

PARIS

Searching
for life
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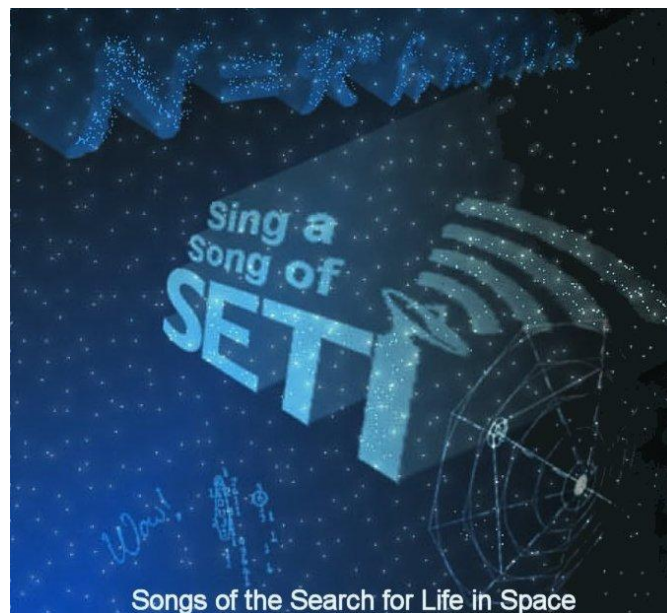
A la recherche des
signatures
de la vie

Evénements
tout public

Thursday, september 25 at 6 p.m.

“Sing a Song of SETI”, slides and songs

by H. Paul Shuch also known as Dr.SETI®



Le Bouillon Racine

3 rue Racine – Paris 6ième (subway Odéon ou Cluny La Sorbonne)

What is Filk Music ?

Filk, a perversion of the word folk, is the traditional music of science fiction fandom, sung at SF conventions around this world (and possibly others). The word started off as a typographical error in a Con program announcement, and caught on. An outgrowth of the American folk music revival of the 'sixties, filks are often written as parodies to existing melodies, and are frequently accompanied by guitar. The earliest example which I remember (there probably are earlier ones) actually predates my knowledge of the term filk: Dr. John Boardman's humorous 1961 "Asteroid Light" space chanty, sung to the tune of the popular "Eddystone Light" sea chanty. Filks generally deal with SF, fantasy, technology, space travel, and related scientific themes.

Dr. SETI's songs are examples of the sub-species known as science filk, in which the lyrics need to be true to scientific fact, as we understand it. Dealing as they do with SETI and radio astronomy, these songs are intended to pay tribute to the giants of SETI: those individuals and facilities which have contributed to today's understanding of the cosmos, and our place within it.

1. Karl Jansky
2. Grote Reber
3. Crazy
4. NRAO
5. Frank Drake's Equation, Oh!
6. Cosmic Carl
7. Ballad of the "Wow!" Signal
8. Fourth Rock From The Sun
9. SETI League Anthem
10. [SETI@home](#)
11. It Takes Time to Talk to ET
12. The Dish in Evpatoria
13. ET, Speak Up



1. Karl Jansky

lyrics Copyright © 1995 by H. Paul Shuch, Ph.D.

sung to the tune of Kilkelly by Peter Jones (1983)

In the 'thirties a phone call across the Atlantic would ride on a radio beam,

And there would be bad interference and static, but only at times, it would seem.

At Bell Laboratories a young engineer named Karl Jansky was given the task

Of solving the problem of static. And thankfully, he knew the questions to ask.

He built an antenna for the twenty-one MegaHertz, one which could not be ignored.

To steer it was turned on a circular track on the wheels of a Model T Ford.

He discovered the noise was indeed periodic, but in an unusual way:

The signals that Jansky detected appeared about four minutes early each day.

The only conclusion that Jansky could draw was sufficient to boggle the mind.

For the temporal pattern of radio noise no terrestrial cause could he find.

The static, he reasoned, must come from beyond, emanating from quite far away.

We now know the sound was the song of the stars at the center of our Milky Way.

In modern astronomy history Jansky has taken a prominent place

As he who discovered the very existence of radio signals in space.

We measure flux density these days in Janskys. They equal, you may be aware,

Just ten to the negative twenty-six Joules per second per Hertz meter squared.

