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What Color is the White House?
See p. 119.

What Color Is the White House?

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Figure 1. The 29¢ White House coil stamp (Scott #2609) color varieties: Normal (center), “Indigo” (upper-left), “Navy Blue” (upper-right), “Chicago Blue” (lower-left), and “Light Blue” (lower-right).

The question posed in the title of this article appears to have an obvious answer. However, the answer is actually quite difficult when the “White House” in question is the one that appears on the 29¢ White House coil stamp printed by the Bureau of Engraving and Printing (BEP) and first issued in April, 1992 (Figure 1).

For almost 20 years, rare color errors and color varieties of this issue have been mired in a widespread lack of understanding and misidentification. Even now, many of these modern rarities are sitting in specialized collectors’ albums still misidentified from when they were purchased from dealers and auctions almost two decades ago. The confusion stems from people’s varying perception of color and the early misuse of the names originally selected to identify the distinct colors.

In addition to the normal blue ink used to print this stamp, four distinct color varieties have been found and given the names of “Indigo,” “Navy Blue,” “Chicago Blue” and “Light Blue” (see Figure 1).

This article will trace the history of these color varieties and provide a clear means for proper identification.

Color Specifications and Production

The United States Postal Service (USPS) specifications for the 29¢ White House coil stamp identify the bi-colored stamp as being printed using red (PMS 185) ink and blue (PMS 295) ink. (PMS® is an abbreviation for “PANTONE MATCHING SYSTEM®,” a standardized color identifying system used in the printing industry for spot color printing.) Swatches of these two colors are shown in Figure 2.



Figure 2. Swatches of PMS colors specified for the printing of the 29¢ White House coil stamps.

The red ink was used to print the red stripes of the USA flag that dominates the top half of the stamp design and the blue ink was used to print the remaining components of the stamp design. The inks were applied as spot colors using an intaglio process and not intended to mix in any portion of the design.

To maintain image quality and minimize the two different ink colors from blending together where they appear near each other in the printed design, the BEP initially used two separate inking-in rollers to apply the blue ink and one inking-in roller for the red ink on the single intaglio printing sleeve. An inking-in roller applies a single color of ink to a cylindrical printing sleeve in segregated locations as required to produce the resulting printed stamp images. Because a single printing sleeve was used to print all of the colors, the entire printed image, composed of the separate red and the blue inks, was printed on the paper web in a single application.

Sometime during the early production of this stamp, the second blue inking-in roller was determined to be unnecessary by the BEP. Subsequent production runs, therefore, only used one inking-in roller for the blue ink as well as one for the red, but still met the BEP’s requirement to control the bleeding of the ink colors in the printed image. Despite the BEP’s efforts to minimize the bleeding of the inks into the different areas of the stamp design, many examples of the 29¢ White House coil stamp show slight misregistration of the inks or some dark purple areas in the upper-right area of the red stripes in the flag from the blending of the two ink colors.

Although the 29¢ White House coil stamp apparently commemorates the 200-year anniversary of the White House with its three-line inscription “The White House/1792/1992” stacked in the upper-right corner, this stamp was intended as a definitive issue to be used over a long duration as the primary stamp paying the 29¢ first-class letter rate. Accordingly, the design had many press runs over a three-year production period that required 17 different intaglio printing sleeves. The numerous press runs and printing sleeve changes during the production of this issue likely contributed to the slight differences in the normal colors and increased the chances of color varieties and color errors.

Discovery of the “Indigo” and “Navy Blue” Color Varieties

When looking at a large sampling of the 29¢ White House coil stamps, it’s easy to see slight variances in the appearance of the blue ink in the design. These variances are typically the result of heavy or light inking. However, in the May 24, 1993, issue of *Linn’s Stamp News*, a front-page article announced the finding of two distinct color varieties on mint rolls of the 29¢ Flag over White House stamps. The article described both varieties as “indigo-looking,” as reported by Ron Kronheim of Rita Kay Quality Stamps from New York.

Kronheim had sent two strips of 29¢ White House coil stamps from two separate finds. Each strip of stamps showed a plate number 6 below one of the stamp images. (The small plate number identifies the stamps as having been printed using the BEP’s intaglio printing sleeve 190302-6.) Although the article did not clearly differentiate the color differences between Kronheim’s two strips, the article noted the distinction and referred to them as “Indigo” and “Navy Blue.”

