

# Stamps That Glow

## Luminescent Tagging on United States Stamps

### Part III

### Hidden Art

Presentation By:  
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# In Review

This presentation is a follow-on to:

## **Stamps That Glow**

**Luminescent Tagging on United States Stamps**

### **Part I**

**The Experimental Years**

### **Part II**

**Evolution of the Technology**

# In Review

## Part I “The Experimental Years” addressed:

- Postmaster General Summerfield's Post Office automation initiative
- The early experiments using long-wave UV to locate stamps on the envelope
- The first experiment with luminescent tagging in Dayton, Ohio
- The Phase II experiment and the subsequent implementation of tagging nation-wide

## Part II, “Evolution of the Technology” addressed:

- The evolution of tagging technology
- The various ways taggant has been applied to stamp

This presentation will discuss tagging as an art form.

# Luminescence - Fluorescence - Phosphorescence

**Luminescence** – general term for the process in which a material absorbs energy from an external source and re-emits that energy in the form of visible light.

**Fluorescence** – subcategory of Luminescence

- Emission of visible light by a substance during exposure to incident external radiation of a shorter wavelength, such as ultraviolet light
- First observed in the mineral Fluorite by George Stokes in 1852.
- Emission stops when the ultraviolet light source is removed

**Phosphorescence** – subcategory of Luminescence

- Emission of visible light by a substance that during and after the exposure to incident external radiation of a shorter wavelength, such as ultraviolet light
- Emission continues when the ultraviolet light source is removed

# WARNING

## **Never look directly into the light emitted by a UV lamp!**

Direct exposure to UV light, particularly short wave UV light (UV-B), will do permanent damage to your eyes.

When working with UV light source, you should always wear glasses containing a UV blocker.

- The light emitted by the stamps when illuminated with UV light is eye-safe.
- It is the UV light source used to illuminate the stamps that is not eye-safe.
- Do not look into the UV light source, or allow it to be reflected into your eyes by stamp mounts or other mirror surfaces.
- With eye protection, working with tagged stamps is perfectly safe.

If you work extensively with the UV light for long periods of time, you should consider wearing gloves and long sleeve shirts to limit skin exposure and prevent sunburn and related ill effects.

# Tagging Variants Were Driven By Printing Press Technology

## Overall Tagging

Initially applied as an overprint

Application Types

**Type I Tag** – applied with rubber mats

**Type II Tag** – applied with a rubber roller

**Type III Tag** – applied with a steel transfer plate

Later applied as an additional color on a multi-color press (Giori, Huck, Andreotti or Combination)



## Block Tagging

Printed as part of the vignette

First done on a multi-color Huck press – later on the Andreotti and Combination presses



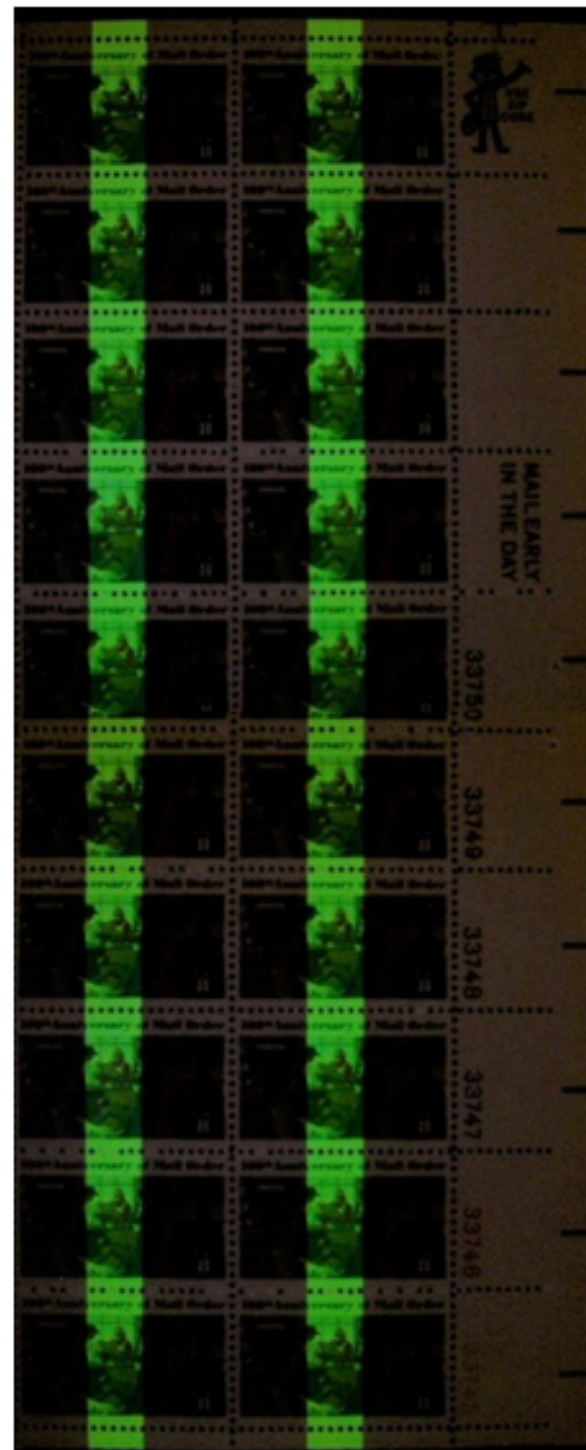
1972

# 100<sup>th</sup> Anniversary of Mail Order (Scott 1468)

- Andreotti press allowed experiments in less than overall tagging
- Taggant applied in a 10mm strip as part of the vignette
- Strip runs across perforations and selvage



Scott 1468



Scott 1468  
Under short-wave UV illumination

# Experiments in Small Block Tagging

Small Block Tagging  
Introduced on the  
1970 Christmas  
Stamps

Printed by  
photogravure as part  
of the vignette on an  
Andreotti press



Scott 1507



Scott 1508



Scott 1698a

Used again

1974 Horse Racing

1975 Collective  
Bargaining

1976 Olympics



Scott 1428



Scott 1558

# Phosphor in the Ink

1968 Leif Erikson Issue

Lithographed & Engraved

Required 2 Press Runs



Scott 1359



Image of Scott 1359  
Under short-wave UV illumination

# Phosphor in the Ink

1988 Classic Automobiles

Lithographed & Engraved

Single Press Run



Scott 2380-84



Image of Scott 2380-84  
Under short-wave UV illumination

# Phosphor in the Ink

1990 Beach Umbrella

Photogravure



Scott 2443



Image of Scott 2443  
Under short-wave UV illumination

# Art or Anti-Counterfeiting?

**In the late 1990's the USPS began experimenting again**

- Inserting microprint in the design
- Scrambled Indicia
- Making the taggant part of the artwork
- The three experiments ran in parallel.

