sf, family C *4:45*

The Stuff that Dreams are Made Of

In memory of Abraham Savitzky, 1919-1999;
Shirley Weinland Hentzell, 1931-1999.

C F C
Once my friends and I read science fiction tales
Am G
We dreamed of space, and rockets to the moon.
C C7 F
Some day we'd live to walk upon the planets;
G C G C
The future, oh it couldn't come too soon.

F∗ C∗ C F
Now it's long past the time we called the future
C∗ C G
And still we carry on from day to day
C C7 F
The wonders of tomorrow still elude us;
G C
Reality keeps getting in the way.

C F C
And the starlit crystal spires along the Grand Canal,
C Am G
The cloudlight on the warm Venusian sea,
C Am Asus C F
Have vanished, like the stuff that dreams are made of;
G C G C
The future isn't like it used to be.

We watched as gallant men rode thunder to the sky
Our probes brought distant planets into view:
The dry and cratered plains of Mars and Venus—
Some dreams were dead before they could come true.

The Saturn Five once carried spacemen moonward
We've lost the plans to build her kind again
Bureaucracy and budgets dragged her under
Her launching pad stands rusting in the rain.

refrain
The century's last year was safely far away
We'd have machines that talked with us, and more.
We never knew the challenge we'd be facing
Was code we keypunched forty years before.

Atomic powered rockets were a pipe-dream;
Most cities still burn coal to chase the dark.
The monorail that once ran to the spaceport
Takes children to an outing in the park.
refrain
But the future that we lost is still someplace out there
Orion still rides hellfire toward the blue,
And rockets proudly land upon their tailfins,
As God and Robert Heinlein meant them to.

Yes, someplace there are old fans who remember
The way the future was when we were young,
And when the chains of space and time slip from me
I'll be part of the song that once was sung.

C
And I'll share a song with Rhysling,
F C
beside the Grand Canal,
C∗ G G7
Ride lightsails on the endless starry sea
F∗ C
When I've become the stuff that dreams
G F
are made of
G C G C
In the future of my childrens' memory.

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19971220/19980905 `stuff.flk`

My father went to graduate school with Isaac Asimov and was a long-time SF fan, though as far as I know he never went in for FANAC.[2] Many of the references in this song will be obscure to those unfamiliar with science fiction as it was before the opening of space in the 1960's.

The canals of Percival Lowell's Mars figured in almost every story about the Red Planet right up until the first probes proved beyond a doubt that there weren't any. "The Spires of Truth" are mentioned in the song *The Grand Canal* by Rhysling, the Blind Poet of the Spaceways, in Robert A. Heinlein's classic tale *The Green Hills of Earth,* which can be found in his book of the same title. We meet Rhysling again in the final chorus.

Similarly the clouds of Venus were generally believed to be water vapor, over a water-world of swamps and seas (see, for instance, Asimov's *Lucky Starr and the Oceans of Venus*, Heinlein's *Between Planets*, and *The Space Merchants* by Frederic Pohl). The probes, of course, proved that the clouds consisted largely of sulphuric acid, near the top of a deep atmosphere of carbon dioxide. Conditions at the surface are literally hellish, with pressures of 600 atmospheres and temperatures above the melting point of lead.

Pohl later wrote a book, *The Way the Future Was,* about the early days of science fiction fandom. Its title forms part of the last verse.

The Saturn 5, used to launch the Apollo astronauts to the moon, was the largest and most powerful rocket ever built. It still is. The engineering drawings for the Saturn 5 and its engines no longer exist. Kids graduating from college these days were born after men stopped going to the moon. Robert L. Glass used pictures of its abandoned launchpad to illustrate his book about failed software projects, *Computing Catastrophes.*

My father used to be a chemist; he has major patents in infrared spectroscopy (the dual-beam spectrophotometer) and digital signal processing (the Savitzky-Golay algorithm for smoothing and peakfinding). He got me interested in computers when I was in high school. In those days people were more worried about saving space on 80-column punched cards than about such trivial problems as what would happen when two-digit date fields rolled over. Code has a way of sticking around, however, and somewhere there is probably still an IBM System 390 mainframe emulating a 7090 emulating a 650 (with drum memory and tubes) emulating a patchboard program on a 407 punched-card tabulating machine. I've seen a square root patchboard for a 407—you don't want to know.

Robots[3] and other talking computers[4] of course, are still in the future. Atomic-powered rockets were stillborn: Freeman Dyson's *Orion,* powered by a sequence of nuclear explosions, was still in the early stages (a dynamite-powered prototype had actually flown in 1959) when it was killed by the Atmospheric Test Ban Treaty of 1963. Orion appears as the Earth-to-Moon craft in *2001.* Atomic power, once touted as safe, clean, and "too cheap to meter" has proved to be none of the above (though in terms of lives and pollution coal and oil are still much, much worse).

Almost every other SF cover illustration in the 50's featured cities of streamlined art-deco skyscrapers with monorail trains running on improbably fragile bridges between them. The best-known working example these days is at Disneyland.

Arlan Andrews, reporting on the first flights of the Douglas DCX (a prototype SSTO,[5] spacecraft) in a 1993 Analog article entitled "Single Stage to Infinity", said that the DCX and its kin "...take off and land vertically, the way God and Robert Heinlein intended." The phrase is frequently misquoted (I have merely paraphrased it; I believe my poetic license is still current) and often mistakenly ascribed (as I originally did) to Jerry Pournelle. Of course, the DCX had landing struts, not fins. Perhaps the best known exemplar of that style of flight was

[2]Fannish Activity, e.g., conventions, fanzines, and lettercols.
[3]See, for example, Isaac Asimov's classic *I, Robot.*
[4]E.g., Hal in Arthur C. Clarke's *2001, A Space Odyssey.*
[5]Single Stage to Orbit

seen in the George Pal film *Destination Moon,* for which Heinlein was the technical advisor.

Lightsails are still in the future, but could be the cheap way to fly the spacelanes. As I write this, the Russians are experimenting with large, lightweight mirrors near Mir. The classic story is "The Lady Who Sailed *the Soul*" by Cordwainer Smith. Others[6] have put in more technical detail, but noone has outdone Smith for sheer poetry and sense of wonder.

And in the end, that's what really matters, isn't it?

Oh, yes: "The stuff that dreams are made of" comes from Shakespeare[7] by way of Dashiel Hammett and Humphrey Bogart:[8]

> Our revels now are ended: these our actors
> As I foretold you, were all spirits, and
> Are melted into air, into thin air:
> And, like the baseless fabric of this vision
> The cloud-capp'd towers, the gorgeous palaces,
> The solemn temples, the great globe itself,
> Yes, and all which it inherit, shall dissolve,
> And, like this insubstantial pageant faded,
> Leave not a wrack behind: We are such stuff
> As dreams are made of, and our little life
> Is rounded with a sleep.

[6] E.g., Robert L. Forward in *Flight of the Dragonfly.*

[7] *The Tempest,* Act IV, scene 1; one of my favorite works of fantasy.

[8] as slightly mis-quoted in the last line of *The Maltese Falcon.*

19971220/19980905