The May 24, 1993, *Linn’s* article featured a color image of two 29¢ White House stamps with the caption, “Left, the recently discovered indigo-and-red variety of the 29¢ Flag Over the White House coil stamp, from a coil of 100 stamps. At right is a normal blue-and-red stamp.” The “indigo-and-red” stamp in the image, however, appears dark blue and red. This poor representation of the true appearance of the color variety may have been caused by the limited capabilities of accurately reproducing color images in the newspaper, or the “Navy Blue” color variety was used for creating the image instead of the “Indigo” example. Regardless of the reason, this original color image may have initially contributed to the inability of collectors and dealers to identify these color varieties correctly. A second image appeared on page 11 with the conclusion of the article. This image showed a plate strip of six stamps with the BEP’s destruction slit horizontally running through the four center stamps of the strip. In the image, the small plate number 6 is visible at the base of the third stamp from the right (Figure 3).



Figure 3. Reproduction of the black-and-white image that appeared in the May 24, 1993, issue of *Linn’s Stamp News* showing Ron Kronheim’s strip of stamps with the horizontal destruction slit. A plate number 6 appears at the base of the third stamp from the right.

Early Attempts at Clarification

In the November, 1993 edition of *The Plate Number (TPN)*, Wayne Meyers reported a more detailed description of the “Indigo.” In a letter to the editor, Meyers states, “Information from Kronheim, who found these varieties, is that there were three slits made by the pressmen on the roll of 100, each measuring 73 millimeters in length. Three slit strips exist: one unnumbered strip of seven and two plate-number strips of eight. The remainder of the coil roll, 77 stamps, is unaffected by the destruction process. On the two plate number coils (PNCs), the slits affect the first five stamps in the strip of eight from the left to right, but the numbered stamp is unaffected.” It is necessary to note that Meyer’s description of the length of the two plate number strips does not match the length of the plate number strip of six stamps that was originally shown in the *Linn’s Stamp News* illustration in the May 24, 1993, about Kronheim’s discovery.

Meyers, a collector specializing in PNCs in the 1990s, conducted contemporary, side-by-side comparisons of the individual color varieties as they were reported. Because he had access to stamps from the original “Indigo” and “Navy Blue” finds from Kronheim, Meyers was able to provide accurate assessments and identification of subsequent finds.

Meyers raised early concerns about the casual use of the “Indigo” name to describe any of the 29¢ White House color varieties other than the distinctive color found on the single roll of 100 stamps originally reported by Kronheim. Despite Meyers’ efforts, dealer and collectors gravitated to the “Indigo” name in an attempt to describe the stamps from the “Indigo” and “Navy Blue” finds.

The Philatelic Foundation also reinforced the confusion by failing to draw a clear distinction between the two color varieties. This is evident in two Philatelic Foundation (PF) expertization certificates issued to Rita Kay Quality Stamps (Kronheim) for pairs of the different colors in February, 1994 (Figure 4).

PF Expert Committee certificate (No. 0273942) issued for a pair of Kronheim’s “Indigo” stamps identifies the stamps as “UNUSED OG INDIGO, INSTEAD OF BLUE, PAIR” and states the following opinion: “IT IS GENUINE.” For a pair of Kronheim’s “Navy Blue” stamps, the PF issued certificate (No. 0273943) that identifies the stamps as “UNUSED OG NAVY BLUE, INSTEAD OF BLUE, PAIR” and provides an opinion that “IT IS A GENUINE SCOTT 2609 VARIETY, INDIGO SHADE.”

Discovery of the “Chicago Blue” Color Variety

In mid-1994, a third color variety of the blue ink in the 29¢ White House coil stamp was found by Joe Sedivy. In the August, 1994 issue of *Coil Line*, the monthly journal of the Plate Number Coil Collectors Club (PNC3), Meyers reported the find and described Sedivy’s stamps as appearing “violet or purple, possibly due to a contamination between the blue and red inks of the White House stamp during printing.”

Sedivy originally found the color variety on a commercially used cover. He contacted the business and was able to acquire 70 stamps that remained on the roll, which included two plate-numbered stamps.

Because Sedivy’s find was a new, distinctive color, it was given a unique name. Sedivy called this color variety “Chicago Blue,” which strongly tied it to the location where it was originally found, but the name did little to help



Figure 4. Philatelic Foundation certificates issued for Ron Kronheim's "Indigo" stamps (No. 0273942) and "Navy Blue" stamps (No. 0273943) in February, 1994.

collectors understand what the color looked like and how it differed from the existing "Indigo" and "Navy Blue" varieties.