# Micro Printing

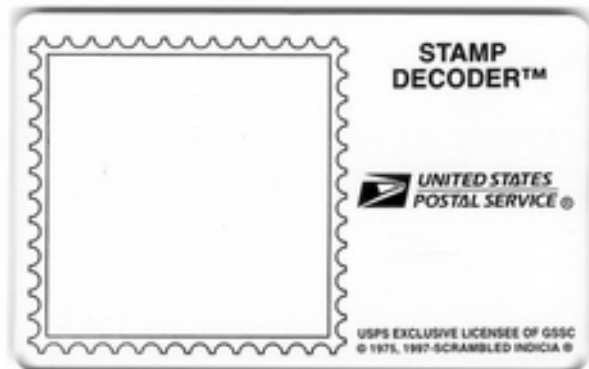
- First employed on the 1998 \$1 Red Fox (Scott 3036)
- Occurs on numerous issues since 1998
- Apparently the chosen technology to combat counterfeiting
- Illustrates the bridge between security concerns and hidden art
- A full discussion is best left to a separate program



1998 \$1 Red Fox (Scott 3036)

# Scrambled Indicia

- Patented security technology from Graphic Security Systems Corporation (GSSC)
- Prevents document duplication
- Introduced as a technology to combat counterfeiting



The Postal Service's STAMP DECODER is a decoder lens manufactured especially for reading hidden images and symbols on selected stamp issues. The decoder lens is a precision optical device manufactured with the same acrylics used for prescription eyeglass lenses. Each decoder is comprised of nearly a thousand tiny elongated lenses called lenticules.

- Incorporated experimentally in 42 stamps issued between 1998 and 2004
- Viewing requires a USPS Stamp Decoder sold at post offices
- A full discussion is best left to a separate program

# Taggant in the Design

Printing Method:  
Lithography

Printed by:  
Sterling Sommer for  
Ashton-Pottter (USA) Ltd.

Designed by:  
Richard Sheaff



1999 American Glass (Scott 3325-28)

# Taggant in the Design

Printing Method:  
Lithography

Printed by:  
Sterling Sommer for  
Ashton-Pottter (USA) Ltd.

Designed by:  
Richard Sheaff



1999 American Glass (Scott 3325-28)

# Taggant in the Design

Printing Method:  
Lithography

Printed by:  
Sterling Sommer for  
Ashton-Pottter (USA) Ltd.

Designed by:  
Gerald Gallo



1999 45¢ Universal Postal Union (Scott 3332)

