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Janet Kuypers

Periodic Table of Poetry readings and requests in Kenosha 2/21/14 at "The Brat Stop"
I am more than just
c, H, O, N, P and S —
I am so much more

(“Life”, Periodic Table haiku)
It’s Christmas Eve, and the Science Fiction channel had a *Star Trek* movie marathon on. Yeah, I watched some of *Star Trek: Nemesis*, and I heard once again their talks about Dilithium, an extremely hard crystalline mineral... You see, they use Dilithium crystals to stop reactions with antimatter, so they use Dilithium shields... And yeah, maybe it was *Star Trek*, but think about it: in *Star Trek*, streams of matter and antimatter are directed into Dilithium to heat up the excess deuterium gas, giving them a plasma that actually powers their warp drives.

Kind of cool if that worked in the real world...

But think of what is cool about *Star Trek*: they use names of places on planets in the Solar System (like Utopic Palenitia, near Mars’ north pole) when describing the creation of the Enterprise D, they’ll take a common molecule formed in the creation of our Universe and use it in their reactions (that seem impossible to us scientists in the real world) and pull off seemingly impossible feats in their science fiction.
So I had to check it out:
I knew a thing or two about lithium,
but is Dilithium actually real?
Well, yeah everyone, it is,
and Dilithium is Li2,
meaning that two lithium atoms
bonded together,
and that lower-case “i” in there
means it’s in a gas form.
But the cool thing
(scientifically)
Is that since lithium is #3
in the Periodic Table, that makes
Dilithium the lightest stable
neutral homonuclear diatomic
molecule after H2 (deuterium,
which was made along with hydrogen
in the initial minutes after
the Big Bang).

Because in the scientific world,
they find a ton of value
in the study of this molecule,
probably much in the same way
they need it so desperately
in Star Trek to pull off warp drive.

And you may think I’m kidding,
but researchers are working on
a fusion impulse engine
that runs on real “Dilithium crystals”
to cut the travel time to Mars
from six months to just six weeks.
The fusion fuel they’re focusing on
combines Dilithium and deuterium
(is this sounding familiar?).
Because the one thing I have noticed is that scientists often reflect on their science fiction loves, they try to emulate those stories and re-create what their iconic writers and directors first envisioned.

So, when you look at all the technology from the science gadgets we have around us today, you can thank the scientists and engineers, but sometimes you can also thank the writers who planted the seeds of what we have today in the heads of the scientific world.

Because maybe we can’t beam anyone up and molecularly disassemble ourselves for reassembly somewhere else, but maybe the original Star Trek communicator was the prelude to the cell phone, and maybe science fiction’s thoughts on Dilithium crystals forming warp drive can lead us into deep space ourselves.

Because really, we’d all love Dilithium if it will help us embrace our race into space: the final frontier.
So my husband has this nice Fossil watch that he wears only when we go out on nice dates now. You see, he says he doesn’t need a watch because he has his cell phone with him at all times, and it always tells time in accordance with GPS.

But recently he broke down and bought another watch, one that looks like a small child should wear it, with a huge black band and face and neon glowing hands.

Lovely, I thought, I thought just using the cell phone was bad enough. So I asked about the glowing hands on his watch (and thought about the original radium watch faces painted by women who got cancer from radiation). And he said no, the numbers and dials are covered in Tritium.

And I thought, great, another element that probably will leak into people causing certain eventual death. But he said no, this is safe, it’s only an isotope of hydrogen.

And I thought, oh... So it’s just another boring element that we Americans are using to try to make life easier for people who grow tired of using their eyes.

I don’t think he liked my saying that. So he said, wait a minute (knowing how I seem to like learning about Atomic bombs and World War Two and the like), Tritium is used in the process of making the Hydrogen bomb.

Hmmm.
So I read that Tritium for American nuclear weapons was produced in special heavy water reactors. But tritium undergoes radioactive decay (ergo the glowing watch faces, I’d wonder, though I’m sure he’s stress that there’s no dangerous radioactivity in his watch - oh wait, he said it’s “safe” radioactivity), but Tritium’s used in “boosting”, increasing the speed and yield of fission bombs.

And yeah, he was trying to get me to like his child-like black glow-in-the-dark watch by linking it with heavy water in WWII and Hitler’s efforts to get the bomb first. Scary to think that tactic might work with me, but at least he’s trying to get me like the watch that he chooses to wear.
Thallium

I swirled the wine glass in my hand.
I watched the red wine swirl,
creeping its way to the lip
as I hypnotically observe the vortex.

