PWC G8 Gals@Technology

May 2020
Digital Archiving
(update from March 2019 and Sept 2015)

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Current Topics

- Colonial Pipeline Ransomware Attack
- Ransomware
  - Take control of a network, encrypt data, and charge for the decryption key
  - DarkSide sells "Ransomware-as-a-Service"
  - Offers malware to "customers" for a share of the "profits"
  - Characterized as "Russian-speaking" group

"We are apolitical, we do not participate in geopolitics, do not need to tie us with a defined government and look for other our motives," DarkSide said on May 10. "Our goal is to make money, and not creating problems for society. We [will] introduce moderation and check each company that our partners want to encrypt to avoid social consequences in the future."

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Current Topics – iOS 14.5(.1)

- Update to iOS 14.5.1 ASAP if you are running 14.5
- FaceID now works with a mask (sort of) and uses AppleWatch pairing
- Siri has new voices, and you get to choose
- New privacy features to stop apps from tracking you
  - Settings > Privacy > Tracking
- Adds Picture-in-Picture
- And more ….

https://www.cnet.com/how-to/apple-ios-14-5-iphone-best-features-ipad/

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Current Topics – Apple AirTag

- Works with Apple's "Find My" app
- $29, Package of 4 for $99
- "Lost Mode" enables AirTag to communicate with other iPhones and relay location back to owner

"No location data or location history is physically stored inside AirTag," the company says. "Communication with the Find My network is end-to-end encrypted so that only the owner of a device has access to its location data, and no one, including Apple, knows the identity or location of any device that helped find it."

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A Story About Photos and Backup

- My sister Karen, husband Bill, and son David.
- 8 Day Photo Safari in Southern Africa
- 3 people, 6 Nikon camera bodies, 8 lenses, 1.2TB

Date	Location	Total Number of Files	Total File Size (GB)
12/28/2018	Phinda	3930	96.9
12/29/2018	Phinda	8978	228.5
12/30/2018	Phinda	6960	180.8
12/31/2018	Phinda	6514	189.5
1/1/2019	Phinda/Tintswalo	4109	131.7
1/2/2019	Tintswalo	6888	180.6
1/3/2019	Tintswalo	2013	54.5
1/4/2019	Tintswalo	3728	86.3
	TOTAL	43120	1148.8

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A Story About Photos and Backup

- Cameras have digital memory cards
- Nightly backups of "daily memory cards" to 2 different portable USB drives
- 1 USB drive was used, the other was new
- Towards the end of the trip, things got busy and daily backups were only made to the new USB drive
- At home, the USB drive was unreadable!!
- There are lost photos!! These are some of what would have been lost.

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A Story About Photos and Backup

- Scott's recovery tools didn't work
- Drive sent to Drive Recovery Group for lab recovery
- 3 of 4 heads were good. 4th head was failing. After 3 weeks of the 4th head somewhat working, it finally completely failed.
- 4th head was replaced using a new technique (first time used)
- All photos recovered

- **5 weeks and $1,795 later**
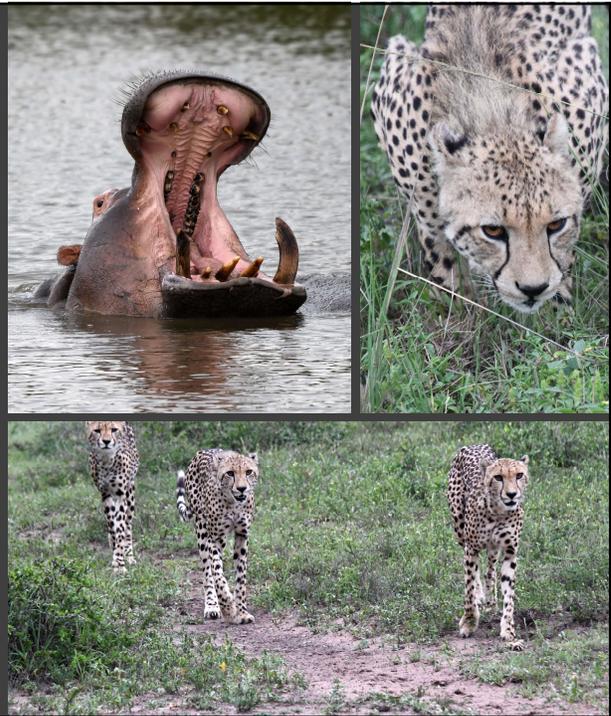
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Photo Basics

