Stellar Metamorphosis: The New Gyrochronology

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Abstract: Gyrochronology can be used to measure the age of a low mass, or highly evolved star. Depending on how fast the star is spinning, we can also determine how fast it lost its mass from earlier stages of evolution, which in turn tells us if it was orbiting very close to another host. This is all in accordance with the general theory, meaning the oldest, most highly evolved and/or dead stars will barely spin at all. Examples are provided with hand written notes.

According to the dogma, the Sun is a low mass star.

Gyrochronology

From Wikipedia, the free encyclopedia

Gyrochronology is a method for estimating the age of a low-mass star like the Sun from its rotation period. The term is derived from the Greek words *gyros*, *chronos* and *logos*, roughly translated as *rotation*, *age*, and *study* respectively. It was coined in 2003 by Sydney Barnes[1] to describe the associated procedure for deriving stellar ages, and developed extensively in empirical form in 2007.[2]

Unfortunately the dogma is wrong, again. The Sun is actually a very young star with 330,000 times the mass of the Earth. The Earth is a low mass star, comparatively speaking. Only highly evolved stars, or stars that evolved quickly can be low mass. The young stars are very heavy, like the Sun and Rigel. This is in accordance with the general theory.

We can determine how old a star is by its rotation, only if we understand first what old stars look like. That is only possible using the general theory. Old and dead stars look like this (Credit NASA's Messenger probe).

Mercury. This is an extremely old, dead star.

Now that we understand what an extremely old dead star looks like, we can measure its properties and make inferences. Only the stars that are still evolving rotate with any frequency on their own, without any interrupting body. A few notes that need to be sorted are listed below, simply because this is a brand new understanding and is still ignored by the establishment:

1. Venus is extremely old ~450 billion - ~1.56 trillion years old. It barely spins at all. http://vixra.org/pdf/1905.0251v1.pdf

2. Mercury barely spins, which signals it is extremely old similar to Venus. Measurements of its D/H ratios still need to be made.

3. Neither Mercury or Venus are tidally locked, but probably were tidally locked at one point.

4. The Moon is tidally locked to the Earth, which signals that it has been orbiting the Earth for an extremely long time, and inside of a

much closer orbit. Since the Earth was much more massive in its past, this means the tidal locking of Moon to the Earth was probably done with Earth's vastly thicker atmosphere and oceans, and possibly was even irradiated by the Earth when Earth was a red dwarf star. The case stands, the Moon has been in orbit around the Earth for billions of years, and clearly was captured by the Earth's past huge gravitational field.

5. If there is no tidal locking from a close in body to a host, then it can mean the companion hasn't been in orbit around its host for a long time, or it is orbiting too far from the host. This means a couple of things. For instance if there is a companion tidally locked to a host and it is orbiting much further out than tidal forces can impact, it means it was pulled by some other body away from the host.

6. Dogma teaches that stars that shine and have extreme masses are as old as the oldest stars which no longer shine and have lost the majority of their early mass. The case stands, they teach people that the Sun is ~4.5 billion years old and the Earth is also 4.5 billion years old. When the General theory predicts that the Sun should be a couple million years old, based on its extremely low D/H ratio of 1/10,000,000.

Their problem is that they place extremely young, massive stars as being as old as objects like the Earth, which is totally false. Earth is vastly older than the Sun. This means that the claims of the extremely old stars being tidally locked to the youngest stars, is probably false. There just simply hasn't been enough time for older, spinning, evolving stars to be tidally locked to younger hosts (the stars that shine).