I like drinking my red wine from those
low, wide-mouthed glasses
so you could smell the sweet aroma
without even drinking. But now,

now I check my fingernails,
looking for dark ridges. I wonder if I
should pull out a few hairs
and check the roots for telltale stripes.

I scan my brain to check if I have enemies,
the coast seems clear, but still I fear
that this precious liquid I hold in my hand
could be the vehicle for my demise.

And no, my liver’s fine, it was just tested,
and I’m not talking about alcohol poisoning
unless it’s because someone put something
in my drink I wouldn’t taste, or smell, or see.

But my brain now flashes to Thallium,
this superconductor, once used to treat
syphilis, gonorrhea, or even tuberculosis
is such a highly toxic heavy metal
that it was used for rat poisoning, and sometimes even for hair removal (yeah, trace amounts of Thallium can even make you lose your hair). But the thing is,

I’ve heard that if you drop it into something like, say, red wine, no one would be the wiser and you could kill someone without your victim even knowing they were ever in danger.

If I keep this up, I’ll really start to worry whenever my stomach hurts, whenever I feel nauseous, or even have diarrhea. If I feel numbness, or tingling and pain,

I’ll second-guess myself. I’ll have to check the shower drain for excessive hair loss, and I’ll check my fingernails and follicles again to make sure I’m in the clear.
And our life is one big road trip now, and we set the cruise control and make our way down the expressway.

And most of the time we’re just moving in a straight line, and the scenery blurs. There’s nothing to see.

But I know what’s inside of you and I know what you’re made of. There’s no such thing as a calm with you.

You are a fantastic car crash. You stop traffic in both directions — *In your twisted way, you come from the decay of others... And what do you leave in your wake? More radioactive destruction, as all around you slows down to stare,*

*and all the gapers gawk, as the decay grows.*

*Everything shatters with you, you know. It’s a spectacular explosion, until your instability corrodes you down to the basics in the world. And yeah, what was left of you after you were gone is so much more stable than what you were,*

but still, I’d duck and cover as metal flies through the air. Every time you leave the scene of the accident,
I am left picking up the shards of glass from the windows. You know, the glass breaks into such tiny little pieces. They look like ice.

It takes so long to pick up the pieces, and even though I’m careful, I’m still picking up the pieces

*after dealing with only fractional amounts of you. I’ve only been able to infer what you’re like by knowing your brethren,*

while I’m stuck here, picking up the pieces, and I’m still on my knees.
The glass cuts into my hands,

*because it was only after so much of your destruction that you left blood dripping down to the street.*

think of this as *your contribution,*
*this radioactive short-term flash of decay...* think of this as *your contribution*
to this fantastic car crash that is you, that is me, that is us.

*I’ve tried to learn, I’ve tried to study these microscopic parts of you to make sense of you...* 

*But whether or not you ever leave enough, despite your destruction, despite this decay of yours,*

*I have to keep reminding myself that when it comes to you, This is what you do.*

*This happens all the time.*

So,

*I to pull the glass from my hands and I wave my hand to the line of traffic: go ahead, keep driving, this happens all the time, there’s nothing to see here.*
Now, I know they named the element Plutonium after the at-the-time newly-discovered planet, but I can't help but wonder if any of those scientists who deal with Plutonium now feel slighted that the planet was demoted to a planetoid.

But if these scientists care at all about astronomy, they have to feel consoled that, at least, their element Plutonium is used with the element Neptunium when extracted from spent nuclear fuel rods. And Neptunium is a by-product in production.

Added bonus, if this element’s namesake was named after an icy ball at the edge of our solar system, at least now the element can hang and work with the element Neptunium, which, like that element’s namesake Neptune, is a bit of a gas giant itself. Fermi discovered Plutonium, and the silvery-white element (looking not unlike an ice ball) was even originally used in weapon design in the Manhattan Project...

Because you know, even if the planet Pluto is really just an icy ball from the Kuiper Belt, at least in the Periodic Table Pluton“ium” can at least hang out once again with it’s once astronomical brother Neptun“ium” and feel important again.
Carbon

I used to see the magazine ads
and the tee vee commercials.
All I was taught
was that a big busted blonde
was all I could aspire to be.
So I would dye my hair.
So I could act the dumb blonde.
I could still beat them
at any mind games,
but men don’t like the truth
shoved in their faces,
because they refuse to believe
anything that doesn’t stroke
their ego.

So yeah, I was a carbon copy
of what the media shoved
down America’s throats.

