**The mini-MIAS database of mammograms**

| [**Pilot European Image Processing Archive**](http://peipa.essex.ac.uk/index.html)  **The PCCV Project: Benchmarking Vision Systems** [Overview](http://peipa.essex.ac.uk/benchmark/index.html) [Tutorials](http://peipa.essex.ac.uk/benchmark/tutorials/index.html) [Methodology](http://peipa.essex.ac.uk/benchmark/methodology/index.html) [Case studies](http://peipa.essex.ac.uk/benchmark/case-studies/index.html) [Test datasets](http://peipa.essex.ac.uk/benchmark/testdata.html) [Our image file format](http://peipa.essex.ac.uk/info/pbmplus-format.html) [HATE test harness](http://peipa.essex.ac.uk/hate/index.html)  http://peipa.essex.ac.uk/istlogo.gif  **Information** [General links](http://peipa.essex.ac.uk/info/links.html) [Conferences](http://peipa.essex.ac.uk/conf/price-mirror/Iris-Conferences.html) [Mailing lists](http://peipa.essex.ac.uk/info/mailing-lists.html) [Research groups](http://peipa.essex.ac.uk/info/groups.html) [Societies](http://peipa.essex.ac.uk/info/societies.html)  [Techniques (CVonline)](http://www.dai.ed.ac.uk/CVonline/) [Software](http://peipa.essex.ac.uk/info/software.html) [Image databases](http://peipa.essex.ac.uk/benchmark/databases/index.html)  **Other stuff** [Linux on ThinkPad](http://peipa.essex.ac.uk/tp-linux/index.html) | By popular request, the original MIAS Database (digitised at 50 micron pixel edge) has been reduced to 200 micron pixel edge and clipped/padded so that every image is 1024 × 1024 pixels. You are free to use the database in your scientific research but you must abide by [the licence agreement](http://peipa.essex.ac.uk/pix/mias/Licence.txt) when using [the imagery.](http://peipa.essex.ac.uk/pix/mias/)  **Credits**  Organiser:  J Suckling  Truth-Data:  C R M Boggis and I Hutt  Co-Workers:  S Astley, D Betal, N Cerneaz, D R Dance, S-L Kok, J Parker, I Ricketts, J Savage, E Stamatakis and P Taylor  Special Thanks:  N Karrsemeijer  PEIPA Maintainer:  A Clark  Reference:  J Suckling *et al* (1994): *The Mammographic Image Analysis Society Digital Mammogram Database* Exerpta Medica. International Congress Series 1069 pp375-378.  **Detailed Information**  The follow list gives the films in the MIAS database and provides appropriate details as follows:  1st column:  MIAS database reference number.  2nd column:  Character of background tissue:  F Fatty  G Fatty-glandular  D Dense-glandular    3rd column:  Class of abnormality present:  CALC Calcification  CIRC Well-defined/circumscribed masses  SPIC Spiculated masses  MISC Other, ill-defined masses  ARCH Architectural distortion  ASYM Asymmetry  NORM Normal    4th column:  Severity of abnormality;  B Benign  M Malignant    5th, 6th columns:  *x,y* image-coordinates of centre of abnormality.  7th column:  Approximate radius (in pixels) of a circle enclosing the abnormality.  There are also several things you should note:   * The list is arranged in pairs of films, where each pair represents the left (even filename numbers) and right mammograms (odd filename numbers) of a single patient. * The size of *all* the images is 1024 pixels x 1024 pixels. The images have been centered in the matrix. * When calcifications are present, centre locations and radii apply to clusters rather than individual calcifications. Coordinate system origin is the bottom-left corner. * In some cases calcifications are widely distributed throughout the image rather than concentrated at a single site. In these cases centre locations and radii are inappropriate and have been omitted.   