- Pixel (sometimes called Pel or Picture Element) is the physical point at which light is captured. The smallest addressable element
  - Intensity or brightness is variable
  - Component parts – red, green, blue or cyan
  - Sometimes cameras are rated at megapixels
  - For example, a 640x480 pixel image is 307,200 pixels
- Bits per Pixel or bpp
  - 1 bpp = 2 colors (B&W)
  - 2 bpp = 4 colors
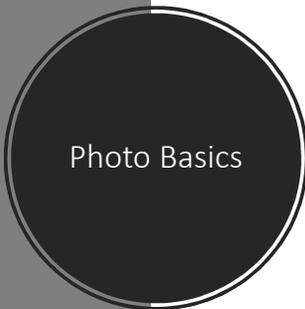 - 24 bpp = 16,777,216 colors (also know as "Truecolor")

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Photo Basics

- Not all colors can be sensed at the same physical site

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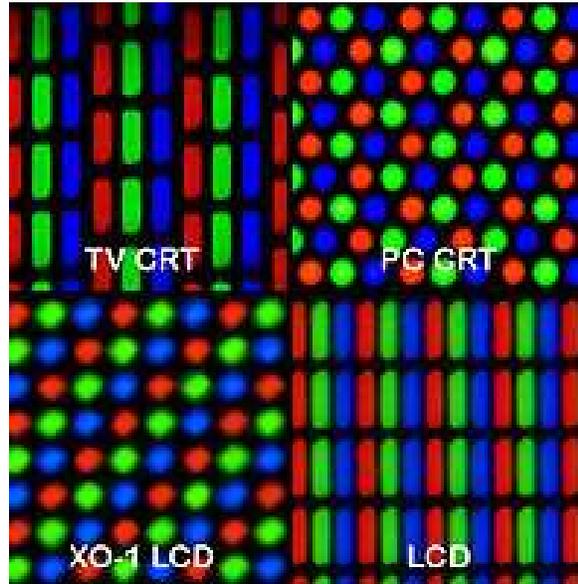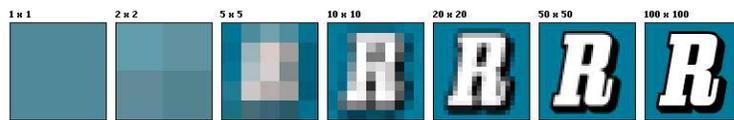
Photo Basics



- Resolution – the image can never be better than the original capture

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Photo Basics

- 500×480 : Digital8
- 720×480 : D-VHS, DVD, miniDV, Digital Betacam (NTSC)
- 720×480 : Widescreen DVD (anamorphic) (NTSC)
- 720×576 : D-VHS, DVD, miniDV, Digital8, Digital Betacam (PAL/SECAM)
- 720×576 : Widescreen DVD (anamorphic) (PAL/SECAM)
- 1280×720 : D-VHS, HD DVD, Blu-ray, HDV (miniDV)
- 1440×1080 : HDV (miniDV)
- 1920×1080 : HDV (miniDV), AVCHD, HD DVD, Blu-ray, HDCAM SR
- 1998×1080 : 2K Flat (1.85:1)
- 2048×1080 : 2K Digital Cinema
- 3840×2160 : 4K UHDTV, Ultra HD Blu-ray
- 4096×2160 : 4K Digital Cinema
- 7680×4320 : 8K UHDTV
- 15360×8640 : 16K Digital Cinema
- 61440×34560 : 64K Digital Cinema

- Kodak claims the equivalent resolution of 35mm film is 6K.

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Photo Compression (Raw – JPEG)

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Getting Started
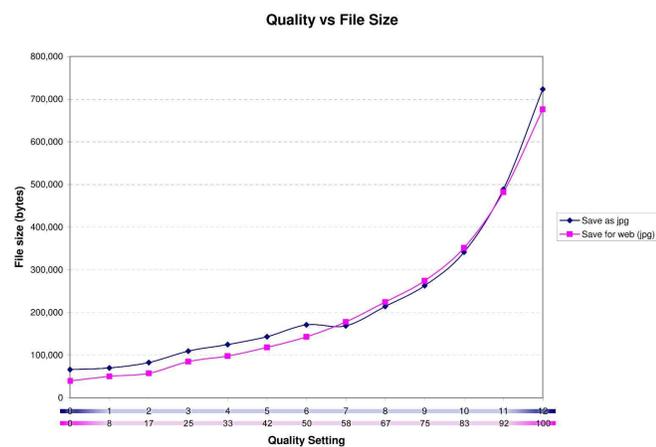
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Digitizing

- Do-it-yourself – takes lots of time
- Pay somebody – not particularly inexpensive

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Do It Yourself

- $100 - $150
- 5473x3648 pixel scan (20 Megapixels)
- Approx 5 seconds/image

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Pay Somebody

ScanCafe

4 FOR $1 STANDARD MEDIA

Wait for at least 25% discount. Have seen 33%.