2. Grote Reber

lyrics Copyright © 1995 by H. Paul Shuch, Ph.D.

sung to the tune of If You're Happy And You Know It (youth spiritual)

A radio ham in Wheaton, Illinois,

Grote Reber he was quite a busy boy

When he built himself a dish 'bout as big as you could wish

And he showed the world that it was not a toy.

Reber's mother was a teacher, and Miss Grote,

On occasion taught a juvenile of note.

One who never gave her trouble was the brilliant Eddie Hubble,

And that surely was an influence on Grote.

Reber pointed his antenna at the sky,

And as countless constellations drifted by

He recorded in dB all the signals he could see

And became the first to map the Milky Wye.

Grote submitted his results for peer review

To the Astrophysics Journal, though he knew

That without a Ph.D. they'd be skeptical, but he

Would be vindicated in a year or two.

Every astrophysics expert had his say.

They rejected Reber's radio Milky Way,

For the signals he depicted very clearly contradicted

Every cosmologic theory of the day.

Now Grote Reber he was never one to mope,

And he always could maintain a sense of hope.

As the generations passed, he acquired an image vast

As the father of the radio telescope.

3. Crazy

lyrics Copyright © 1996 by H. Paul Shuch, Ph.D.

Sung to the tune of Crazy by Willie Nelson (1961)

(awarded Honorable Mention at Lunacon '97 Filksong Competition)

Crazy / Scholars of dubious stature,
Thinking / They can converse with the stars!
Dig their / Scandalous paper in Nature.
Crazy, / Cocconi and Morrison are.

Crazy / Searching for communications
Tuning / Right on the Hydrogen Line!
They say / Signals from alien nations
Reach us. / They must be out of their minds.

Drake is / Building equipment at Green Bank:
"Ozma." / Guess what he's planning to do?
Listen / To Epsilon Eridani
At H1. / I guess that he's crazy too.

Think of / The universe they envision:
Planets / Abundant and teeming with life!
Colleagues / Must view their work with derision.
They're crazy for dreaming, / Crazy for scheming.
I only hope they're right.

4. NRAO

lyrics Copyright © 1995 by H. Paul Shuch, Ph.D.

sung to the tune of Take Me Home, Country Roads by Danoff, Nivert & Denver

Big antennas in the valley:
Quiet valley, Green Bank West Virginia.
You can slice the silence with a knife;
Microwave receivers search for signs of life.

Chorus:

Will the NRAO
Be the ones who will show
All of mankind we have neighbors?
Make it so, NRAO.

Project OZMA, 1960,
Frank Drake surveys two of our companions.
When he hears a signal from the sky:
U2 interference, not an ETI.

Refrain:

We'll meet our destiny on fourteen twenty MegaHertz,
Searching for intelligence from worlds far away.
So far we have verified no alien transmission
But we will, any day.

Soon the Order of the Dolphin
Makes this a respectable endeavor.
Grand equation, courtesy of Frank,
Glory to our SETI colleagues at Green Bank.

Final Chorus:

May the NRAO
Be the ones who will show
All of mankind we have neighbors.
Make it so, NRAO.

5. Frank Drake's Equation, Oh

lyrics Copyright © 1997 by H. Paul Shuch, Ph.D.

Sung to the tune of Green Grow the Rushes, Oh
(traditional)

Leader: I'll sing a factor of the Drake Equation.

Chorus: What is your factor of the Drake Equation?

All: R star is the rate of stellar formation.

Leader: I'll sing a factor of the Drake Equation.

Chorus: What is your factor of the Drake Equation?

All: fp is the fraction which develop planets,
R star is the rate of stellar formation.

Leader: I'll sing a factor of the Drake Equation.

Chorus: What is your factor of the Drake Equation?

All: ne are the planets which could be life-sustaining.
fp is the fraction which develop planets,
R star is the rate of stellar formation.

Leader: I'll sing a factor of the Drake Equation.

Chorus: What is your factor of the Drake Equation?

All: fl is the fraction on which life emerges.
ne are the planets which could be life-sustaining.
fp is the fraction which develop planets,
R star is the rate of stellar formation.

Leader: I'll sing a factor of the Drake Equation.

Chorus: What is your factor of the Drake Equation?