And yeah, as time went on
the dark-haired women
started to gain some popularity back,
but they still had to be anorexically thin
and they still had to battle
the notion of all men
still adoring the dumb blonde.
And yeah, as the years wore on
I didn’t have to die my hair,
but I still had to be thin,
I had to be the carbon copy
of the dark-haired, gaunt,
soulless faces
plastered on billboards,
papers and screens.
I pass the magazine stands, see carbon copies of the models on multiple magazine covers.

I pass the media store with rows and stacks of repeated tee vee screens, showing carbon copies to the world of what we’re supposed to be.

I don't want to be a carbon copy of anything. I want my own thoughts. my own ideas, and I want to spill them out for the entire world to read and hear.

But carbon copy or not, I end up resigned, knowing that despite our differences, we are all carbon—based life forms. I mean, when scientists look for life on other planets, they always only look for water first. Well sure, hydrogen, oxygen, life as we know it needs it, I get it. But carbon-based life forms are all we know. I mean, whether or not they have arms or legs, or gills, or a mouth, or a brain, they all have carbon in common.

So when I see the atrocities mankind causes:
when I see Adolph Hitler,  
the vegetarian artist wanna-be,  
when I see Adolph Hitler  
collect his cult followers  
to systematically slaughter  
millions...

when I see the stacks  
of the skin and bone emaciation,  
stacks of bodies in ditches,  
or in rooms, stacked in a pyramid  
to the small hole for air in the ceiling  
after their final “shower”...

when I see the pope  
visit Cuba  
and wear a sombrero...

when I see chickens  
crammed into rows of cages  
they cannot move in,  
for their eggs, for their flesh...

and when I see  
the rows of pre-packaged  
barely recognizable cow flesh  
wrapped in cellophane,  
row after row in the grocery store...

It is then I have to remember  
that despite everything,  
and as much as I hate to admit it,  
we are not all that different.  
I mean,  
if nothing else,  
we are all  
carbon-based life forms.
Silicon

I knew that Silicon is good for plant metabolism, which should make me be happy as a vegetarian and a woman with I don’t know how many plants potted and taking over my home. But Silicon is barely ever needed for animal life... In nature, Silicon seems to be better suited for sea sponges. And although I love the sea, the last thing I want to be called is a sponge. And you know, if Silicon is used by anyone in the animal kingdom, you can believe that I really dislike breast implants made out of Silicon (or made out of anything unnatural to the human body, for that latter). And after my Lasik eye surgery, I even heard they use Silicon for some contact lenses — which makes me glad I don’t need contacts anymore.

So if Silicon doesn’t have a use organically for humans, I guess it makes sense then that Silicon is actually used by humans in explosives and pyrotechnics. But really, for the abundant element, Silicon has to have some better uses for us humans, like in semiconductors, or even integrated circuits...

But whenever I go out and walk on the beach, feel the sand work it’s way between my toes, I should remember that Silicon Dioxide is pretty much sand.
Then again, I heard that people were suing Taco Bell a few years back, because their “Taco Meat Filling”, was only one third meat, plus flavorings, and a bit of Silicon Dioxide.

So yeah, people wondered, and were asking if Taco Bell “meat” was actually made with sand.

I know, I know, Taco Bell had to explain that Silica — or Silicon Dioxide — is commonly used for foods, and Taco Bell was just using the harmless oxide to absorb water and keep the meat from clumping.

Hmmm... So if Silicon is common enough to be under our feet on beaches around the world, and if this vegetarian should be pleased that Silicon is used during plant metabolism, then I guess I’ll have to expect us humans to use Silicon (even if we don’t need it) to help us see better with eye contacts, or comically exaggerate our breast size, or even use integrated circuits to help set off some cool fireworks, because Silicon has to be cooler than just the beauty of the beach at sunset.
When the bulldog ant of Australia
is cut in half,
the halves see each other as enemies.

The head attempts to devour the tail.
And the tail,
in an effort to defend itself,
battles for up to thirty minutes
to sting the head.
And this battle happens everywhere

in the world, because life is always
that battle
between the two halves of the whole.

#

Because everything contains that twin,
one part good,
and one part you’ve construed into something

so horribly wrong. And you want to tear it apart,
that other half,
you despise everything about it —

everything that somehow is a part
of you.
So you, in life, always possess that battle.

#

This even applies on a molecular level.
Consider hydrogen:
it’s in our water we drink and bathe in,
and atomically, we’re sixty-seven percent hydrogen. 
But on November first nineteen fifty two,

“Ivy Mike” was the code name
for the first
successful test of the hydrogen bomb.