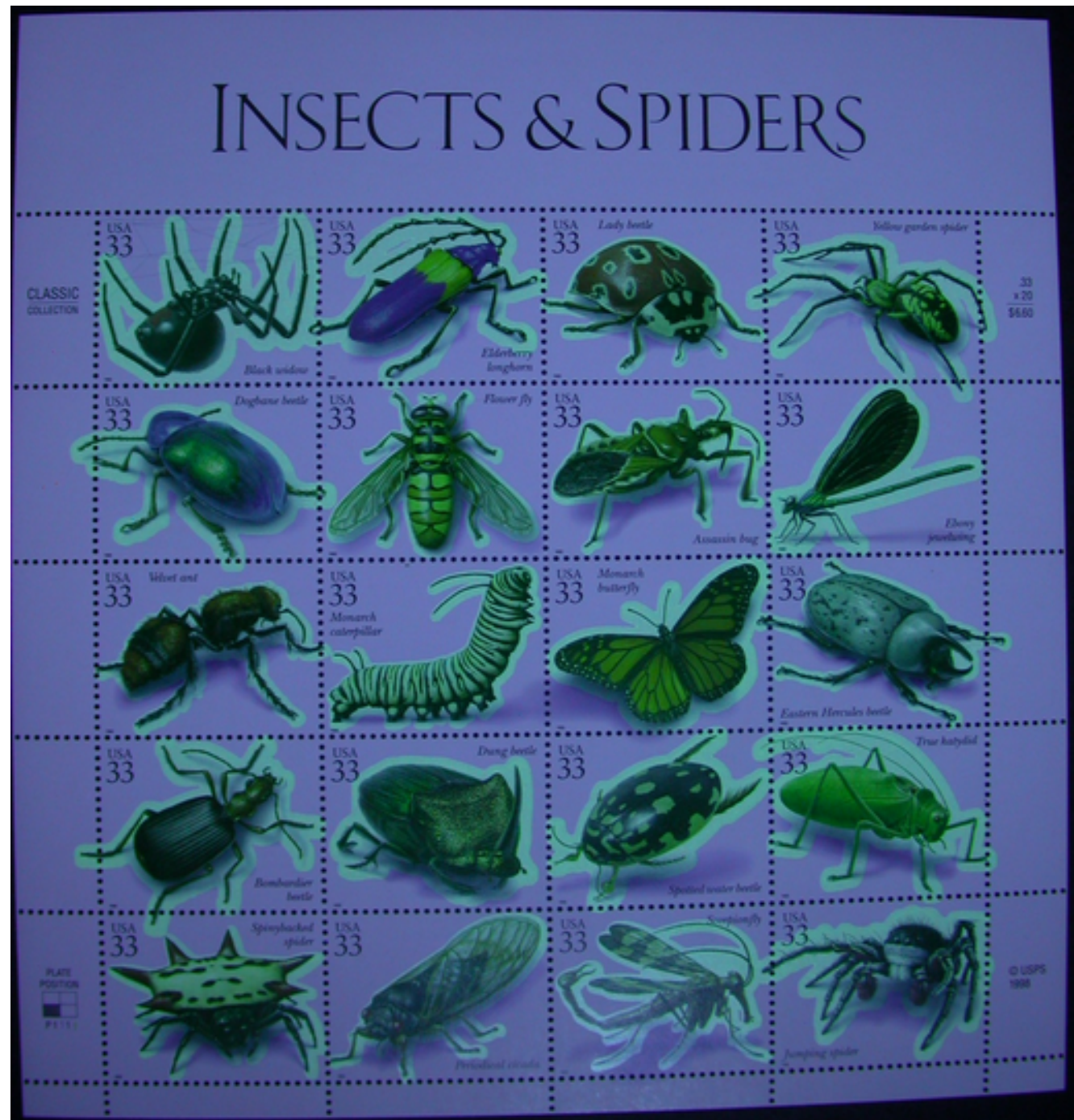


# Taggant in the Design

Printing Method:  
Lithography

Printed by:  
Ashton-Pottter (USA) Ltd.

Designed by:  
Carl Herrman



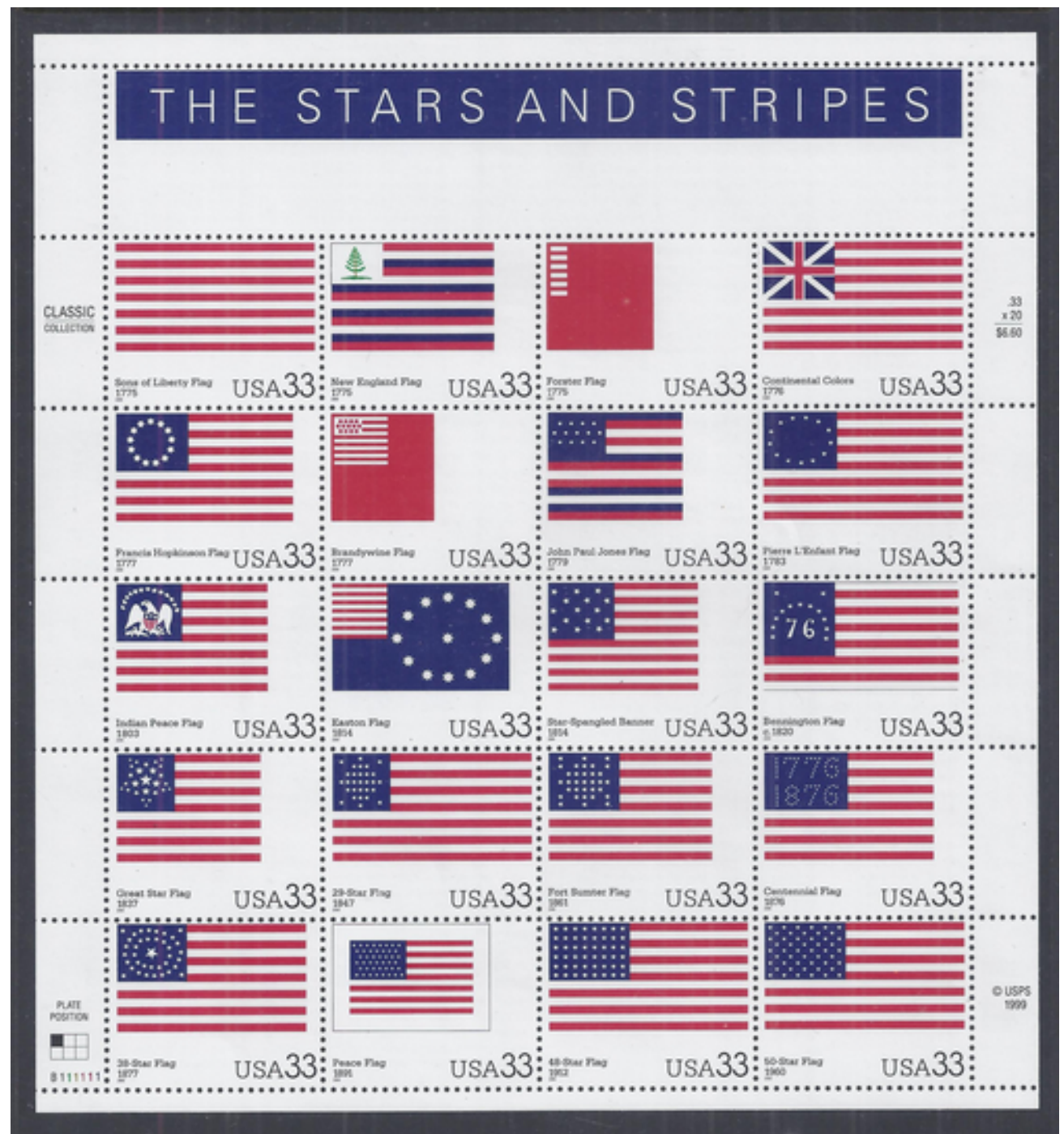
1999 Insects and Spiders (Scott 3351)