Although the new find had a distinctive color from the previous two color varieties, casual use of the "Indigo" term to describe any of the three different dark-ink color varieties of the 29¢ White House coil stamp continued by collectors, dealers and even expertizers.

The "Light Blue" Color Variety

The "Light Blue" variety has not been discussed in the philatelic literature. Collectors have also referred to this color variety as the "Milky Blue" variety. This variety first appeared in an auction catalog for a Contemporary Coils auction closing on October 1, 2008. The auction catalog describes lot 626 as "2609 No # pair 'Milky Blue.' Unusually new discovery. MB [minimum bid] \$5." The auction catalog also showed the pair in the catalog's color section.

Technique for Proper Identification

As noted in this article, the dark-ink color varieties of the "Indigo," Navy," and "Chicago Blue" historically have been a challenge for most collectors and dealers to identify properly. Several factors contributed to the difficulty, which included the casual use of the "Indigo" term, each person's subjective interpretation of the specific ink colors, and general poor understanding of the ink colors and how they related to the different names assigned to the varieties.



Figure 5. Highlighted area showing the distinctive dark and light area between and below the “9” and “U” of “29USA” in the printed image of a genuine “Indigo” 29¢ White House stamp. This same area is consistently dark on the “Navy Blue” and “Chicago Blue” color varieties.

Unique qualities of the printed image of the true “Indigo” stamp, however, make it possible to differentiate the distinctive “Indigo” color variety of the 29¢ White House stamp from the “Navy” and “Chicago Blue” color varieties. Figure 5 highlights the distinctive area in the printed image of a genuine “Indigo” 29¢ White House stamp that distinguishes it from the “Navy Blue” and “Chicago Blue” varieties. On true “Indigo” stamps, the area between and below the “9” and the “U” of “29USA” is almost solid, but there is a unique contrast of lighter shading directly below. All genuine “Indigo” varieties of the 29¢ White House stamp show this characteristic. This same area on “Navy Blue” and “Chicago Blue” stamps is consistently dark. The cause of this differentiating characteristic on the “Indigo” color variety is not known. A similar dark and light printed area infrequently appears on some 29¢ White House stamps printed with the normal blue ink, but it does not appear on the “Navy Blue” and “Chicago Blue” stamps.

Figure 6 shows the lower portion of pairs of the 29¢ White House coil stamp. From top to bottom, the image shows pairs of normal red and blue stamps, with the “Indigo,” Navy,” “Chicago Blue” and “Light Blue” varieties in order below. The image is a composite showing color images of the stamps on the left and grayscale images of the stamps on the right. The figure is intended to assist in the identification of the varieties when comparing actual stamps or black and white images of the stamps (such as in auction catalogs). The distinctive shading of the “Indigo” variety is apparent when compared to the same area on the other stamps, especially in the black and white image.

Technical Analysis of the Color Varieties

Professor Gene S. Hall, Ph.D., Analytical Chemist of the Department of Chemistry and Chemical Biology at Rutgers, The State University of New Jersey, performed tests on examples of the 29¢ White House stamps showing the distinct ink colors and provided the following analysis of the results:

Energy dispersive X-ray fluorescence (EDXRF) and micro Raman spectroscopy were used to determine the elemental and chemical composition of the 29¢ White House postage stamps shown in Figure 1. The objectives of the study were to determine if there were any chemical differences in the inks and papers of the stamps that showed different colors.

EDXRF was used first to determine the elemental fingerprint of the five different colors of the stamps that were designated as indigo,



Figure 6. Composite image of color (on left) and grayscale (at right) comparison of the printed image in the lower portion of pairs of the 29¢ White House stamp color varieties; top to bottom: Normal, "Indigo," "Navy Blue," "Chicago Blue," and "Light Blue."

light blue, normal blue, Chicago blue, and navy blue. Each stamp was analyzed in four locations that include paper blank, blue ink, and red ink. The analyses were performed non-destructively using the intact stamp. The instrument used was an EDAX Eagle II micro

EDXRF spectrometer that was equipped with a rhodium (Rh) X-ray tube coupled to a polycapillary lens to produce a 40-micron X-ray beam. All locations on the stamps were analyzed for a total of 300 seconds.

