



IN FLIGHT

Please see copy for J.L.

3/20/73

Dear Tom - SUMEX S.V. lessons.

We have still not found and justified a credible game for our robot to play. Yet as I tried to tell Klaus the brain needs a hand ~~to~~ as well as an eye to promote its own growth in a reality-oriented context. I should articulate more clearly to the study section ^① this orientation of our effort and ^② that there are still also prospects of early biomedical utility. Perceptors (e.g. speech recognition) may be a better model of successive, reciprocal refinements of hypothesis and data acquired. There is certainly much more simulation that could be set up within DENDRAL to justify this approach - e.g. "intelligent" search of the decisionaries of solved subproblems which is tantamount to a dynamic manipulation of GOODLIST oriented by data reference.

So whatever the outcome of SUMEX, there is still a lot of retrospective research that can be done, the "real time" instrument being a tape drive.

USA EUROPE AFRICA ASIA

(2) But I would like to see us put more imagination into building hardware. I think NSF would be receptive to proposals for new kinds of instruments; and if we have a hell now we should be thinking of more definitive pre-designs for digitally controlled mass spectrometers. These will certainly entail new approaches to internal calibration.

I wonder about trying to take something like PFK, seek PFK^{++} , and filter out the near-integral masses (or the one PFK^+ that would interfere with a given sample peak) with a low resolution m.s. that gates the reference ions into the beam.

For metastable work we need to learn how to improve M^+ yields at low ionization voltages; or alternatively to de-excite the excited states (~~collisions~~ collisions with ?)



Tom - let's have a session soon

say Monday 2³⁰ to extract lessons and positive directions from the SAMEX S.U. chemistry

① what is most we can do with minimum new hardware
A e.g. in re Genetics Res.ctr.

② Simulation mode of real time Dendral } i.e. external memory simulate instrument
③ Better part A Effets } plans for

④ looking into other PDP10s on net. Financial problem?

⑤ new instrument ideas on MS

controllable machine

photo image recording

internal calibration for HRMS

may need "intelligent control" for gating reference gas

2-D metastable scans

controlling energy of excitation laser inputs in flight?
consult Gidda

⑥ OTHER Parameters; OTHER AREAS of analysis that might better exercise our ideas of Real Time AI. (what is a more exciting instrument than GC/MS?)

(over)

Jpk.

whoever can come of the senior level

ECL EAF TR

Bruce B

Dennis

Carl D. (get. for him - but urge him if he
has some definite ideas

Alan D.

also we must schedule a SIGBIG earnest for
general briefing. Friday at noon^{23d.} * or

at 4? or 3/27 or 3/28.

* ask Ruth to verify whether my AR date is 3/23 or

3/27

Can Dennis arrange a demo of DENDRAL
(any port) for lecture 3/29 8¹⁵ pm at or
near Ken Zo University? (Lois Durham^{ext} 4480
solicited it)