# Taggant in the Design

Printing Method:  
Lithography

Printed by:  
Banknote Corporation  
of America

Designed by:  
Richard Sheaff



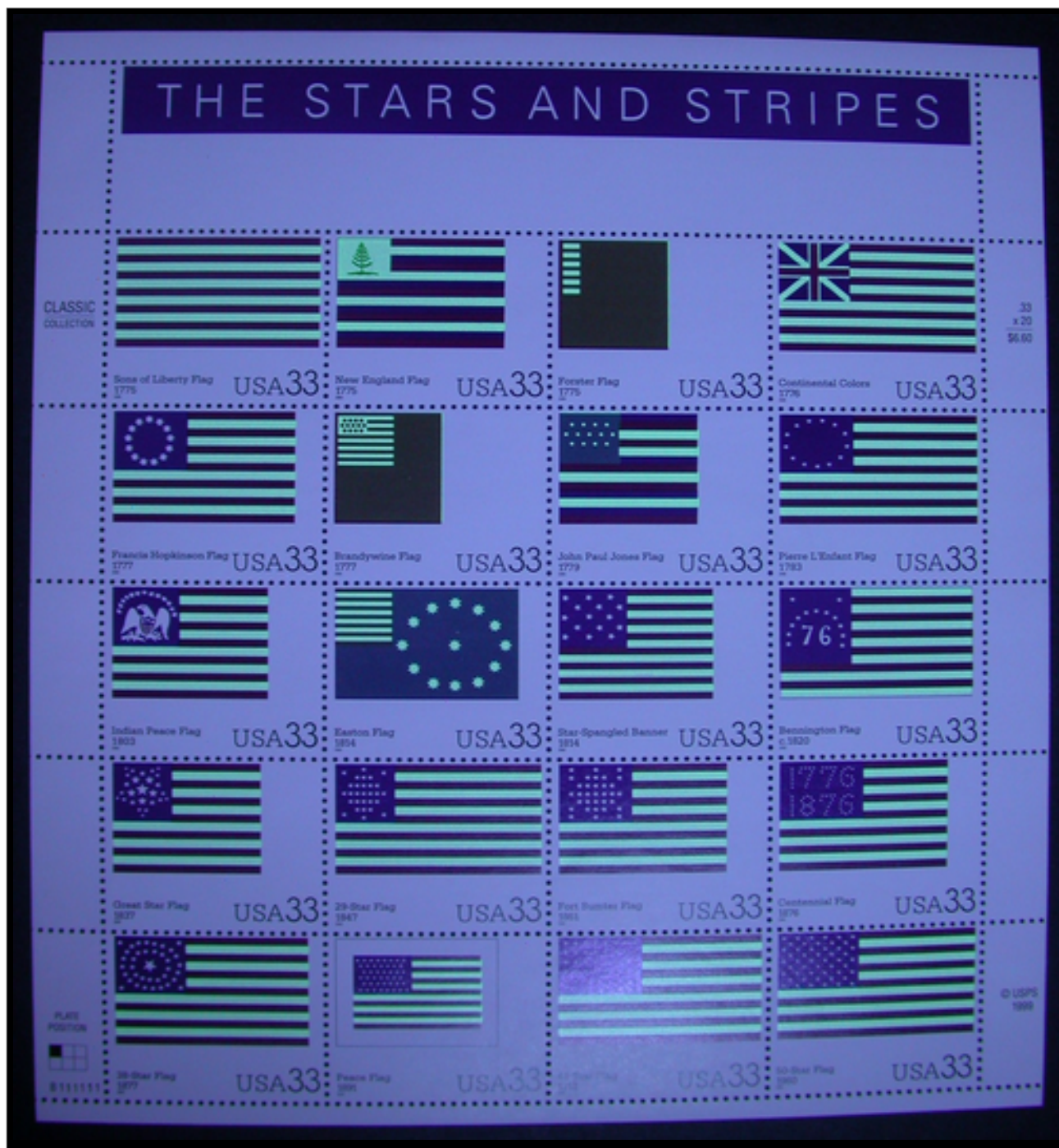
2000 Stars and Stripes (Scott 3403)

# Taggant in the Design

Printing Method:  
Lithography

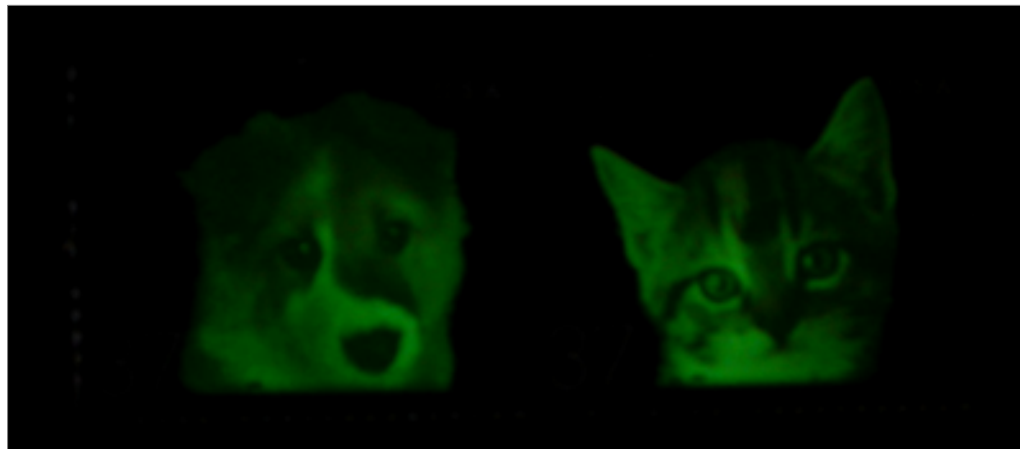
Printed by:  
Banknote Corporation  
of America

Designed by:  
Richard Sheaff



2000 Stars and Stripes (Scott 3403)

# Taggant in the Design



2002 37¢ Neuter or Spay (Scott 3670-71)

# Tagging Developments in Other Nations

Initially other nations copied the US tagging their stamps using short wave UV.

Some follow the US convention of blue-green and red-orange taggants

Some, like the UK, tag their stamps in blue

Some nations, like Canada, started using short wave UV activated taggant to tag in green, but over time adopted the use of a multi-spectral short/long wave UV taggant to tag their stamps in bright yellow



