



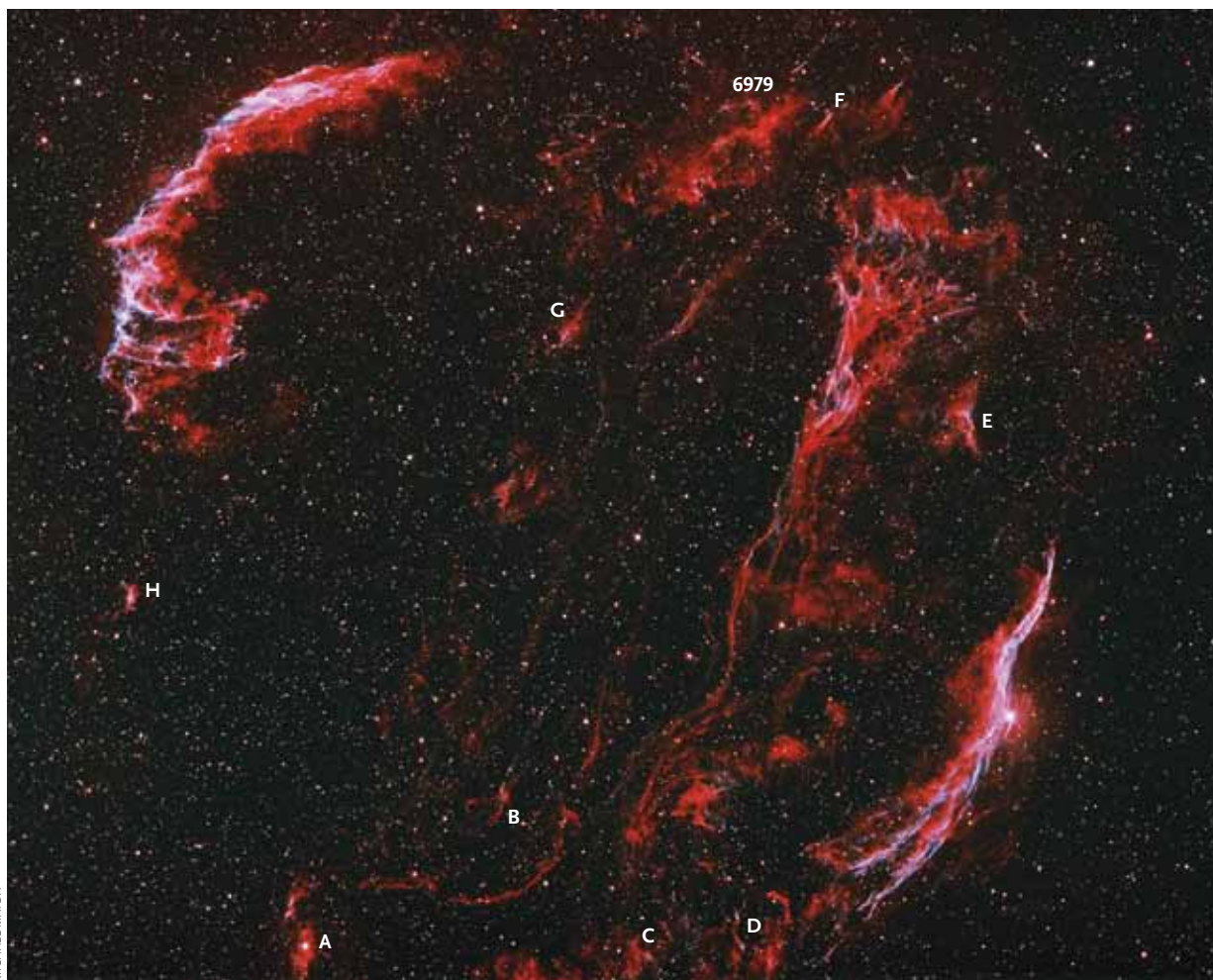
# Beyond the Familiar Veil

*There's more to this nebula than the bright arcs and Pickering's Wisp.*

**CONSIDER THE** intricate Veil Nebula in Cygnus to be the most striking nebula of all, surpassing the much brighter Carina, Orion, and Tarantula nebulae when viewed through a 6-inch or larger telescope. William Herschel discovered the Veil in 1784. This complex, 3°-wide supernova remnant was once considered a challenge object even though its easternmost and brightest arc (NGC 6992/5) is obvious in 7×50 binoculars.

The view through an O III filter of the Veil Nebula's two main arcs, NGC 6960 and NGC 6992/5, is what made that filter famous about 30 years ago, and all of the observations described in this article were made using an O III filter unless stated otherwise.

With an O III filter on my 16-inch f/4.5 Newtonian, **NGC 6992/5** exhibits diagonal streaks. It also has "bays" and "headlands," as depicted on *Millennium Star Atlas*



This is a composite of exposures shot through H $\alpha$  and O III filters. H $\alpha$ , which is invisible to the human eye at low levels, is shown as red. The O III areas, which to a great extent coincide with the ones observed by the author, are shown as bluish white. North is skewed slightly clockwise from straight up, so area D is partially cropped off.

(MSA) chart 1169, which is reproduced at right. And I can see some of the lacework detail that's shown on the image on the facing page. The two "fangs" of **IC 1340** that project westward from NGC 6995's southern end are my favorite part of the entire complex.

Without a filter, I can see only the northern spike of **NGC 6960**, running north from 52 Cygni, a yellow-and-orange double star. The O III filter shows that this northern spike has bright edges. It also reveals the arc south of 52 Cygni, where NGC 6960 is fainter and eventually becomes bifurcated.

