M. Vasagam)

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C/O PHYSICAL RESEARCH LABORATORY
NAVRANGPURA, AHMEDABAD-9, INDIA

21st June 1972

Dear Sundara Rajan,

Hope you have received my earlier letter. Now new developments have taken place. URR has been permitted to open an "Indo-Soviet Satellite" Project Office at Bangalore in the new Industrial Estate northwest of Rajaji nagar and Malleswaram. SSD is not moving from Trivandrum and is still in SSTC - you see the ways and means to circumvent the politicians and others in SSTC in this move. 20000 sq ft - 2 x 10000 sq ft Industrial shed meant for Philips will be equipped with false ceiling and air conditioned fully before moving in. Movement may take 2-3 months. Lower staff in SSD agitated over this move. URR is trying for Administrative Officer, Purchase Officer etc. I felt that MGS would have liked something like this if he were here. Kasturi Rangan is about to go there. But URR wants to retain Professorship at PRL at any cost lest he is ~~not~~ thrown out in the power struggle.

BRR's case seems to be taking its own time with no end in sight. It looks SCG already attempted to take charge with the support of VRG and MKM but MGK scuttled the move and made TCFC Chairman to look after ELDCR and ELP. URR subcontract of ground TLM station at SHAR to BRR is hung in the air. URR looking for someone to take charge of it (about 10-20 people under that fellow - URR asked OPNC to take this work in vain without realising the strength of OPNC).

FE of 1-1.5 M is needed for "Indo-Soviet" to buy Cos/mos circuits and electronics. Space commission to consider this in the first meeting.

Brahm Prakash is going on and off to Thumba. Veli Panchayat is still powerful. Virtually no decrement in power SLV so far no progress in decision.

EVC, PDB look aimless, think that Dhawan, MGK will call them and offer some high position. But nothing has happened so far.

It looks BSR may even quit; do not know for what but there is no love lost between him and MGK.

So far no improvement in my case, the "evaluation letters" are yet to come. May be EVC, PPK dis-interest (deliberate or accidental) in the matter standing in the way. I have written today to Dr. Sarles, Dr. Redisch, Gary, Tony and Dick Freeman. Also I am writing to Roger Mattson to send similar report. (You can brief him at the earliest) I have requested all of them to send the report directly to Chairman, ISRO with copies to EVC and Brahm Prakash.

In spite of my unsettled problems I cannot resist getting involved in some advanced concepts and systems. Some of the material on space shuttle and space tug which I mentioned earlier and related to C & G are given below:

N 71 - 32677
N 71 - 32678
N 71 - 32679
N 71 - 21452
N 71 - 21453
N 71 - 21454
N 71 - 21455
N 71 - 21456
N 71 - 21457

Also if some free distribution copies of an AGARDOGRAPH (Agard CP-86-71) on Helicopter Guidance and control are available you can send me one. (Also NASA CR-1899 and NASA CR-1900)

I saw the US State Department letter; EVC was to take it up with MGK. But he did not go to New Delhi yesterday as planned. He feels that the assurances may not be given by GOI. So Fairchild program will celebrate its second anniversary before anything turns up.

I found a message that you are attending Philadelphia Conference. Hope you make some good contacts.

Situation is very fluid here. Anything may happen. Programs may go, may come but all by personalities. You can look in old Telecommunication UTU Journal) may be Sep-Oct-Nov 1971 about the starting of a satellite communication research center in Ottawa, Canada by Bell-Northern Electric and a University. You please find out the full details of their research programs - may be a mini Lincoln Lab - and get somebody who knows them in NASA. It is a Company-University Institute allowing research work to be done for Ph.D. and M.S. on real Satcom problems.

Please write to me at the earliest

Yours sincerely


(R.M. VASAGAM)

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C/O PHYSICAL RESEARCH LABORATORY
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August 6, 1972.

Dear Sundara Rajan,

Received your letters and copies of the NASA reports. I am very much thankful to you for the report on SCOUT as I can have immediate use for the same.

I am extremely sorry for not writing to you immediately after the Seminar. Lots of changes are coming. From Sept.1, Dhawan has become Chairman ISRO too. There will be a separate ISRO Council (Director, VSSC, Director, SHAR and Director ASC + Chairman ISRO) till 1973 March. Then we do n't know - we may go totally government like BARC.

MGK will be a Space Commission member and it looks he won't have direct role in DOS any more.

YJR has been made Project Officer SHAR till HGS Project Director returns from UN (2 years). URR has been given 2K in 1.8-2K and on leave from PRL for 2 years. A separate Indo-Soviet Satellite Board (Dhawan, Menon, Brahm Prakash, SRT, Vellodi, Seshan) will manage the project at Bangalore - it is a VSSC Project (Thumba complex).

SLV program is under review. May go for liquid I stage with 37 T thrust like Diamant. Project is at standstill. All SHAR projects not yet decided. Trend is for technology diversification - liquid, solid, hybrid all should be done. CNES-France, German collaboration may be pursued again by next month.