It’s funny how we can take something
so needed for our life
and, like our sun, turn it into something
to destroy everything we know. 
Because as I said,
one side gives life, the other kills.

#

And thanks to “Ivy Mike” and that hydrogen bomb,
two elements were discovered —

one of them was named after physicist
Enrico Fermi. 
You see, Fermi worked on “Chicago Pile-1,”

the first nuclear reactor. Fermi worked in a space
under Chicago University’s then unused

football stadium bleachers. That’s because the school
had not used the football stadium

for three years, because the school thought sports
were a distraction from academics.
Fermi, “the father of the atomic bomb”.  
also worked  
on the Manhattan project, and Fermilab  
outside of Chicago was named after him.  
And here’s the kick:  
the hydrogen device that produced  

Fermium was designed by Richard Garwin,  
Enrico Fermi’s student.  
So for all that Enrico Fermi had done,  
it seems fitting that Fermium is  
the heaviest  
element formed by the nuclear  
bombardment of lighter elements  
(like hydrogen).  
And this highly radioactive element  

was initially kept secret due to the  
cold war.  
But it’s amazing what we can discover  

while taking something we so need  
for life,  
and turning it into an instrument of death.  

#  

Because Fermium was classified  
in the cold war,  
Swiss scientists bombarding oxygen,  

discovering an isotope if it, and wanted  
to name it  
centurium (to honor element one hundred).
Good thing Fermi’s nuclear work got declassified, so they could honor Enrico Fermi with “Fermium”.

But wait, Fermium is bad, it’s radioactive, there can’t be any good applications for it...

Well, consider the two sides of any twin: Fermium’s the only element that can use it’s alpha particles in radio therapy for cancer. And yes, it’s radioactive, but it’s short half life means it decays quickly. Because as I said, it’s amazing how two sides can be both bad, and also so good.
Indium

As I touch the screen display, see images and words moving along the small LED screen, I feel you there, just on the other side.

I say I’ve never needed you, but you’ve always been just on the other side, displaying what I wish to see, lubricating what cannot meld together.
You’re as brilliant to me as a shining silver metal but you’ve been so fluid that you melt when I see you.

That may be why you’ve always been just on the other side when it came to us, and only allowed me to admire you like this from afar.
Boron from
the Big Bang

The Higgs boson,
the Higgs particle.
The God particle,
as some have called it.
It's an elusive
elementary particle
theorized about
for nearly half a century.

They call it the God particle
because it might have created
all matter.

You see, scientists
are trying to figure out
how the Big Bang
started to evolve.
You see, the theory
is that all of the universe's energy
was created
from this massive explosion
from
nothingness.
But the question remains:
how did any
of that energy
turn into matter?
Because during the first few minutes of our universe after the Big Bang, the temperature was so hot, that it was too hot for any binding energy that could have supported any matter, even hydrogen or its isotope deuterium. With temperatures so hot, this bottleneck delayed the formation of anything until the universe was cool enough to make anything out of anything.

But just a few minutes after the Big Bang, elements burst forth, because the universe suddenly got cool enough. But at twenty minutes after the Big Bang, the universe was suddenly TOO cool for nuclear fusion or nucleosynthesis, and THAT is when elemental abundances were nearly fixed...
That means hydrogen, helium and trace amounts of lithium, beryllium and Boron were the elements formed in those first three minutes of the Big Bang. (Sorry, any elements starting at carbon or higher were only formed after stars were around to create them.)

...So the creation of matter out of energy during the formation of this universe only happened in an insanely brief period of the universe’s history. Was it just the insanely hot temperature in this insanely short period that did it?

And what does this have to do with the Higgs boson particle anyway?
Well, scientists believe this Higgs particle is a part of the Higgs field, an invisible field of energy throughout the entire universe. That Higgs particle interacts with whatever energy passes through the Higgs field. And with this interaction, particles, massless particles, they trade their energy to gain mass when passing through.

And this Higgs field, in the beginning of the universe, helped create matter.

Which helped create us.

Higgs helped create matter, including the first elements in the universe, from hydrogen to the comparatively heavy Boron.

Yeah, five electrons is heavy in the formation of the universe.

Yeah, Boron, which helps keep our bones strong. Boron treats osteoarthritis. Boron builds muscles, and when it comes to trying to understand this science, it even improves our thinking skills.
We’ve known of Boron
for thousands of years,
from the deserts in Tibet,
or from China in glazes
through to Persia
before it got to Italy,
where it was used
for medical purposes.

