UNIVERSITY OF WASHINGTON
School of Dentistry
Department of Orthodontics

DIAGNOSTIC DIGITAL PHOTOGRAPHY

Rational: Photographs capture valuable clinically useful information about facial and dental esthetics, as well as gingival form, color, and contour. Extraoral images are especially useful in evaluating soft tissue drape and smile appearance.

Technique: Extraoral Photos

VIEW: FRONTAL FULL FACE (RESTING & SMILING)

- Use light, even-toned background
- Turn camera 90°
- Flash position is from 12 o'clock and adjust to flash only from above
- Focus on patient's eyes
- Take a resting (lips relaxed) and a smiling photo
- Frame should contain from top of subject's head to top of shoulders

VIEW: PROFILE FACE

- Use same background as above, photograph patient's right side
- Turn camera 90°
- Flash position is from 3 o'clock to project shadow behind patient
- Focus on patient's eyebrow
- You should just be able to see opposite eyebrow (3° rotation)
- Lips should be relaxed and lightly touching, smiling shot is optional

Technique: Intraoral Photos

VIEW: FRONTAL INTRAORAL

- Use cheek retractors to lift lips laterally and outward
- Teeth in CO and plane of occlusion parallel with camera
- Fill frame with teeth and gingiva (approx 2nd premolar-2nd premolar)
- Use both right and left flashes
- Focus on maxillary canines

VIEW: BUCCAL INTRAORAL (RIGHT & LEFT)

- Warm mirrors in warm water bath (bowl) to prevent fogging
- Use wire cheek retractors to lift lips laterally and outward, the buccal mirror will usually fit into the large end of the retractor (if not, don't use retractor on mirror side)
- Teeth in CO and plane of occlusion parallel with camera and mirror
- Use same magnification as I/O frontal to fill frame with teeth and gingiva
- Only use the flash on the mirror side to avoid shadows (3 or 9 o'clock)
- Stretch corner of mouth with mirror to obtain ~45° angle to dentition; do not impinge on tissue! Attempt to position camera ~45° to mirror
- If necessary, have patient swallow to clear saliva from field
- Don't forget to switch flash over to opposite side for contralateral shot
- Remember all mirror shots must be flipped for viewing

VIEW: OCCLUSAL INTRAORAL (MAXILLARY & MANDIBULAR)

- Warm mirrors in warm water bath (bowl) to prevent fogging
- Lay patient all the back in the chair; take Mx shot from above, Mn from below; use small retractors
- Use cheek retractors to lift lips up and outward (for Mx, opposite for Mn)
- Both flashes used (3 & 9 o'clock positions)

- Insert mirror and angle to look perpendicular to occlusal plane; patient needs to open wide to get proper angle
- Fill frame with entire arch, be sure incisors are not covered by lips
- Focus on canines or mesial of first premolars
- Use mirror to push tongue back on mandibular shot
- Hold mirror by edges to minimize fingers in view

CLINICAL SETTINGS FOR THE FUJI S-2 PRO DIGITAL CAMERA

SB-29s Flash:

Be sure to seat the "foot" of the controller all the way forward onto the S-2 "shoe," before you wheel-lock it securely in place. The flash setting (top back of the controller) should always stay on the "TTL" (Through The Lens) setting.

105mm "D" Lens:

There is a ring on the lens with an "A" and an "M" for Auto focus or Manual focus. Generally the "M" (manual) focus is preferred for all intra-oral views. Although the camera controls the aperture, you must have the lens aperture ring physically locked on F-32 at all times.

S-2 Pro Body:

- Aperture: select "A" for aperture priority on the top left dial of the camera for all clinical views
  - Use your index finger on the knurled wheel at the top front right of the camera to set the aperture to F-32 for all intra-oral shots. Turn this "finger" wheel to change the aperture to F-11 for extra-oral views.
- Shutter speed: when the flash is turned on the shutter speed will automatically sync to "60"
- Use both flash heads for intra-orals, but only 1 flash head for the extra-orals.
- Function Bar on the back of the camera—use these settings:
  1. White balance (WB): leave on Auto
  2. AF: leave on open bracket
  3. N for normal, as opposed to H (high) or F (fine)
  4. There are 4 resolution levels. Generally, use the mid-range "2304" setting
  5. Set color on "ORG,"—this is VERY IMPORTANT
  6. Set tone on STD
  7. After tone the next setting is also on STD
  8. Lock on OFF

If you need to format or "initialize" a memory card: hit "play"; then menu/OK; then select Format "OK" all frames; then hit menu/OK.