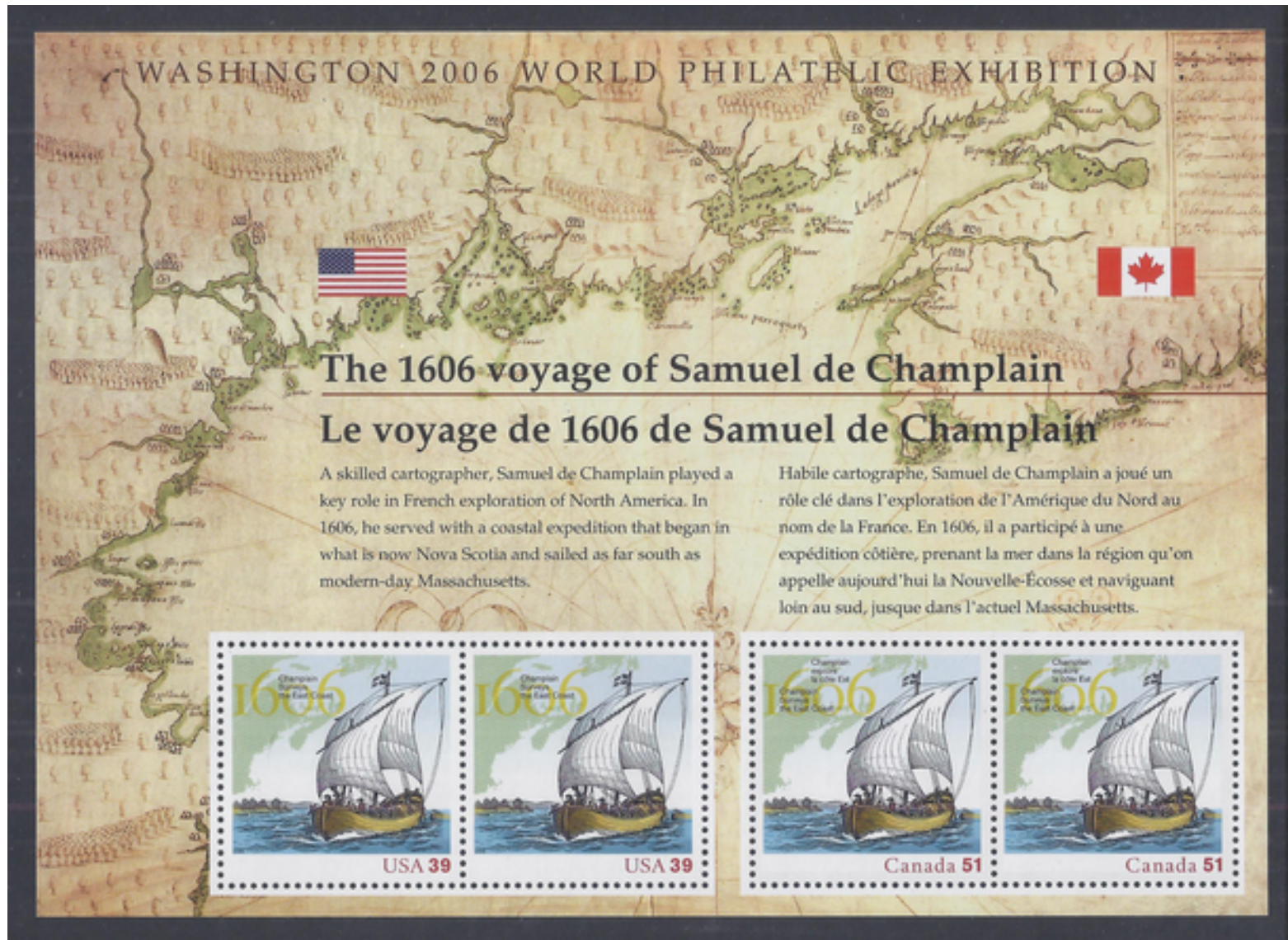
Winnipeg tag

General OP-4 tag  
(migrates)

General OP-2 tag

Evolution of Canadian Luminescent Tagging

# Champlain Joint Issue Souvenir Sheet



2006 Champlain Souvenir Sheet (Scott 4074)

# Champlain Joint Issue Souvenir Sheet



2006 Champlain Souvenir Sheet (Scott 4074)

US stamp tagged with Green block, Canadian stamp tagged with yellow frame

# Canadian Anti-Counterfeiting



2003 \$5 Moose (Scott 1693)

The sky is made up of hundreds of tiny moose hoofprints

Two lines of "microtype" hidden in the picture.