Well, knowing how long
we’ve used Borax for cleaning,
or even that Boron’s used
to make the strongest
magnet ever made,
it’s nice to know
that we also understand
how much this
infancy-of-the-universe
element
is vital in everything in our lives,
from our muscles and bones
to the very creation of the universe.

Yeah, it’s cool to see
how scientists
are starting to piece together
how matter came to be
in this universe,
because without that Higgs field,
and without that Higgs particle,
energy would never
have turned into
Boron,
to create any

thing,
or even create us.
Flerovium

I’ve had you on my mind.
I think you have been trying to reach me since before I was born,
since before fission bombs were imagined in the forties.
I would sense you, but then I’d look around me.
There would be nothing.
Where did these feelings come from.

Since as far back as ninety eight
I would get this tingling feeling every once in a while,
and within a minute the feeling would be gone.
Then I’d look over my shoulder.
There would be nothing for me to see.

And now I find
that since oh nine
the feeling now comes to me all the time.

At times this feeling - like a bomb through my body - would rush over me,
my bones would almost crumble from under my skin,
my heart would race
and my legs would shake, and I’d look for any island of stability to save me.

How did I know I was looking for you.

#
Theoretical physicists postulate that there are more dimensions than we can see.

Some speak of a fourth dimension.

Some talk of ten.

So what I wonder is that at these times, when this devastating wave comes over me, well, I wonder if it is you, coming at me from another dimension, and I haven't been able to make contact with you just yet.

Maybe I don't know what's good for me, you make me shake to my core but I want to know if you're actually the one destroying me like this, from the inside out.

When I feel this corrosive feeling inside me that I can't control, maybe I should learn my lesson and keep myself in check, and leave the idea of you as just this feeling I think you give me.
Tin

(sung to a beat)

If I only had a brain

if I only had a brain

I’d get out from under
this bent tin roof
that covers me
as I sleep at night

tin metal sheets
keep the rain away
but the wind

but the wind

if I only had a brain

I wouldn’t use
my old tin cup
to stand and face east
at Canal and Randolph
and ask for change

I wait for commuters
to cross the Chicago river
to get to their train

you see, I wait
at the other side
and the ones with the money
have to walk right by
that’s when I rattle
my old tin cup
give them doe eyes
say “God bless”

but if I only had a brain
I wouldn’t rattle
my tin cup
and ask for tin change
I’d get myself up

if I only had a brain
I’d have a lot of money
I’d eat at fancy restaurants
I’d wear the plastic bib

if I only had a brain
I wouldn’t be poor
drinking
tin cans of Fanta
eating
soup from a tin can
living
on Tin pan alley

if I only had a brain
you might bend me
but I just won’t break
‘cause if I had a brain
then I’d be great
I knew you were out there for years.  
But to get you, after toiling in my Dubna lab  
we had to ask the Americans  
over in Tennessee  
if they could send us  
some of their wares,  

but years passed before I could get  
22 milligrams of Berkelium  
so I could work in Moscow Oblast  
to get you in my sights.  

All that time, all I could do  
was research, hope.  
I’d work, I’d go  
and I’d stand on my own,  
and I’d leave on my own,*  
wondering how long it would take  
before I’d see what you might be like.  

You see, I used to work at a pharmacy  
at Nevsky Prospekt in Leningrad,  
that’s when I fell in love  
with learning about chemicals,  
and that is when I wanted  
to discover something truly new.  

That’s when you came into the picture.  

Because after years of work,  
I still waited for those damn Americans  
to come through for us.  
I mean, we’re scientists,  
we’re supposed to be on the same side,  
this is all about discovery.  
And the thing is,  
the higher we get in our research,
the more stable we got
on our little island of knowledge.
But this waiting was exasperating —
I got to the point
that I got tired of trying to tell myself
that I had something to discover,
something to share,
that someone wanted to hear.**

Eventually, they had to ship
what I needed to get you
in five packages wrapped in lead;
it flew back and forth
across the Atlantic five times
and was rejected twice by customs.
But once I got what I needed —
oh, you were just about
the heaviest thing I could imagine.
Then again, you’ve had me
spinning around over the years for you,
so it wouldn’t surprise me
if you would do the same for me.

So I’d work while listening to the radio,
and active actions from you
would come to me in short bursts.
But I’ll take whatever I can get
in my little corner of the world.
This is research. And this is what I do
to learn what I can from you.