CLINICAL SETTINGS FOR THE CANON EOS DIGITAL REBEL CAMERA

EOS Digital Rebel Body:

Select manual shutter mode (M); "125" shutter speed.

- Aperture: use F-32 for all shots from close-up smile to single-tooth; use F-11 for facial and profile shots (framing upper shoulder to top of head)
- Color Parameters: There are unlimited custom settings available. "Adobe RGB" produces nice results.

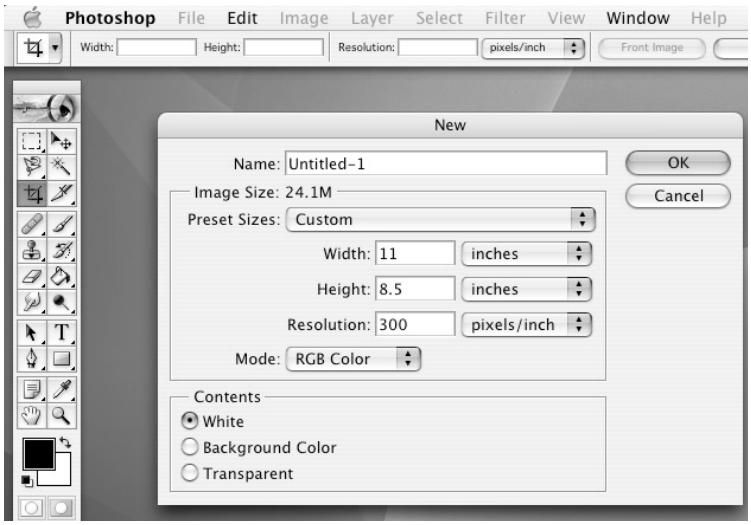
EF 100mm F2.8 USM Lens: use manual focus at full range of manification

MR-14EX Ring Light: Set flash at "ETTL" and +1 1/3 exposure compensation

Technique: Composite Page of Intra- and Extraoral Photographs

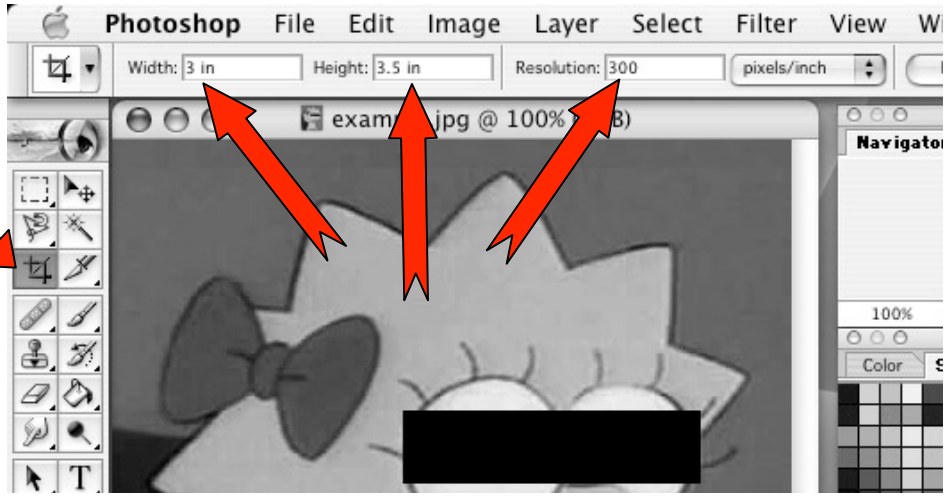
You can use Adobe Photoshop to make nice composite sheet of your patient's images. Remember to save your untouched images at full resolution.