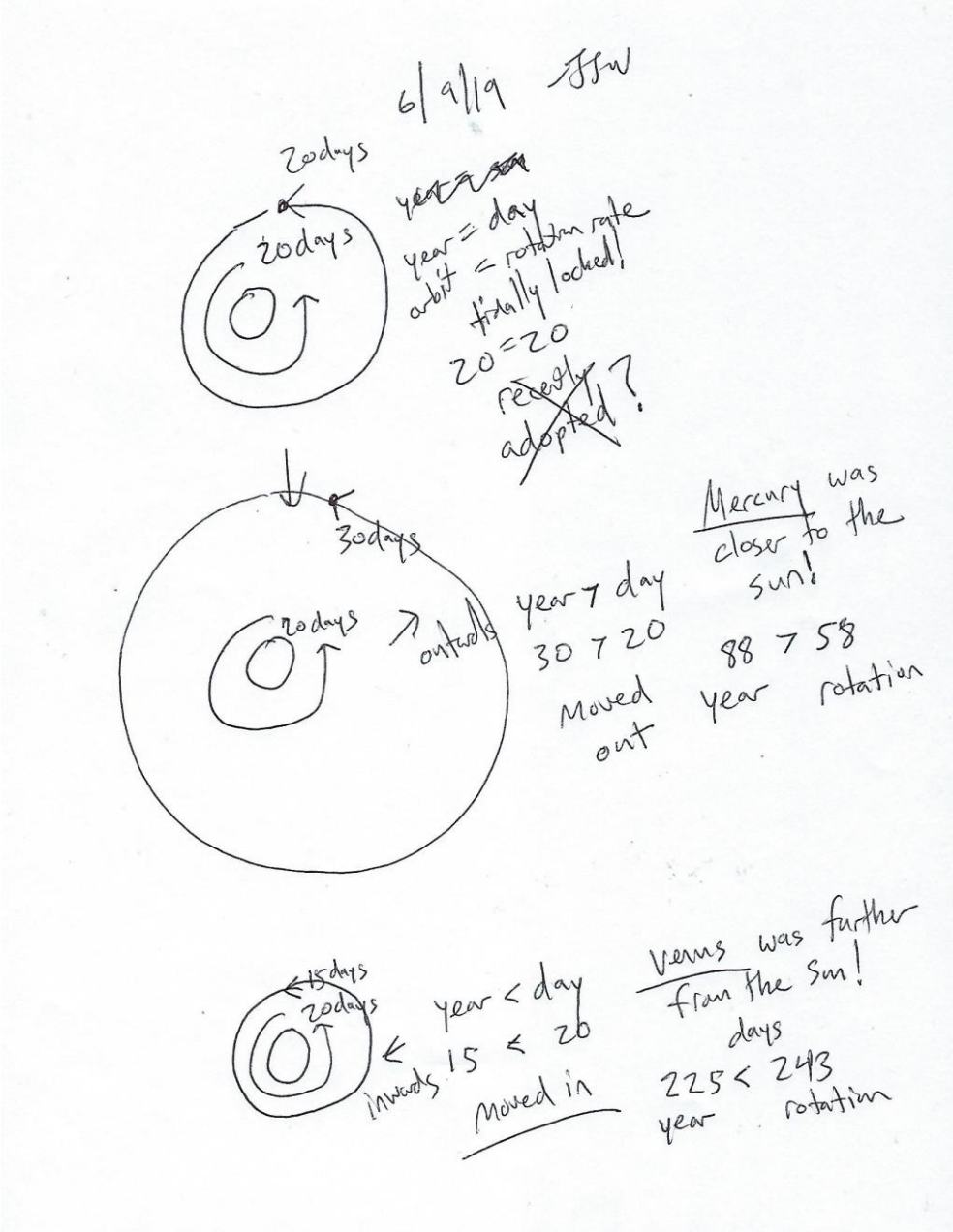
What is most interesting, is that we can determine how long objects have been in orbit around a host by if it is tidally locked or not. Now that we have an age for Jupiter for instance of ~632-731 million years old, and most of its large moons are tidally locked, then it means tidal locking comes rather quickly, when compared to the total ages of the objects. Saturn even more so, since its age is ~590 million years old, and Titan is tidally locked. http://vixra.org/pdf/1905.0467v1.pdf More work will need to be done to further that line of thought.