All: fi, intelligence evolves.
fl is the fraction on which life emerges.
ne are the planets which could be life-sustaining.
fp is the fraction which develop planets,
R star is the rate of stellar formation.

Leader: I'll sing a factor of the Drake Equation.

Chorus: What is your factor of the Drake Equation?

All: fc is intelligence choosing to communicate.
fi, intelligence evolves.

fl is the fraction on which life emerges.

ne are the planets which could be life-sustaining.

fp is the fraction which develop planets,

R star is the rate of stellar formation.

Leader: I'll sing a factor of the Drake Equation.

Chorus: What is your factor of the Drake Equation?

All: L is the lifespan of advanced societies.

fc is intelligence choosing to communicate.

fi, intelligence evolves.

fl is the fraction on which life emerges.

ne are the planets which could be life-sustaining.

fp is the fraction which develop planets,

R star is the rate of stellar formation.

6. Cosmic Carl

lyrics Copyright © 1995 - 1996 by H. Paul Shuch, Ph.D.

(Award Winner at Philcon '97 Songwriting Competition)

Sung to the tune of Old Rosin the Beau, by J. G. Osbourn (1838)

Note: Originally written as a tribute to mark Dr. Sagan's 60th birthday, these lyrics were revised to honor his memory on 20 December 1996.

Who is the colleague we won't forget,
Someone the populace knows?
It's Cosmic Carl on the TV set,
Billions and billions of shows.

Chorus:

Hail Cosmic Carl, let us raise a glass,
Billions and billions of cheers.
His is a message that's bound to last
Billions and billions of years.

Who was the author of great repute,
Up to whom everyone looks?
Cosmic Carl's written, without dispute,
Billions and billions of books.

Who knew genetics and told us so,
Mammals and fishes and birds?
Hear Cosmic Carl on the radio,
Billions and billions of words.

In these austere and uncertain days
Funding takes far more than luck.
Who else except Cosmic Carl could raise
Billions and billions of bucks?

Two hit recordings for Voyager
Launched for the planets past Mars.
Cosmic Carl's own golden records are
Now heading out to the stars.

7. Ballad of the "Wow!" Signal

lyrics Copyright © 1995 by H. Paul Shuch, Ph.D.

sung to the tune of Ballad of Springhill by Peggy Seeger;

Copyright © 1961 Stormking Music Inc. (used by permission)

Melody selected as a tribute to Peggy's brother, radio astronomer Charles Seeger.

It was fifteen August of 'seventy seven
At the Big Ear radio telescope
That a signal heard on the Hydrogen Line
Gave humanity cause for hope.

Declination at minus twenty seven
Right ascension nineteen hours and change.
When the signal rose out of the noise
The astronomers knew it was something strange.

The signal peaked at thirty sigma,
Thirty seven seconds at half power,
In a single channel ten kilohertz wide.
The computer printout logged the hour.

The CPU analyzed the signal,
The strongest ever seen somehow.
Jerry Ehman's eyes betrayed surprise
As he wrote in the margin one word: "Wow!"

Was the Wow! a call from a distant planet?
Sadly, we may never learn.
Though we looked again a hundred times,
The signal never did return.

That the Wow! came from an intelligent species
Never could be convincingly shown.
Yet we still scan the skies with our radio eyes,
Because we know we are not alone.

8. The Rock That's From The Fourth Rock From The Sun

lyrics Copyright © 1996 by H. Paul Shuch, Ph.D.

(Award Winner at Philcon '96 Songwriting Competition)

Sung to the tune of The Female of the Species Is More Deadly Than the Male,

by Leslie Fish (used by permission)

Within a Martian rock they've found the fossilized remains
Of a micro-organism which had neither brawn nor brains.
We're gaining quite a glimpse into how life might have begun
From the spot that's on the rock that's from the fourth rock from the Sun.

It's from a Martian meteor, and scholars think they know
How it fell in the Antarctic thirteen thousand years ago.
Though found in 1984, it languished 'til someone
Made a study of the rock that's from the fourth rock from the Sun.

Results are inconclusive, though it certainly appears
That the fossils in the meteor date back three billion years.
The scientific inquiry has only just begun
Of the spot that's on the rock that's from the fourth rock from the Sun.