An O III filter used under dark skies shows Simeis 3-188, better known as **Pickering's Triangular Wisp**, northeast of NGC 6960. My 80-mm refractor at 14× fits both arcs plus Pickering's Wisp in a single wide field of view. Larger scopes can trace the Wisp's long, winding tail as well. This marvelous complex can be followed for almost 2°, much longer than either of the bright arcs.

On three nights last summer I used my 16-inch reflector to star-hop to all 19 of the smaller splatters of nebulosity that are plotted on *MSA* chart 1169. Here are descriptions of eight of these splatters as seen with an O III filter and a 16-mm Nagler eyepiece yielding 114×. The sections that I saw are labeled and sketched in red superposed on the *Millennium* chart.

**A** is a narrow band of haze centered on the 6.3-magnitude star HR 7999. I could not follow the nebulosity, which is obvious to the north of the star, past the bright star, but it reappeared immediately to the south of it. The streak bends southwestward and then disappears at the Vulpecula border, 12' from the star.

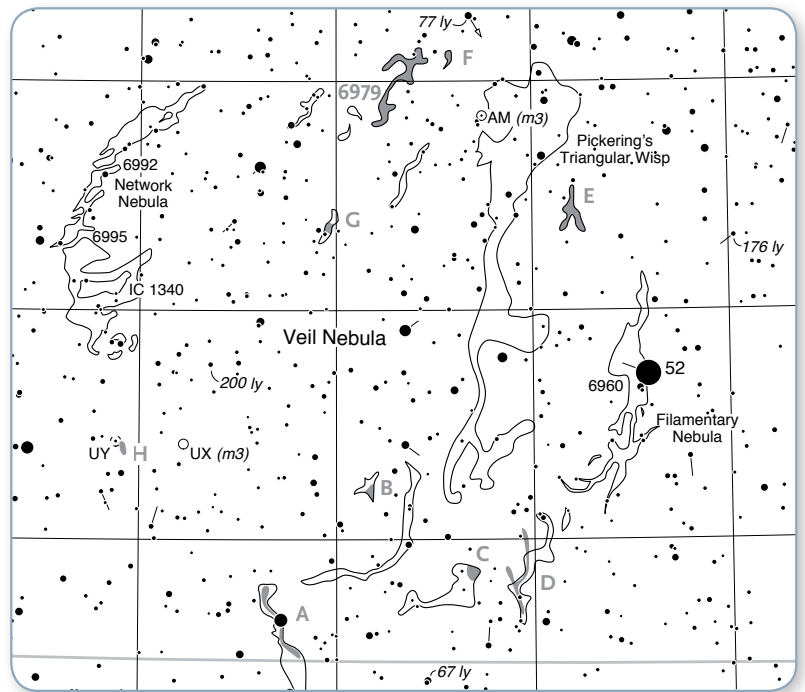
At **B** just a very small patch at the southwestern tip of the charted nebulosity was visible. **C** is a triangular patch, brightest at its western tip.

**D** was interesting and challenging. Starting near the southern end of the area on the chart, it ran northward and split into two streaks, as sketched, which continued outside the boundaries of the charted nebulosity. Observing D was educational. On the third night of observing I shortened the northeastern arm on my sketch, having realized that on the first two nights my mind had been fooled by clumps of very faint stars into extending the streak past the end of the nebulosity.

**E**, a 12'-long, Y-shaped patch just southwest of Pickering's Triangular Wisp, is quite obvious with the O III filter, and my view essentially matches the *MSA* chart. Because it was so easy with the filter, I was surprised to find that it was invisible when I later attempted it without a filter.

**F** is small, but surprisingly obvious. It's elongated 4:1, north to south.

On the best of the three nights, subtle **NGC 6979** appeared much as plotted, including the arm extending toward the number 6979 on the *MSA* chart. But on the first evening I could only detect the thin section



immediately south of declination +32. Even without a filter, I logged this section, labeled NGC 6974 on some charts, as "suspected."

Only the central quarter of the very faint patch labeled **G** was visible — the part within the flat triangle of stars that is plotted on the *MSA* chart.

To avoid the power of suggestion, I looked at an image of the Veil Nebula only after my first night of observing. The image confirmed the nebulous patches described above and also guided me to a patch of nebulosity about 1/2° south of NGC 6995 that, surprisingly, is not plotted on the *MSA*. Labeled **H** on the chart, this patch was bright enough to be obvious even during my star-hop to the field at 76× without a filter. With the O III filter at 114× it was a 2.3'-long, oval patch elongated 2:1, lying north-northeast to south-southwest. How can something this bright not have an NGC or IC number?

Other than NGC 6979, I have not read any other accounts of these small streaks and blobs being seen at the eyepiece, except for a pioneering observation of streak A that Atlanta stargazer Dave Riddle made a decade ago with his 18-inch during a Florida observing run.

This detailed survey of the Veil Nebula was not done on some remote mountaintop. My valley-bottom observatory is located in the well-populated Okanagan Valley of southern British Columbia. But I carefully chose a yard that's south of the valley's three cities and in a subdivision that decades ago voted to be streetlight-free in a referendum because the residents recognized that the night sky is part of nature! The result is that the gegenschein is occasionally visible from my backyard in October. ♦

*Alan Whitman is a fan of supernova remnants. He has observed seven, most recently the supposedly invisible Cas A.*

The areas observed by the author (aside from the two bright arcs and Pickering's Wisp) are sketched and labeled in red.