7. Stars remain spinning as they evolve, unless they experience tidal forcing from another object, which can make them speed up or slow down. So most interestingly, Venus and Mercury, the dead stars that clearly were tidally locked to a different body in their past, can have their previous orbits inferred. For instance, Venus's year is 225 days, but its rotation is 243 days. Since it is too far to have experienced any tidal locking mechanism from the Sun, its past orbit must have been a bit wider. As well, the Sun was vastly larger than it is now, so it could have caused tidal locking with Venus earlier. Venus has since moved in closer to the Sun as the Sun shrunk from earlier stages of evolution. Mercury is different. It was closer in

and moved outwards from the Sun. Its year currently is 88 days, and it rotates once every 58 days. This means it was tidally locked at 58 days (a closer orbit). This is really cool, because the angular momentum of Mercury was transferred to Venus. So Mercury moved outwards, and Venus moved inwards.

8. The Sun will contract further and will start to spin faster as it loses mass. The rate of mass loss will be slower than its contraction though. Once it reaches red dwarf stages the contraction will exceed the rate at which it can expel mass, so the star will begin flaring more violently. As the violent flaring increases, the loss of mass rate will increase, the red dwarf Sun will move into brown dwarf stages, and the star will slow down its spin rate. This means younger brown dwarfs will be spinning fast, and older brown dwarfs will be spinning slow. A young brown dwarf could have a rotation rate of 51 minutes, and an old one about 10 hours. So, what this means is that determining on the rate of spin of a brown dwarf will determine how fast it lost its mass. More work will need to be done to outline these ideas.

9. A dead star can have its rotation spun up considerably if it is adopted by a more massive star. What happens is that the dead star gets tidally locked to the host at a close in orbit. Next, the dead star's orbit is interrupted by the host adopting another object which absorbs the angular momentum of the previous dead star, flinging it out of its close in orbit. This leaves the rotation rate of the object that was in a close in orbit the same as it was when it was close in to the host. For dead stars that do this we can make a simple inference. Its year will be longer than its day, this is the case with Mercury. For stars that move inwards from a further out orbit, their year will be shorter than their day, this is the case of Venus. Much more work will need to be done to expand this idea.



10. Differential rotation plays a part as well. Highly evolved stars will have less and less differential rotation as they evolve. For instance the Sun rotates at 36 days at poles, but 24 days at the equator. Jupiter on the other hand rotates at 9 hours, 56 minutes at the poles, and 9 hours, 50 minutes at the equator. The level of differential rotation of the star probably signals the stability of the star. What is also extremely strange, is the idea that stars when they are young, are essentially ringing themselves like you would a wet wash rag. This means gravitational collapse isn't a phenomenon that only works radially (meaning only down towards the center in straight, or rectilinear lines), it does so with multiple bands of differential rotation which are collapsing semi-independently of the whole body of the star. As the gravitational collapse happens, the

bands of the thick atmosphere play catch up with each other, each with different pressures and temperatures (and naturally chemical compositions). What this means is that differential rotation of a star is direct evidence of gravitational collapse of the whole body. Therefore the case stands, the Sun cannot be expanding outwards into a red giant, because if it were it would not be wringing itself like a giant spherical wet dish rag. As well, the difference between the rotation rates of the body can also signal the intensity of the gravitational collapse. More differential rotation like the Sun's 150%, signals more intense collapse, which is reasonable because that is why it shines so brightly. The heat produced from gravitational collapse turned into friction is being converted to heat and light. What the differential rotation also tells us is that the Sun is very young. Old stars are settled out, and do not rotate differentially. They are composed of rocks and minerals, so their differential rotation rate is nearly non-existent. The only thing that can rotate differentially is the interior versus the exterior, which can cause the magnetic field to be off center as opposed to the total rotation near the surface of the star.