EDXRF revealed that the paper is the same for all the different hues of the stamp as shown in Figure 7. The main element in the paper was identified as calcium (Ca) which is due to calcium carbonate (CaCO_3) used as paper filler. Zinc (Zn) was also found in the paper in low concentrations and believed due to ZnO (zinc oxide) as a whitening agent. The navy blue stamp contains more titanium (Ti) as TiO_2 (white extender pigment titanium dioxide) than the other hues.

Figure 8 shows the micro EDXRF spectral overlap of the blue ink from the stamps of different hues. The additional element observed was copper (Cu) that was due to the pigment phthalocyanine blue (Pigment 9-x).

These results of the analyses for elements present in the paper of the stamps show that the papers used are essentially identical, with some variation in the amounts of fillers and whiteners containing calcium, zinc and titanium.

The EDXRF analyses of the blue inks used show the presence of copper, which are identified by Raman analyses as the pigment phthalocyanine blue or Cu-phthalocyanine. Dr. Hall's analysis continues:

Micro Raman spectroscopy was used to determine the chemical compounds to which the elements were identified from the EDXRF analysis. In this analysis, a Renishaw System 1000 micro Raman spectrometer was used to analyze the samples. Excitation of the different features (paper and ink) of the stamps was performed non-destructively using a 785-nm laser with a spot size of 2 microns. To prevent burning the stamps, the beam intensity at the stamp surface was 25 mWatts. Spectra range for the analysis was 100 to 2,200 cm^{-1} (wavenumbers). Three different locations per feature were analyzed.

Micro Raman spectroscopy revealed that the blue inks on the stamps are Cu-phthalocyanines (C.I. Pigment Blues 15:x) of different particle size and polymorphs. These different polymorphs are responsible for the different hues of the stamps in combination with the concentration of the pigment in the vehicle. It appears that the most expensive polymorph of this pigment (C.I. Pigment Blue 15:3 β -form) was used on the indigo stamp.

Figure 9 shows the micro Raman spectral overlay of the different blue inks found on the different hues of the stamps. The Chicago blue stamp used a more expensive Cu-phthalocyanine blue ink than the other stamps. The differences in hues of the stamps are due to particle size effects of the pigment in combination with the white pigment paper filler. Concentration effects also contribute to differences in the hue. All these factors contribute to differences in the hue of the blue ink.

Conclusion and Next Steps

Despite the appearance of some of the color varieties of the 29¢ White House coil stamps, none are the result of a cross contamination of the red

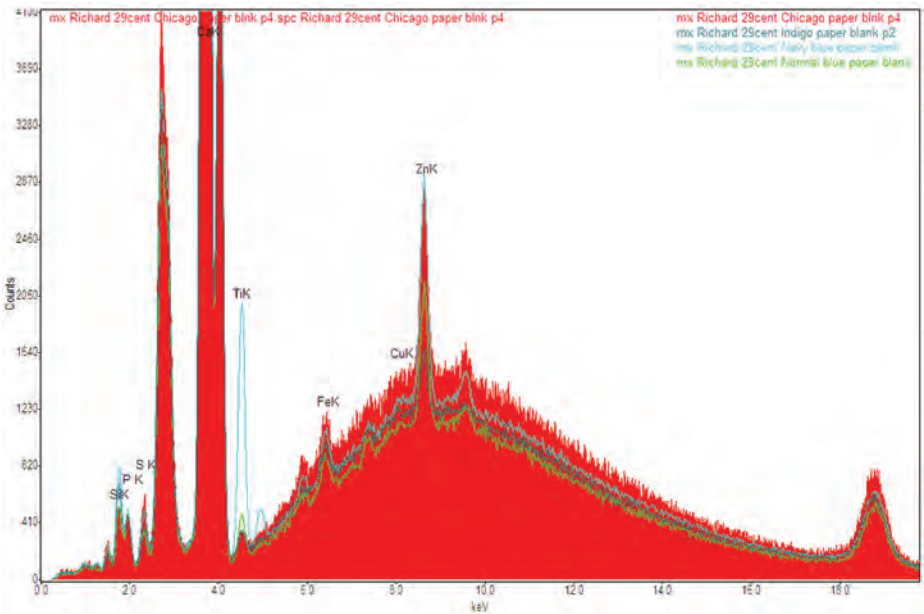


Figure 7. Overlap of micro EDXRF spectra of blank paper from the different stamp hues.