With spectrographic readings and electron microscopes
They commenced to probe in ways that would rekindle SETI's hopes.
Abundant PAH's could be seen by anyone
Who would scrutinize the rock that's from the fourth rock from the Sun.

It's time to launch a mission to send robots back to Mars.
Though it isn't inexpensive, it's much closer than the stars.
If we could bring back samples, there is much which could be done
To determine if there's life upon the fourth rock from the Sun.

Though others have disputed it, Fred Hoyle is truly fond
Of a theory that says life on Earth was seeded from beyond.
And I'm the Great Great Great Great Great Great Great Great Grandson
Of the spot that's on the rock that's from the fourth rock from the Sun.

9. The SETI League Anthem

lyrics Copyright © 1995 by H. Paul Shuch, Ph.D.

(Award Winner at Philcon '95 Songwriting Competition)

Music: verse Wishful Thinking by P. Alan Thiesen (used by permission)

chorus Pretty Redwing (traditional)

My satellite antenna is pointed at the sky
But I'm not watching television. Let me tell you why.
I'm searching for existence proof of any alien race
By sifting through the microwaves that fall from outer space.

Chorus:

I am part of the search that's known as SETI,
I'm a believer, with a good receiver.
There are coherent signals beaming at me,
And when I find one, then I'll say "Wow!"

Because the Drake Equation says that N is roughly L
I'm praying that the aliens are all alive and well.
By tuning through the Water Hole I'm sure to hear them call,
And when they do we'll finally know we're not alone at all.

Chorus

Five thousand loyal amateurs all working as a team
Are making a reality of what was once a dream.
If we're to be successful, then I have a single wish:
Won't you please join the SETI League and build yourself a dish?

Final Chorus:

Come and join in the search that's known as SETI
Be a believer, get a good receiver.
There are coherent signals beaming at us,
And when we find one, we'll all go "Wow!"
It's gonna happen, any decade now.



The SETI League, Inc.

433 Liberty Street, PO Box 555

Little Ferry NJ 07643 USA

Phone 1 (201) 641-1770

Fax 1 (201) 641-1771

Web <http://www.setileague.org>

email heather@setileague.org



10. SETI@home

*lyrics Copyright © 2000 by H. Paul Shuch, Ph.D.
sung to the tune of The Old 8JK, © 1996 by H. Paul Shuch*

The giant antennas of SETI are poised
To ferret out patterns submerged in the noise.
Their efforts are valiant, but one thing they lack
Are humongous computers quite up to the task.

Chorus:

But distributed processing gives us the power
To do signal analysis hour after hour.
If a million computers run SETI@home
We are bound to determine that we're not alone.

The huge Arecibo astronomy dish
Produces more data than any could wish.
But to analyze all of it, day after day
Would require far more clout than the world's fastest
Cray.

Chorus

At a conference on Capri, Woody Sullivan told
Of a mountain of archival data, quite old.
If it could be analyzed after the fact
We might find the evidence SETI has lacked.

Chorus

The PC revolution could even the score.
In the US alone, fifty million ore more
Display flying toasters for most of the day.
Could their idle cycles be harnessed some way?

Chorus

With the archival data parsed out on the net,
Distributed processing seems a good bet.
Each packet will run only 340K,
And a Pentium can analyze two in a day.

Chorus

A screen saver showing the Fourier transform
Will highlight all features exceeding the norm.
Computers can take data in and attack it,
Upload the results, and go fetch a new packet.

Chorus

And when we have drunk Arecibo's well dry
There is amateur telescope data to try.
A million PCs and a thousand home dishes
Are a powerful team to fulfill SETI's wishes.

Chorus

11. It Takes Time To Talk To ET

lyrics © 2007 by Dr. H. Paul Shuch

Sung to the tune of "Lucille," © 1976 by Roger Bowling and Hal Bynum

SETI's a science that places reliance on radio signals in space.

Wave propagation of ample duration is likely to reach any place.

If we receive, understand, and believe any message that falls from the sky,

Flirt with disaster, and craft a good answer, it still may be futile to send a reply.

CHORUS:

It takes a long time to talk to ET.

EM velocity can't exceed c .

Waves go the distance without much resistance.

They get there eventually,

But it takes time to talk to ET.

It's a tradition in hard science fiction to write of a two-way exchange

Crossing the cosmos. I surely enjoy those, but there are some things you can't change.