Engraved printing

# Canadian Anti-Counterfeiting



2003 \$5 Moose (Scott 1693)  
Under short-wave UV illumination

Hidden image visible  
under short wave UV

Aboriginal rock-carving

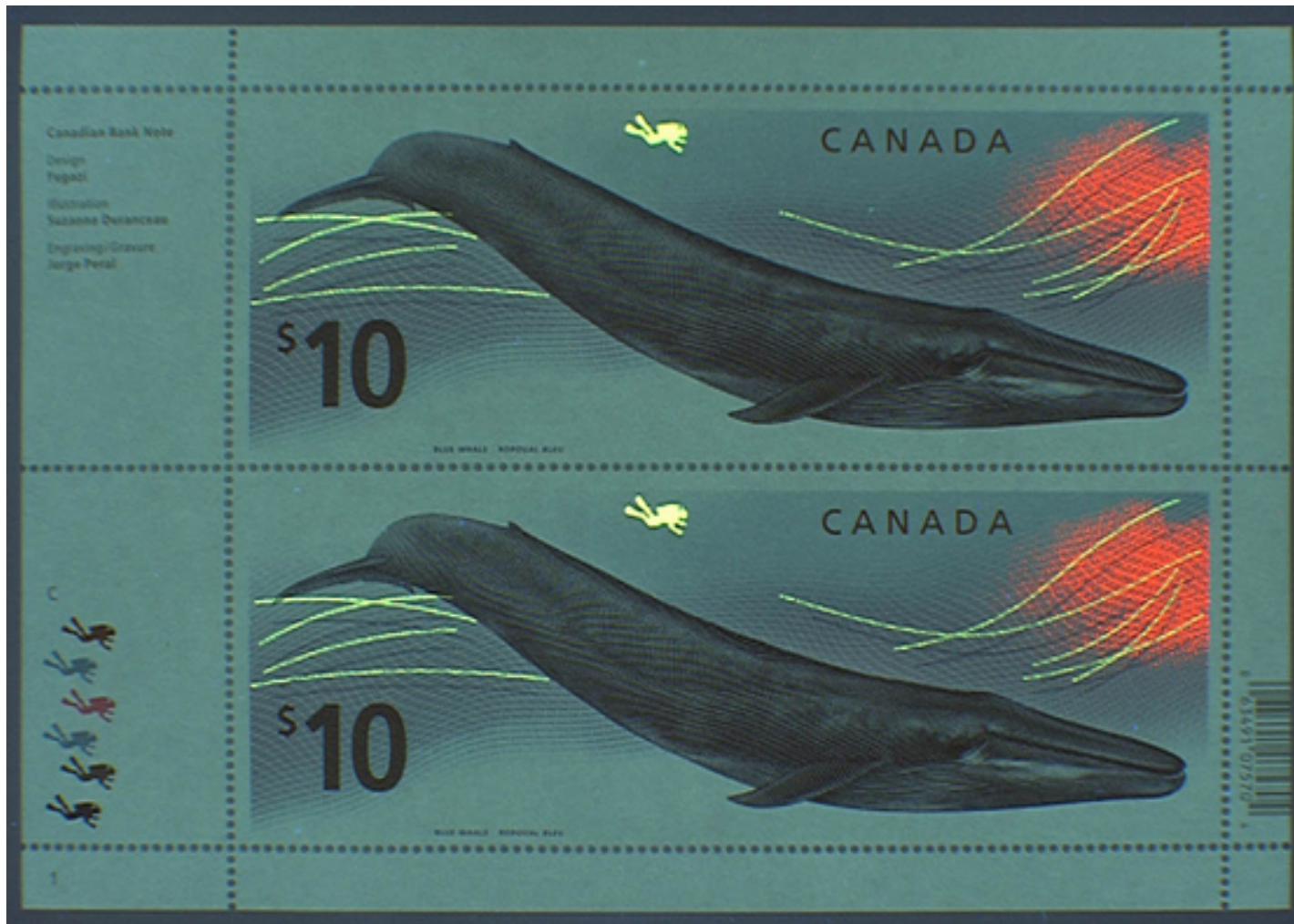
# Canadian Anti-Counterfeiting

- Thick security paper measures .047” compared to usual .036” used on other high value wildlife stamps.
- Multiple printing processes include lithography, intaglio and silk screen.
- Optically variable and fluorescent inks.
- Extensive use of micro-printing.



2010 \$10 Whale (Scott 3405)

# Canadian Anti-Counterfeiting



2010 \$10 Whale (Scott 3405)  
Seen under 365 nm Ultra Violet

# Example From China

2017 Magpie Painting

Under Ambient Light



Under UV Light



# Example From Indonesia



# Example From Austria



Under Ambient Light



Under UV Light



# Example From Mexico

US – Mexico  
Joint Issue



# Example From Mexico

US – Mexico  
Joint Issue

Petroglyphs  
visible under  
short wave  
UV



# Example From Hungry

## Outstanding Hungarian Mathematicians



Hidden Image in Red

Header: Outstanding  
Hungarian Mathematicians

57 Hungarian  
mathematicians named  
around the stamp  
perforation perimeter

2000 Souvenir Sheet

# Example From Hong Kong



# Example From Great Britain



# Example From Great Britain



Mesers  
MOONY, WORMTAIL  
PADFOOT & PRONGS

offer fair complements to  
Professor Snape

request that he  
Keep his abnormally  
Large nose out of  
other people's business



# Example From Great Britain



# Isle of Man RAF Issue





# Isle of Man RAF Issue

## High Flight

By John Gillespie Magee, Jr.

"Oh, I have slipped the surly bonds of earth,  
And danced the skies on laughter-silvered wings;  
Sunward I've climbed and joined the tumbling mirth of sun-split clouds -  
and done a hundred things You have not dreamed of -  
wheeled and soared and swung high in the sunlit silence.  
Hovering there I've chased the shouting wind along  
and flung my eager craft through footless halls of air.

"Up, up the long delirious burning blue  
I've topped the wind-swept heights with easy grace,  
where never lark, or even eagle, flew;  
and, while with silent, lifting mind I've trod  
the high untrespassed sanctity of space,  
put out my hand and touched the face of God."