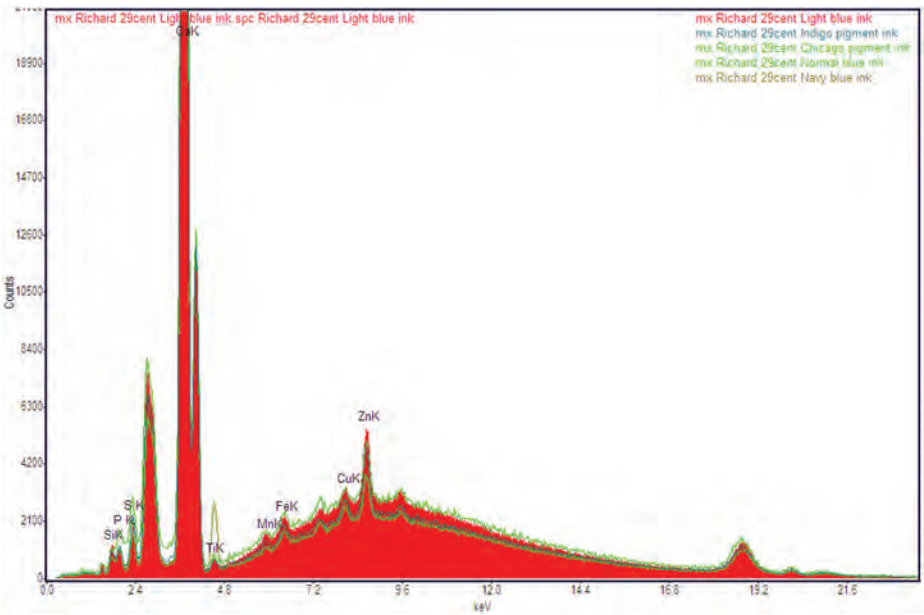


Figure 8. Micro EDXRF spectral comparison of the blue ink from stamps of different hues. Note peak for copper (CuK peak) not present in the spectrum in Figure 7.

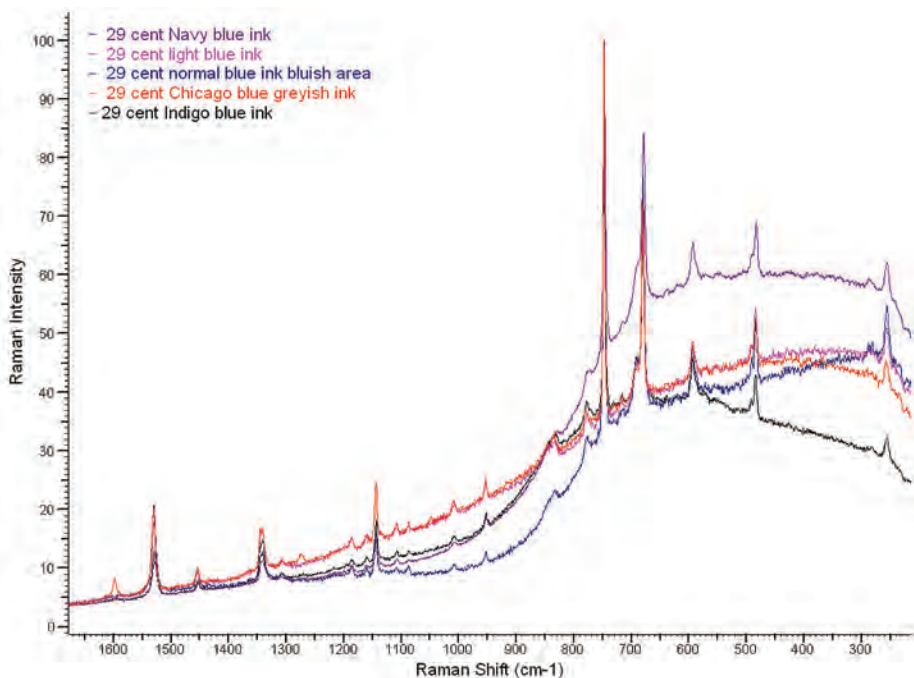


Figure 9. Raman spectral overlays of five different hues of 29¢ Flag Over White House stamps.

and blue inks used to print the stamps. Also, chemical analysis of the ink varieties indicates that there was not an accidental mixing of black ink with the blue ink to cause the darker shades. Instead, the “Indigo,” “Navy Blue” and “Light Blue” varieties were the result of using blue inks with different manufacturing characteristics that resulted in varying observable colors. The “Chicago Blue” 29¢ White House coil stamps, however, are the result of using a blue ink with a different pigment (Cu-phthalocyanine blue ink), as shown in the micro Raman spectral analysis.

