Review by John Campbell on „Cloudy Nights“ (posted on 28 July 2022)

I just finished it. Where to begin? There's just so much I could say about it...

First, It's easy to be taken aback by the sheer physical presence of this meaty tome. I've always been a bit of a bibliophile, and have bought many hundreds of books over the years, but I've never seen or held anything like this book. It's so big and heavy that there's no question of reading it horizontally or even upright on a living room chair. No sir! This needs to be read at a table, and in good light, because the reproductions of sketches and other scanned primary documents require good light to be fully appreciated. I also had a 3x magnifier handy.

This was probably the most wonderfully challenging book I've read in many years. It's challenging because there's just so much detail! It's hard to overstate this: *there is so much detail!* It's important to keep in mind that Steinicke is an expert on the NGC, and the work of William, Caroline, and John are the basis of the NGC. In one of the last sections of the book, he refers to Dreyer's "The Scientific Papers of William Herschel" and writes that Dreyer's two volume book was "in effect, a scientific biography of William Herschel". And that's what this book is - a detailed scientific biography of William Herschel. It spans his entire career as a visual observer, covering just about every aspect of his life as an astronomer. When reading it, one can't help but feel immersed in the astronomical life of William Herschel. And what a life that was!

But of course, it wasn't *just* William, was it? Any biography of William shows William and Caroline were a team. While it's true that Caroline plays a supporting role, and William is the "star" of the show, there's no doubt she was an astronomer in her own right. Her work is essential to the whole Herschel project. It was Caroline who took down and reduced the positions as best she could given the limits of the instruments used to determine positions (which improved over time). One regular note often quoted from Caroline's notes is "Messier has it not.". But apart from that, she also made a few of her own discoveries including 7 (8?) comets. . Some might say she's the unsung hero of this incredible work, but she's not unsung. Caroline's key role has always been acknowledged.

One thing that struck me as I was reading the first half of the book is the sheer amount of data William and Caroline had to deal with. William discovered just over 2400 non-stellar objects, and independently just under a hundred more. Positions had to be given for each object, with reference to the Flamsteed Catalogue. That's a lot of data to be sorted and reduced by hand! It turns out it's so much data, that Steinicke is probably the person who has finally settled some of the outstanding mysteries in the NGC. At times, one gets the sense that Steinicke is a kind of NGC detective.

Another thing - how did William and Caroline ever manage to get any sleep? Not only was William completely obsessed with finding as many double-stars and non-stellar objects as could be found in the heavens, during the day he never stopped building and improving his telescopes and mirrors. Caroline, meanwhile, had a massive amount of work to do organizing and reducing the data. It's almost superhuman what this brother and sister team managed to accomplish. And we call them amateurs!

After reading this there can be no doubt: William Herschel was the greatest visual astronomer that ever lived, and the team of William and Caroline the greatest that ever was.

Then there's Steinicke's analysis of the sweeps, which is nothing short of incredible. In other biographies I'd read about these sweeps but had no idea what was involved, but now we have as complete an analysis of the sweep method as anyone can hope for. On pp 434-435 he shows just how efficient these sweeps were, and what an extraordinary observer Hershel was. Steinicke is able to to show that given the sweep areas covered, Hershel managed to discover 2447/3523 possible NGC objects! That's a hit rate of 70%!

Steinicke's "William Herschel..." is a monumental work in itself. It will likely be referred to by historians of astronomy and amateurs alike for many years to come. Surely this is the definitive work on the scientific life of William Herschel. It might just be the most complete work ever written on the scientific life of any astronomer. It's a book I will always have handy (well, as handy as an 8 lb book can be!) as a reference. If one wants a more standard biography, Michael Hoskin's work is excellent and highly recommended. But this is another kind of biography altogether. It takes you into the mindset, methods, and motivations of William Herschel like no other book has.

This is my attempt at a brief review, as much for my benefit as for anyone else. I would love to read a scholarly review but haven't found one yet. If you want an overview, watch Steinicke's presentation to the Herschel Society here. If you're curious about the sweep method analysis, skip to this.