There is no photon that we pin our hopes on that ever can try to compete

With tachyon waves as they're said to behave, but if those aren't fictitious, they're surely discreet.

CHORUS

You say, "I don't care about waves. I'll go there in person at warp factor ten."

That's merely ruminal. Speeds superluminal can't be accomplished by men.

If we can't fly there, I think it is most fair to say they can't reach us as well.

So we try radio. Even though very slow, such one-way messages volumes can tell.

CHORUS

12. The Dish in Evpatoria

(an Active SETI Singalong)

lyrics © 2008 by Dr. H. Paul Shuch

sung to the tune of "The Bog Down in the Valley, Oh!"

aka "The Rattling Bog" (Irish traditional)

CHORUS:

Heigh, ho, the radar dish,
The dish in Evpatoria,
Heigh, ho, the giant dish,
The dish in Evpatoria.

And at the dish there is a tube,
A big tube, a klystron tube,
A tube at the dish,
The dish in Evpatoria.

CHORUS

And from the tube there comes a wave,
A small wave, a microwave,
A wave from the tube
And the tube at the dish
The dish in Evpatoria.

CHORUS

And on the wave there rides a code,
A ones code and zeroes code,
A code in the wave
And the wave from the tube
And the tube at the dish
The dish in Evpatoria.

CHORUS

And in that code resides a call,
A warm call, a friendly call,
A call in the code
And the code in the wave
And the wave from the tube
And the tube at the dish
The dish in Evpatoria.

CHORUS

The coded call now forms a beam,
A thin beam, a narrow beam,
The beam with the call
And the call in the code
And the code in the wave
And the wave from the tube
And the tube at the dish
The dish in Evpatoria.

CHORUS

And soon that beam will reach a star,
A warm star, a G2 star,
The star in the beam
And the beam with the call
And the call in the code
And the code in the wave
And the wave from the tube
And the tube at the dish
The dish in Evpatoria.

CHORUS

Around that star there is a world,
A fine world, a water world.
The world at the star
And the star in the beam
And the beam with the call
And the call in the code
And the code in the wave

And the wave from the tube
And the tube at the dish
The dish in Evpatoria.

CHORUS

And on that world there lives a race,
A bright race of ETI,
The race on the world
And the world at the star
And the star in the beam
And the beam with the call
And the call in the code
And the code in the wave
And the wave from the tube
And the tube at the dish
The dish in Evpatoria.

CHORUS

And to that race we send regards,
We greet them, respectfully,
The race on the world
And the world at the star
And the star in the beam
And the beam with the call
And the call in the code
And the code in the wave
And the wave from the tube
And the tube at the dish
The dish in Evpatoria.

CHORUS

13. ET, Speak Up

lyrics Copyright © 1998 by H. Paul Shuch, Ph.D.

Sung to the tune of *Nessie, Come Up* by Dr. Jane Robinson (used by permission)

as heard on the album "*Dr. Jane's Remains*" (Dandelion Digital)

The scientist at her computer considers the Fourier transform:

The same nulls and peaks she's looked at for weeks, and nothing exceeding the norm.

If only an alien signal would fall on her giant array,

The thunder would crash, lights ring and bells flash. But that isn't happening today.

Chorus:

ET, speak up, we're listening, we've waited for far too long.

Send us a sign on the hydrogen line, to show that the skeptics are wrong.

Spectrally pure, so we can be sure it's intelligence singing her song.

Oh ET, we've waited so, (waited so, waited so), ET we've waited so long.

SETI was funded through NASA at twelve million dollars a year.

A bargain, you know. We spend that much dough each Superbowl Sunday, on beer.

But that didn't satisfy Congress. They'd rather the money be spent

Reducing the sum of the deficit fund by point oh oh oh six percent.

Chorus

Now we must privatize SETI. We're starting to muster the troops,

Recruit Star Trek fans, and radio hams, and set up some non-profit groups.

Our common objective is global: an organized survey of space

To ferret out clues which science can use as proof of an alien race.

Chorus

The amateur at his computer is finally getting his wish.

He's starting to see a hint of ET received through his satellite dish.

He'd love to have twelve million dollars, but works with what he can afford.

His hits verified by peers far and wide, their findings cannot be ignored.

Chorus

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<http://drseti.org>

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