Only one color variety for the 29¢ White House coil stamp is currently listed in the *Scott Specialized Catalogue of United States Stamps and Covers*. The catalog identifies Scott #2609c as “Indigo blue and red.” This listing first appeared in the 2011 edition of the Scott catalog. The 2012 edition prices the variety at \$22.50 for a single mint stamp and \$45.00 for a mint pair.

To date, no additional finds beyond the original roll of 100 stamps of the “Indigo” color error have been confirmed. Although Wayne Meyers’ 1993 report about the length of the plate strips from Kronheim’s find conflicted with the image from the *Linn’s* article earlier in that same year, Meyers’ statement is partially supported by an image in a recent Philatelic Foundation (PF) certificate, No. 439945, which shows a plate strip of eight stamps with a plate number 6 and the BEP destruction slit (Figure 10). Although the image associated with the PF certificate clearly shows the characteristic impression differences between the “29” and the “USA” at the base of the stamps, the certificate does not identify the stamps as being the “Indigo” variety of the 29¢ White House coil stamp. The certificate only states, “PLATE NO. 6 STRIP OF EIGHT, FIRST FOUR STAMPS HORIZONTAL PAPER CUT



Figure 10. Plate number strip of eight “Indigo” 29¢ White House stamps with the BEP destruction slit affecting four stamps in the strip and a plate 6 on the third stamp from the right. (Image from The Philatelic Foundation)



Figure 11. Plate number strip of seven “Navy Blue” 29¢ White House stamps showing plate 7 on the center stamp. (Image from Craig Selig)

ACROSS CENTER OF STAMPS. / AND WE ARE OF THE OPINION THAT IT IS A NEVER HINGED SCOTT 2609, WITH HORIZONTAL PAPER CUT OF INDETERMINATE ORIGIN AFFECTING POSITIONS 1-5, BUT IT IS NOT A VARIETY.”

Reports from the 1993 to 1994 timeframe document the “Navy Blue” variety as having a distribution that included the Northeast, Michigan, West Virginia, and California. However, few details about any of the finds, such as quantities or specific locations, were reported. “Navy Blue” examples of the 29¢ White House stamp have been found on coils from plates 6, 7 and 8 (see Figure 11).

Only a few reports in the philatelic literature mention finds of the “Chicago Blue” variety. The “Chicago Blue” variety is confirmed as coming from coils printed from plate 7.

The relative scarcity of the “Light Blue” variety is currently unknown due to the lack of reports concerning this variety. Collector Jim Fowler reports that the “Light Blue” variety of the 29¢ White House coil stamp is known coming from rolls showing plate number 8.

All of the color varieties mentioned in this article come from rolls of 100 stamps. Although the 29¢ White House stamp was also manufactured by the BEP in coils of 500 and 3,000 stamps, all of the plate numbers found on the color varieties (6, 7 and 8) were exclusively used on printing sleeves used to produce 100-stamp coils. The printing “plate” is a cylindrical sleeve with 960 stamp impressions on the sleeve, 20 rows high by 48 stamp subjects around. The small plate number appears beneath the stamp image in one column of stamps on the impression sleeve. The plate number, therefore, repeats in a coil of stamps at 48-stamp intervals. A 100-stamp coil can contain two or three stamps showing the small plate number, depending on the appearance of the first numbered stamp from the end of the 100-stamp roll.

Based on the infrequent appearance of numbered plate strips of the color varieties of the 29¢ White House in the philatelic marketplace, it is likely that very few numbered plate strips of these varieties were originally found or recognized by collectors or dealers.

The author would like readers to report their holdings of these varieties (with images) so that a census can be established to understand relative scarcity of the four different color varieties — “Indigo,” “Navy Blue,” “Chicago Blue” and “Light Blue.” Please send your reports to Richard Nazar at Richard.Nazar@USAstamps.com.

The author also invites anyone having additional information about these varieties or the details of the original finds to contact him to help complete the story about the 29¢ White House stamp — the last line-engraved, first-class coil stamp produced by the BEP.

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The USSS Website Is Now On Line At

www.usstamps.org

Visit the Liberty Series Committee website at:

<http://members.aol.com/raustin13/studygrp/liberty.htm>