mdb001 G CIRC B 535 425 197  mdb002 G CIRC B 522 280 69  mdb003 D NORM  mdb004 D NORM  mdb005 F CIRC B 477 133 30  mdb005 F CIRC B 500 168 26  mdb006 F NORM  mdb007 G NORM  mdb008 G NORM  mdb009 F NORM  mdb010 F CIRC B 525 425 33  mdb011 F NORM  mdb012 F CIRC B 471 458 40  mdb013 G MISC B 667 365 31  mdb014 G NORM  mdb015 G CIRC B 595 864 68  mdb016 G NORM  mdb017 G CIRC B 547 573 48  mdb018 G NORM  mdb019 G CIRC B 653 477 49  mdb020 G NORM  mdb021 G CIRC B 493 125 49  mdb022 G NORM  mdb023 G CIRC M 538 681 29  mdb024 G NORM  mdb025 F CIRC B 674 443 79  mdb026 F NORM  mdb027 F NORM  mdb028 F CIRC M 338 314 56  mdb029 G NORM  mdb030 G MISC B 322 676 43  mdb031 G NORM  mdb032 G MISC B 388 742 66  mdb033 D NORM  mdb034 D NORM  mdb035 D NORM  mdb036 D NORM  mdb037 D NORM  mdb038 D NORM  mdb039 D NORM  mdb040 D NORM  mdb041 G NORM  mdb042 G NORM  mdb043 G NORM  mdb044 G NORM  mdb045 G NORM  mdb046 G NORM  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543 49  mdb146 D NORM  mdb147 F NORM  mdb148 F SPIC M 326 607 174  mdb149 F NORM  mdb150 F ARCH B 351 661 62  mdb151 F NORM  mdb152 F ARCH B 675 486 48  mdb153 F NORM  mdb154 F NORM  mdb155 F ARCH M 448 480 95  mdb156 F NORM  mdb157 F NORM  mdb158 F ARCH M 540 565 88  mdb159 F NORM  mdb160 F ARCH B 536 519 61  mdb161 D NORM  mdb162 D NORM  mdb163 D ARCH B 391 365 50  mdb164 D NORM  mdb165 D ARCH B 537 490 42  mdb166 D NORM  mdb167 F ARCH B 574 657 35  mdb168 F NORM  mdb169 D NORM  mdb170 D ARCH M 489 480 82  mdb171 D ARCH M 462 627 62  mdb172 D NORM  mdb173 F NORM  mdb174 F NORM  mdb175 G SPIC B 592 670 33  mdb176 G NORM  mdb177 G NORM  mdb178 G SPIC M 492 600 70  mdb179 D SPIC M 600 514 67  mdb180 D NORM  mdb181 G SPIC M 519 362 54  mdb182 G NORM  mdb183 F NORM  mdb184 F SPIC M 352 624 114  mdb185 G NORM  mdb186 G SPIC M 403 524 47  mdb187 G NORM  mdb188 G SPIC B 406 617 61  mdb189 G NORM  mdb190 G SPIC B 512 621 31  mdb191 G SPIC B 594 516 41  mdb192 G NORM  mdb193 D SPIC B 399 563 132  mdb194 D NORM  mdb195 F SPIC B 725 129 26  mdb196 F NORM  mdb197 D NORM  mdb198 D SPIC B 568 612 93  mdb199 D SPIC B 641 177 31  mdb200 D NORM  mdb201 D NORM  mdb202 D SPIC M 557 772 37  mdb203 F NORM  mdb204 F SPIC B 336 399 21  mdb205 F NORM  mdb206 F SPIC M 368 200 17  mdb207 D SPIC B 571 564 19  mdb208 D NORM  mdb209 G CALC M 647 503 87  mdb210 G NORM  mdb211 G CALC M 680 327 13  mdb212 G NORM  mdb213 G CALC M 547 520 45  mdb214 G NORM  mdb215 D NORM  mdb216 D CALC M \*NOTE 3\*  mdb217 G NORM  mdb218 G CALC B 519 629 8  mdb219 G CALC B 546 756 29  mdb220 G NORM  mdb221 D NORM  mdb222 D CALC B 398 427 17  mdb223 D CALC B 523 482 29  mdb223 D CALC B 591 529 6  mdb224 D NORM  mdb225 D NORM  mdb226 D CALC B 287 610 7  mdb226 D CALC B 329 550 25  mdb226 D CALC B 531 721 8  mdb227 G CALC B 504 467 9  mdb228 G NORM  mdb229 F NORM  mdb230 F NORM  mdb231 F CALC M 603 538 44  mdb232 F NORM  mdb233 G CALC M \*NOTE 3\*  mdb234 G NORM  mdb235 D NORM  mdb236 D CALC B 276 824 14  mdb237 F 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