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Scan and Select

- We scan your images in high resolution: 3000/4000 dpi for 35mm negatives, slides, APS, special media, and 600/1200 dpi for paper photos
- Each of your images will be reviewed and corrected as needed, one at a time, by an assigned technician.
- When your scans are done, we will send you an email.
- You'll have the chance to review all your scans. If there are scans you don't want, simply delete them and you won't be charged for them. You may delete up to 20% of your order.
- When complete, you will check out, and pay the remaining balance on your order.

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Photo Enhancement

$4.99 for this one. Max I have seen so far is $9.99

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ScanCafe (now local in Indy)
Kodak
Memories Renewed
ScanMyPhotos

Legacybox
GoPhoto
ScanDigital
Dijifi

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Where is the Metadata?
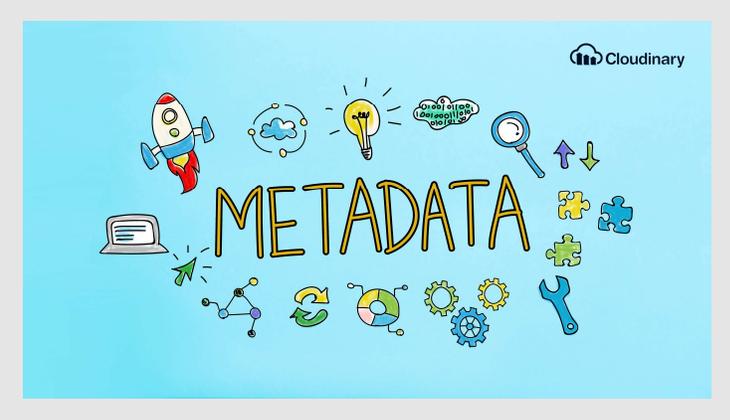
- Back of the photo
- Match photos to negative
- Notes on the negative envelope
- Nothing on negatives
- Processing date on slide mount
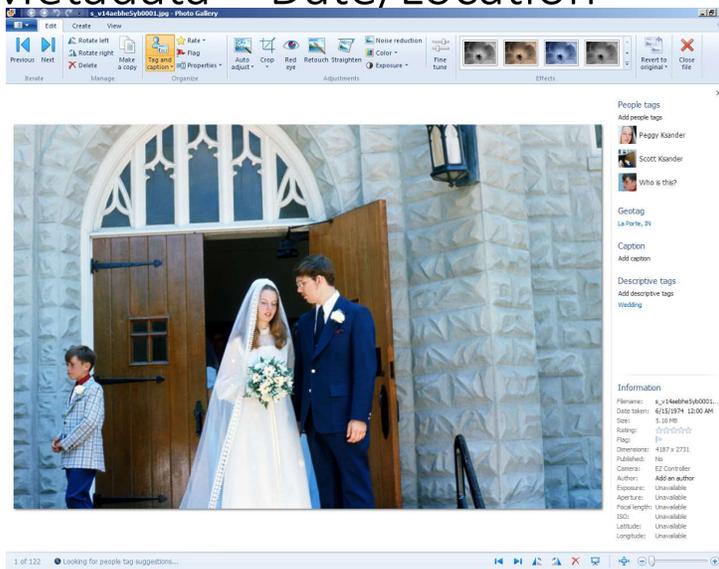- Family notes, calendars, diaries, …
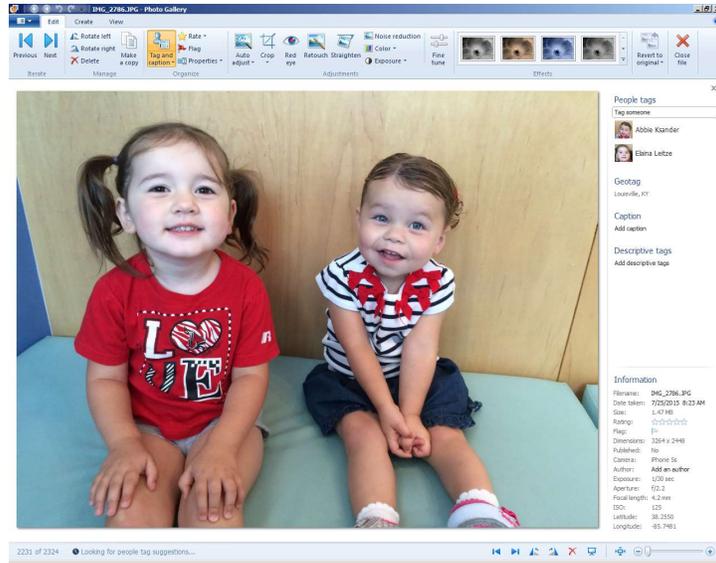- "Forensic" investigations