1. In the File menu go to New and make an 11x8.5 inch page at 300 pixel/inch (ppi) resolution. Set the background to "white." This should result in a blank page on the desktop



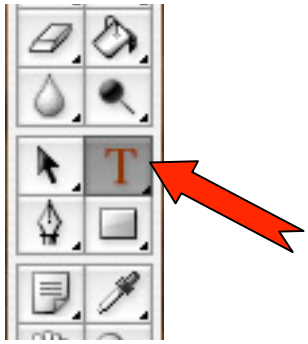
2. Crop the extraoral facial photos at about 3" wide x 3.5" tall at 300ppi using the crop tool [2.5x3.0" if you have four]

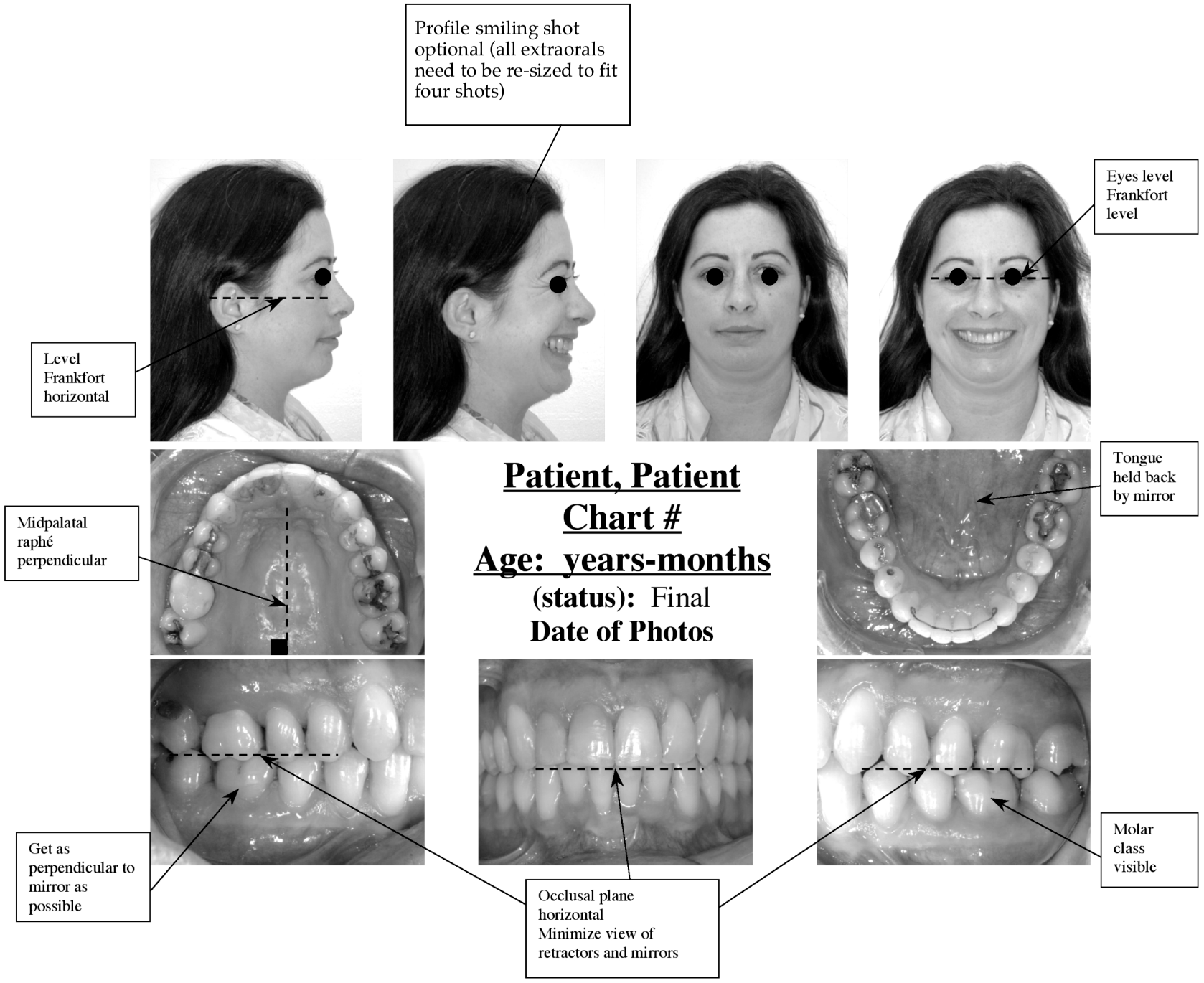
3. Crop the intraoral photos at 3.5" wide x 2.35" tall in a similar fashion [3.5x2.5" if you have four extraoral shots]



4. After cropping, drag the photos onto the blank page with the Move Tool

5. Add the patient's name, chart #, age (years-months), status (initial/final), and the date you took the photos using the Text Tool





Sample Photographic Gallery (scaled down)