Regarding INSAT I do not foresee any immediate possibilities. With US the political situation is totally bleak. All paper studies lead nowhere. It may turn out that direct broadcasting is not palatable to Russians. Under these conditions I did not even like to comment on INSAT-S, with spot beams and all.

After the Seminar I feel completely disgusted. Had a chance to talk to Dhawan for an hour on INSAT problems - how to get indigenous technology, training chances in Europe, Canada and Japan. Also had chance to discuss inertial systems aspects with Dhawan and Nag Chaudhry during Seminar. However it is all peripheral activities only.

I went to Thumba once in July 10-12. Met SCG before his departure to USSR for 5 week Electronics delegation visit (I was originally proposed by Electronic Commission - but SCG was sent since they wanted someone above 1.1K). I met Brahm Prakash at Seminar. He had already sent a message to EVC to have me back at SSTC. But it is still dragging on - EVC told (Dhawan & MGK) chairman would decide. Now it goes to Dhawan. Anyhow I feel that I won't continuing here for more than a few days.

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No improvements in my promotion problem. From MGK it is transferred to Dhawan - it looks intermediate agents are responsible for wrecking my career. By this week end something may happen - cannot be worse than whatever has happened so far.

I am presently staying at Univ. Guest House as I am "EXPECTING" to move any time to Thumba.

Dick has known my problems too well. Especially how my work was robbed in communication and Navigation areas by last minute 'SAVIOUR'.

I am now finding it very hard to continue on a Project that has already been earmarked for some people and I don't want anymore to be contributing to efforts to sustain the same.

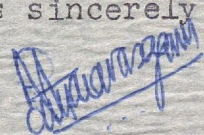
Tony, Gary and Sarles had sent their letters. I do hope that Redisch, Dick and Mattson may be writing sometime soon.

If you happen to get some data on the Space Shuttle/Shuttle Guidance control, please send me. It looks that our INSAT will have to be designed for a shuttle launch only - 1978 and beyond!

Please convey my regards to all.

My best wishes to you, Mrs. Rajan and Vijay.

Yours sincerely,



(R.M. Vasagam)

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C/O PHYSICAL RESEARCH LABORATORY
NAVRANGPURA, AHMEDABAD-9. INDIA

September 15, 1972.

My dear Sundara Rajan,

Hope you received my last letter.

All SITE people had gone to New Delhi for meeting with Chairman. EVC told that he had a brief discussion on INSAT with Chairman and Brahm Prakash. As you would have known from SVD enclosure on Post-conference activity on INSAT, I am asked to do a study for S-band using Russian Vehicles 'similar' to Delta S band with earmarked "Fairchild" engineers at VSSC. I am now put into a more difficult situation without being allowed to ask for release from INSAT and ask for another Project for some more time.

Chairman, Brahm Prakash, Menon and Vellodi are going on a Space Delegation to France and W. Germany mainly to finalize some collaboration agreements around 24th September - 4th October.

My problem has not at all been solved - still to be presented to Dhawan.

I would like to know if you had seen the papers of AIAA Guidance/Control Conference held on August 14-16 at Stanford displayed at GSFC. If possible you may send copies of some relevant papers. If by chance you can get a copy of AIAA bulletin containing the details of the Conference (April, May or June) papers you may send the xerox of those pages to enable me to order the full set of those papers through library (May be about \$ 40-50 if published as one or two volumes).

The microfilms of the following are useful if you can get them :-

N68 - 12250 → NASA CR-86012
N68 - 12345 → NASA CR-86011
N68 - 12383 → NASA CR-86013
N69 - 33699 → NASA CR 86197
N69 - 33700 → NASA CR 86199
N72 - 20829
N72 - 20830

Things are becoming worse here: no more direct contacts with Chairman, only through filters - Vellodi, Seshan at Hqs. Also it looks no more initiative will be rewarded.

I happened to know about your letter to EVC. It does not seem to produce any concrete action. About "Space Application Centre" (SAC) at Ahmedabad no suitable "Oldman" has been found to become Director. PR Pisharoty was mentioned but not anymore. May be an outsider will come.

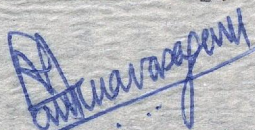
At any rate I may be soon leaving to VSSC. I heard BRRao has filed a case against ISRO in Kerala High Court challenging his suspension orders and ISRO has appointed a Lawyer for putting ISRO's case.

In VSSC a new Space Scientists' Committee (SSC) has been formed containing all Div/Heads and Controller and Director. TCFC is still alive - not for long. Came to know that VR Gowariker SCG in that order a seniority has been fixed in the absence of Director VSSC. Inevitable things will happen. You and I cannot turn the tide. Now only the seniority and pay counts.

Please write to me soon.

With my best wishes to you, Mrs.Rajan and Vijay.

Yours sincerely,



(R.M. VASAGAM)

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