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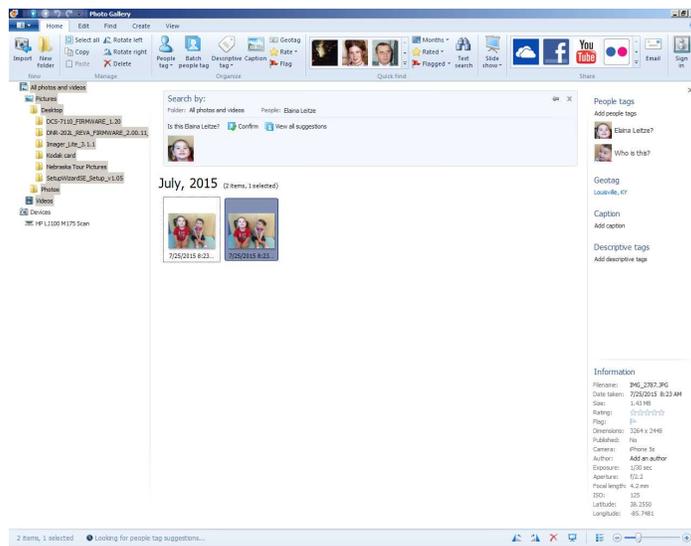
91,637 images!!
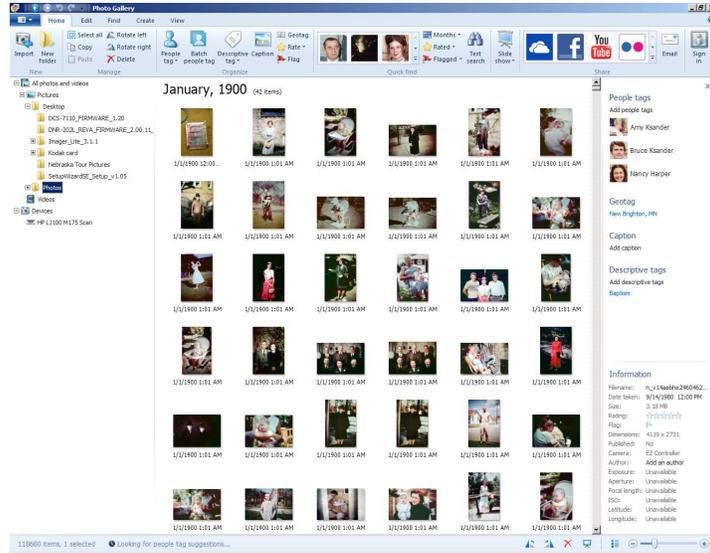
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Adding Metadata – Date/Location

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Adding Metadata – People Tags