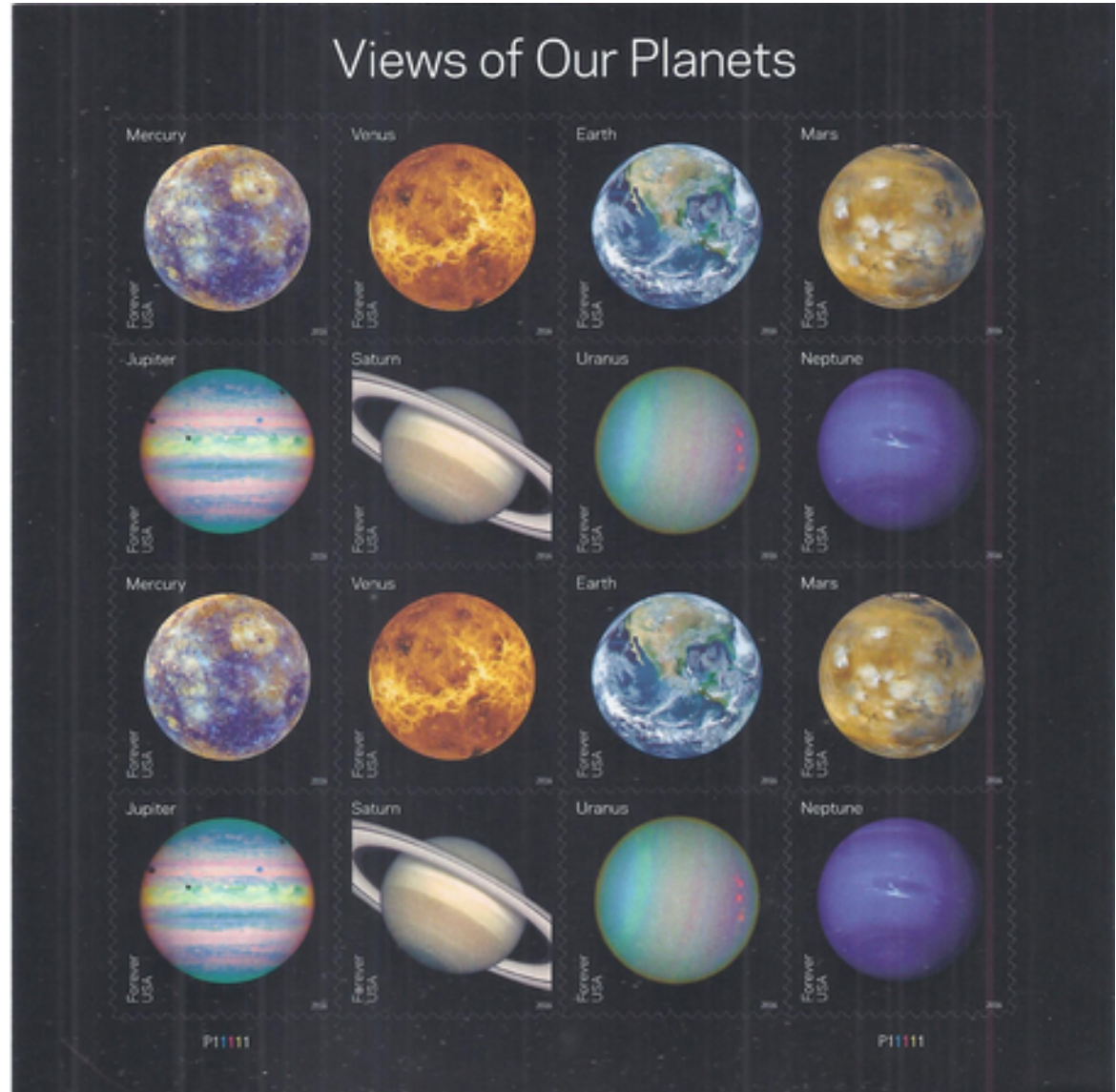
# Isle of Man 2017 Masonic Issue



# Recent US Taggant in the Design

2016 View of Our Planets (Scott 5076a)

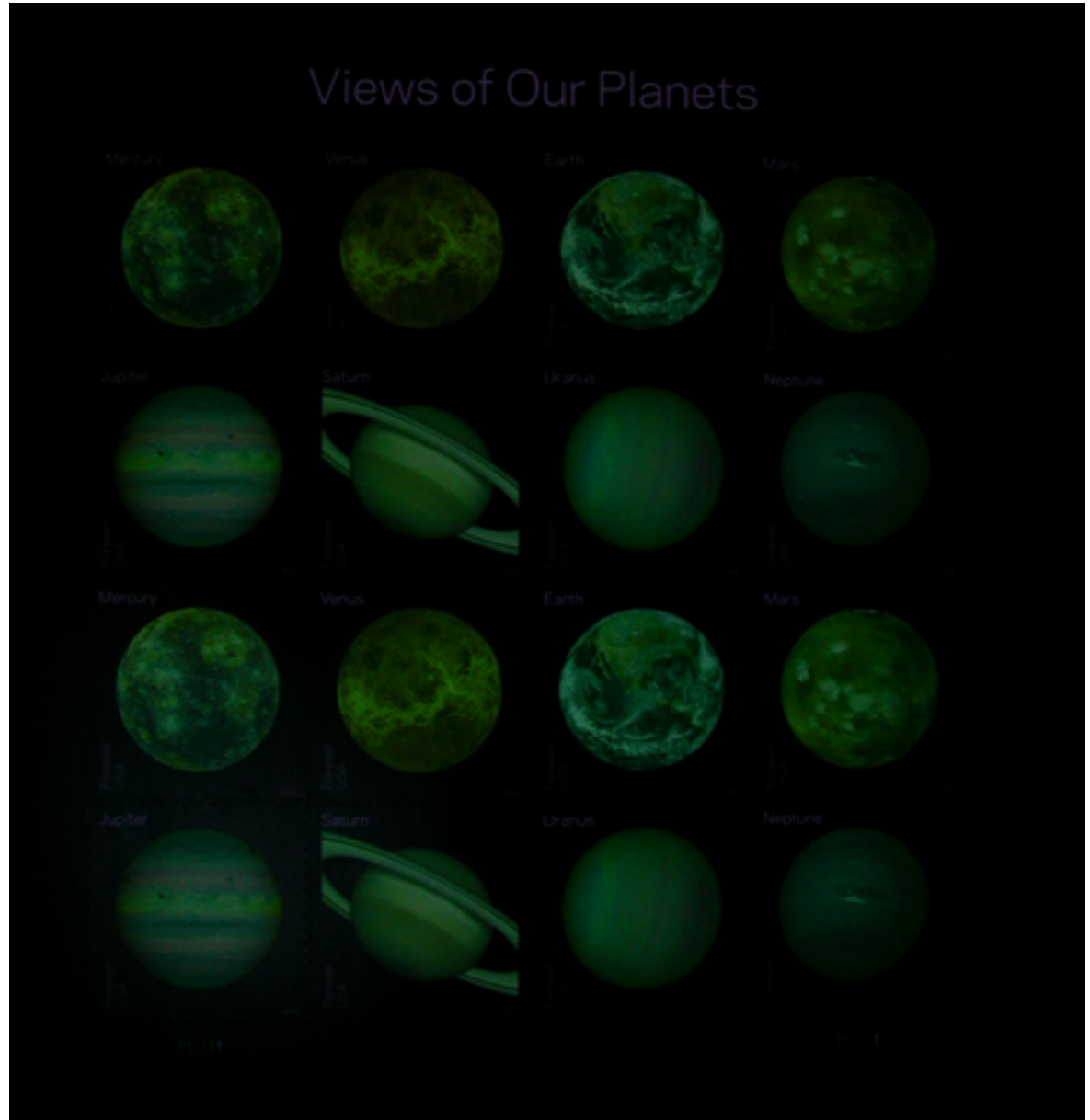
Tag Matches Each Planet's Shape



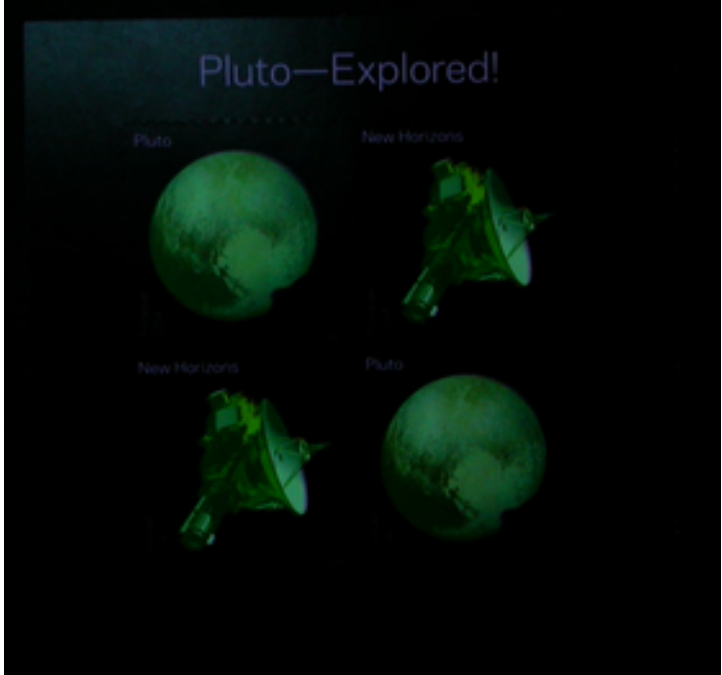
# Recent US Taggant in the Design

2016 View of Our Planets (Scott 5076a)

Tag Matches Each Planet's Shape



# Recent US Taggant in the Design



2016 Pluto Explored (Scott 5078a)

# Recent US Taggant in the Design



2016 Eastern Blue Tailed Butterfly (Scott 5136)

# Recent US Taggant in the Design

2016 Star Trek  
(Scott 5135a)

Stamps with red and  
blue background tagged  
differently than those  
with yellow and green  
background



# Recent US Taggant in the Design

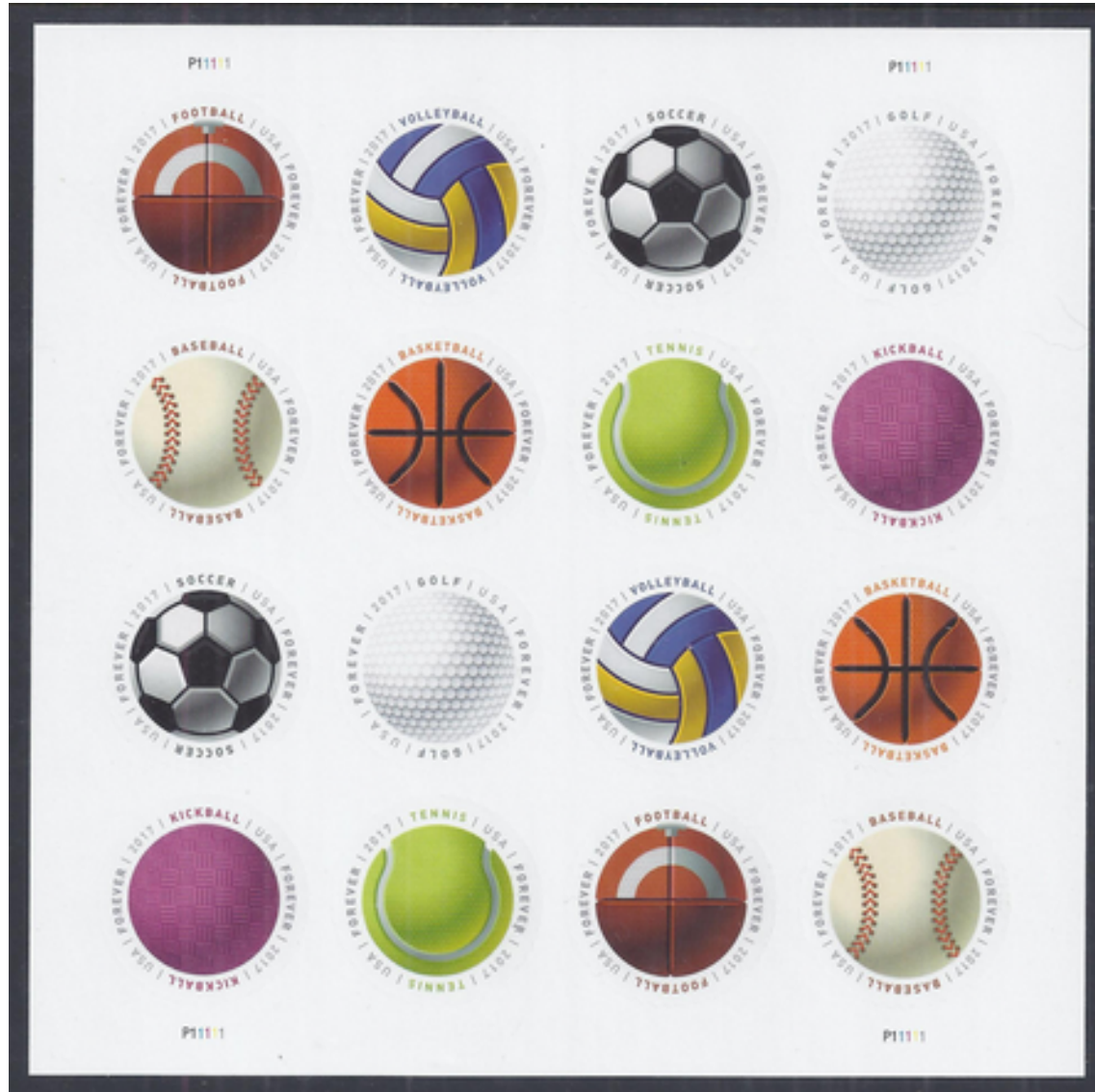
2016 Star Trek  
(Scott 5135a)

Stamps with red and  
blue background tagged  
to include the perforation  
margin

Only the vignette tagged  
on stamps with yellow  
and green background



# Recent US Taggant in the Design



2017 Sports Balls (Scott 5203-10)

# Recent US Taggant in the Design



2017 Sports Balls (Scott 5203-10)

# US Under Long Wave UV



2017 WA Duck Stamp – bird eyes and wing edges glow



2017 PSA Duck Stamp – all three birds glow

# US Under Long Wave UV



2017 WA Duck Stamp – bird eyes and wing edges glow



2017 PSA Duck Stamp – all three birds glow

# US Under Long Wave UV



2018 Both PSA Stamps – bird wings trailing edges glow

# US Under Long Wave UV



2018 Both PSA Stamps – bird wings trailing edges glow

# **There's a Hidden World of Philately**

Most all the major countries of the world are using some sort of luminescent tagging on their stamps.

If a stamp was issued after the year 2000, there is a good chance it just might contain a hidden image or message.

**Grab your lights and start exploring!**