Slow & Steady Wins the Race (Summer Saints 2021: Katherine Johnson)
A sermon preached by the Rev. J. Thomas Buchanan on August 8, 2021
Friendship Presbyterian Church

In the presence of God and of Christ Jesus, who is to judge the living and the dead, and in view of his appearing and his kingdom, I solemnly urge you: proclaim the message; be persistent whether the time is favorable or unfavorable; convince, rebuke, and encourage, with the utmost patience in teaching. For the time is coming when people will not put up with sound doctrine, but having itching ears, they will accumulate for themselves teachers to suit their own desires, and will turn away from listening to the truth and wander away to myths. As for you, always be sober, endure suffering, do the work of an evangelist, carry out your ministry fully.

As for me, I am already being poured out as a libation, and the time of my departure has come. I have fought the good fight, I have finished the race, I have kept the faith. From now on there is reserved for me the crown of righteousness, which the Lord, the righteous judge, will give to me on that day, and not only to me but also to all who have longed for his appearing.
(II Timothy 4:1-8, NRSV)

We've come a long way in this Summer Saints series over the last two months. Our "Summer Saints" have offered us many different perspectives on what living in the light of the Gospel … living in pursuit of the *Truth* ... looks like, what it can mean. The Truth indeed sets us free, but along the way it can teach us many different things and meet us in different guises.

- With Kierkegaard, we saw that the truth that matters is not just objective fact, but that which addresses us and seizes us at the core of our being and gives us something for which we can live and die.
- With Sojourner Truth, we saw that the Truth is something to proclaim with conviction, knowing that it has the power to change the world.
- With John Witherspoon, we saw that the Gospel Truth engages the *whole* of our lives … not just the "spiritual," but also the material … not just the individual and the personal, but the social, life in community, too … as if it were all encompassed by the sovereignty of God.
- With Emily Dickinson, we saw that the Truth is something to be faced, and that, in part, means facing our own mortality and making our peace with it.
- With William Henry Sheppard, we saw that speaking Truth to power – especially uncomfortable or inconvenient truth – is essential to the *justice* which is at the heart of the Gospel.
- With Harper Lee, we saw that the Truth is like a beautiful song which persists in the midst of the darkness, and which must be cherished and preserved if we are to remain fully human.

- And last week, with Charles Darwin, we saw that the Truth is bigger than what we've imagined and that it offers us a gift of seeing the Creation again with fresh eyes, and with it, new ways of understanding and articulating our faith.

Some of these figures have been quite famous, others more obscure. Darwin, last week, was probably the most famous of all of them, but it is appropriate that our final Summer Saint in some important ways is the one who was most like us … that is, most like an ordinary person (excepting that she was a mathematical genius!).

I speak, of course, of the American mathematician Katherine Johnson, whose calculations of orbital mechanics were critical to the success of the first U.S. spaceflights with a human crew, and subsequent spaceflights. During her 33-year career at NASA and its predecessor, her work included calculating trajectories, launch windows, and emergency return paths for Project Mercury spaceflights, including those for astronauts Alan Shepard, the first American in space, and John Glenn, the first American in orbit, and rendezvous paths for the Apollo Lunar Module and command module on flights to the Moon. Her work was also essential to the beginning of the Space Shuttle program. She earned a reputation for mastering complex manual calculations and helped pioneer the use of computers to perform the tasks.

To the broader public, her story would be almost completely unknown but for the popular 2016 film *Hidden Figures*, telling the true story of a group of African-American women who worked at NASA during the space race of the 1960's. It features the actress Taraji Henson as Johnson and chronicles her triumphs and her struggles as she and her co-workers did their extraordinary work in the face of the ever-present realities of racism and sexism. In the end, what the movie reveals … what her life story reveals … is an ordinary person, with some extraordinary gifts and the willingness to *persist* in the face of hardships, and by that persistence, she "got us there."

She was born Creola Katherine Coleman on August 26, 1918 in White Sulphur Springs, West Virginia – the youngest of four children. Young Katherine showed strong mathematical abilities from an early age, and graduated from high school when she was only 14 years old. She then enrolled at West Virginia State, from which she graduated summa cum laude in 1937, with degrees in mathematics and French, at the tender age of 18. She took on a teaching job at a black public school in Marion, Virginia.

In 1939, after marrying her first husband, James Goble, she left her teaching job and enrolled in a graduate math program and decided on a career as a research mathematician, although this was a difficult field for African Americans and women to enter. The first jobs she found were in teaching, but at a family gathering in 1952, a relative mentioned that the National Advisory Committee for Aeronautics (NACA) was hiring mathematicians, blacks and whites, for their Guidance and Navigation Department. Katherine accepted a job offer from the agency in June 1953.

The family settled in Newport News, Virginia, though her husband James tragically died of an inoperable brain tumor in 1956, and, three years later, Katherine married James Johnson, a U.S.

Army officer and veteran of the Korean War. They would be married for the next 60 years, until his death in 2019.

An oral history of Katherine Johnson and her career was archived by the National Visionary Leadership Project, telling us this:

> *At first, she [Johnson] worked in a pool of women performing math calculations. {She] referred to the women in the pool as virtual "computers who wore skirts". Their main job was to read the data from the black boxes of planes and carry out other precise mathematical tasks. Then one day, [Johnson] and a colleague were temporarily assigned to help the all-male flight research team. [Her] knowledge of analytic geometry helped make quick allies of male bosses and colleagues to the extent that, "they forgot to return me to the pool". While the racial and gender barriers were always there, Katherine says she ignored them. [She] was assertive, asking to be included in editorial meetings (where no women had gone before). She simply told people she had done the work and that she belonged*.