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Facial Recognition

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Adding Metadata Caption/Description
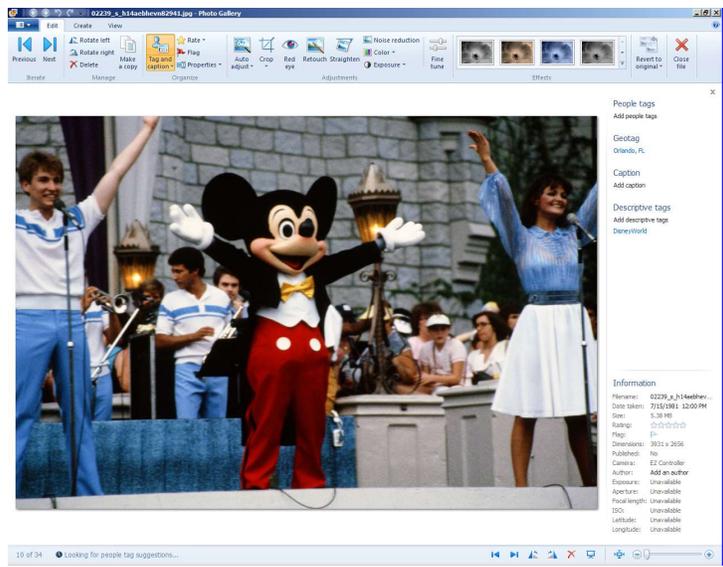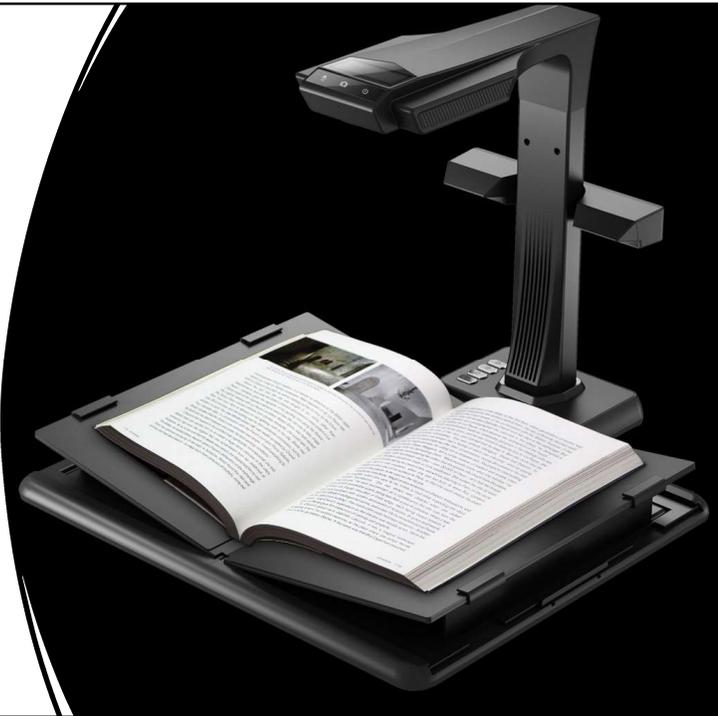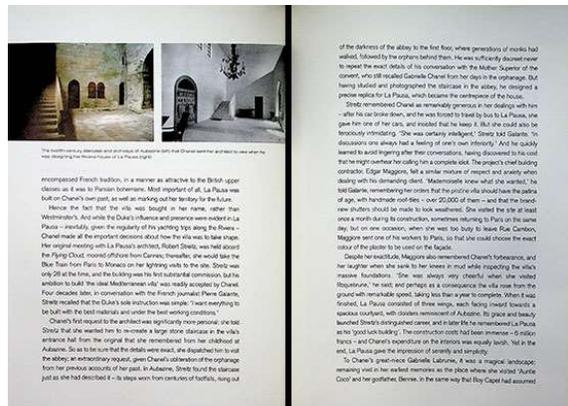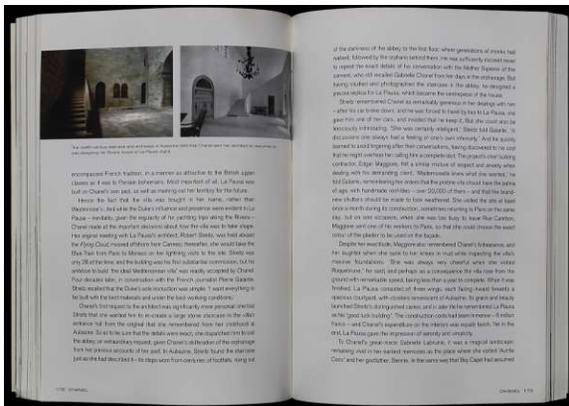

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Document & Book Scanning

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CZUR Scanners

- Smart tilt correction & auto-cropping
- 5 color mode
- OCR Technology to produce editable documents
- Hand button and foot pedal
- Up to 11 x 17 scanning

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Digital Flattening

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HP ScanJet Pro 2500

- 20 pages per minute/40 images per minute
- 50 page auto document feeder
- OCR technology to produce editable documents
- Scan bed 8.5 x 11.7
- Up to 8.5 x 122 inches via document feeder

4.8" H

17.8" W   13.8" D

L DOWN TO "FROM THE MANUFACTURER" TO LEARN MORE.

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Tools

- Adobe Photography Plan CC (Creative Cloud)
  - https://www.adobe.com/creativecloud/photography.html
  - Adobe Lightroom
  - Adobe Photoshop
  - Cloud storage
  - $9.99/month (look for discounts sometimes available)
- Adobe Acrobat (for working with PDFs)
  - Limited free version
  - Standard and Pro ($12.99/month, $14.99/month)

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Tools

- Beyond Compare 4
  - https://www.scootersoftware.com/
  - Standard $30, Pro $60

- Duplicate Cleaner Pro
  - https://www.digitalvolcano.co.uk/dcpurchase.html
  - $29.95

- Picture Information Extractor (PIE)
  - https://www.picmeta.com/products/picture-information-extractor.htm
  - $29.00

- EXIF Data Changer
  - https://www.relliksoftware.com/exifdatechanger/
  - Free and $14.95

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"Of course, I remember when we had to
make do with just 3.2 megapixels…"

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