Indeed, from 1953 to 1958, Johnson was *literally* a human computer! Originally assigned to the West Area Computers section supervised by white female mathematician Dorothy Vaughan, she was reassigned to the Guidance and Control Division of Langley's Flight Research Division. It was staffed by white male engineers. In keeping with Virginia's racial segregation laws, and federal workplace segregation introduced under President Woodrow Wilson in the early 20th century, Johnson and the other African-American women in the computing pool were required to work, eat, and use restrooms that were separate from those of their white peers. Even their office was labeled as "Colored Computers."

Though she certainly could see the segregation for the evil that it was, she didn't allow it to get to her or to impact her research, as she felt strongly that she had a mission, and it was critically important that it get done.

NACA disbanded the colored computing pool in 1958 when the agency was superseded by NASA, which adopted digital computers. Although the installation was desegregated at that time, other forms of discrimination were still pervasive. It was sexism that proved to be an even greater challenge. Later in life, Johnson recalled that era in her own words:

> *We needed to be assertive as women in those days – assertive and aggressive – and the degree to which we had to be that way depended on where you were. I had to be. In the early days of NASA women were not allowed to put their names on the reports – no woman in my division had had her name on a report. I was working with Ted Skopinski and he wanted to leave and go to Houston ... but Henry Pearson, our supervisor – he was not a fan of women – kept pushing him to finish the report we were working on. Finally, Ted told him, "Katherine should finish the report, she's done most of the work anyway." So Ted left Pearson with no choice; I finished the report and my name went on it, and that was the first time a woman in our division had her name on something*.

For 28 years, from 1958 until her retirement in 1986, Johnson worked as an aerospace technologist, moving during her career to the Spacecraft Controls Branch. She calculated the trajectory for the 1961 space flight of Alan Shepard, the first American in space. She also calculated the launch window for his 1961 Mercury mission, and plotted backup navigation charts for the astronauts in case of electronic failures.

When NASA used digital computers for the first time to calculate John Glenn's orbit around Earth, officials called on Johnson to verify the computer's numbers! Glenn had asked for her specifically and refused to fly unless Johnson herself verified the calculations!

Author Margot Lee Shetterly put it so well when she wrote, “So the astronaut who became a hero looked to this black woman in the still-segregated South at the time as one of the key parts of making sure his mission would be a success.” She added that, in a time where computing was “women's work” and engineering was left to men, “it really does have to do with us … not valuing that work that was done by women, however necessary, as much as we might. And it has taken history to get a perspective on that.”

Through this and after this, Johnson worked directly with digital (that is *non-human*!) computers, and her ability and reputation for accuracy helped to establish confidence in using them. In that brave new world, she was not only Not Replaced, but she *grew* with the new technology, and with it, made vital contributions to the Apollo 13 mission to the Moon, the Space Shuttle program, the Earth Resources Satellite, and even to plans for a mission to Mars.

Her social influence as a pioneer in space exploration and computing is demonstrated by the honors she received and her status as a role model for young people in pursuing careers in science and technology. In 2015, at the age of 97, she was awarded the Presidential Medal of Freedom and cited as a pioneering example of African-American women in STEM fields and as one who, in President Obama’s words, “refused to be limited by society's expectations of her gender and race while expanding the boundaries of humanity's reach.”

In 2016, a new 40,000-square-foot building was named the "Katherine G. Johnson Computational Research Facility" and formally dedicated at the agency's Langley Research Center in Hampton, Virginia. The facility officially opened its doors the following year. Johnson herself attended this event, which also marked the 55th anniversary of astronaut Alan Shepard's historic rocket launch and splashdown.

At the ceremony, deputy director Lewin told the assembled crowd, “Millions of people around the world watched Shepard's flight, but what they didn't know at the time was that the calculations that got him into space and safely home were done by today's guest of honor, Katherine Johnson.”

Having faithfully run her race for many, many years, she died at a retirement home in Newport News, Virginia on February 24, 2020, at the age of 101. In the words of NASA's administrator, she died as "an American hero" whose "pioneering legacy will never be forgotten."

And yes, for all this, there's one more thing I must add: she was also a *Presbyterian* – an ordained Elder in fact – and was a member of Carver Memorial Presbyterian Church in Newport News for 50 years, where she sang as a faithful member of the choir!

In reviewing Katherine Johnson's life for this final Summer Saints Sunday, one verse rose up in my spirit again and again – that wonderful verse in II Timothy, attributed to the Apostle Paul, "I have fought the good fight, I have finished the race, I have kept the faith" (II Timothy 4:7, NRSV). These words were written after a lifetime of faithfulness – a lifetime modeling the very advice given to the young Timothy, to "proclaim the message; [to] be persistent whether the time is favorable or unfavorable; convince, rebuke, and encourage, with the utmost patience …" (v. 2).

Since we all were children, we have heard the old maxim, "Slow and steady wins the race." All our lives we've known Aesop's old story of the Tortoise and the Hare … of how the Tortoise, though not as flashy as the Hare, won the race by slow but steady progress towards the finish line. It was his *perseverance* by which he reached the goal.

Katherine Johnson lived this truth first-hand. Despite facing daily indignities of racism and sexism, she knew she had a calling. She knew she had a mission in life, and she showed up each day and fulfilled what was before her for that day. And she kept at it, often without notice or accolades, day after day, week after week, year after year, and by doing so, she helped us achieve one of the greatest triumphs in human history – to break the barrier of space and see our fragile planet from the heavens themselves.

But even greater than this is her most profound legacy: inspiring countless young people, especially girls and young people of color, to discover the heights to which they can ascend when they believe they can, freeing them to dream new dreams and steadily pursue new truth with persistence.

To the Glory of God! Amen.